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RRB JE 2018 CBT-1

Junior Engineer, DMS, CMA · CEN 03/2018 · CBT-1 (22 May - 28 Jun 2019) · Mathematics · Question Paper

English

All 36 Shifts (Sets) · Mathematics Section · Official Answer Key

About this Compilation

This booklet contains all **36 shift papers** of the **RRB JE 2018 CBT-1** examination in **English** (**Mathematics** section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

Source and order. Original RRB questions from RRB's 2019 answer-key portal (printouts in our library; no retyping, no OCR). RRB shuffled the question order for every candidate, so each paper is grouped by section in the official order (Maths 30, Reasoning 25, GA 15, Science 30; section set by Blackbook); options in RRB's order.

Shifts. This English edition holds **36 of the about 38 shifts** of the exam (27 in May, 9 in Jun): only the shifts for which a response sheet with the questions in English was saved. The other shifts were not saved by us.

Answer key. Official RRB key from RRB's answer-key portal (checked against the other saved versions); 7 questions dropped by RRB ("This Question is dropped") are printed as asked, with RRB's note and no tick.

Not readable. 97 questions of 13 shifts could not be read from any saved sheet (sheet printed short or the question printed incompletely): each set's header shows its question count.

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear section by section in the order of the paper, numbered 1 onward.
- Diagram and wide-table questions appear at full width at the end of their section.
- The correct answer is highlighted in green with a tick.

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- Set 2 — 22 May 2019, 4:00 PM - 5:30 PM
- Set 3 — 23 May 2019, 9:00 AM - 10:30 AM
- Set 4 — 23 May 2019, 12:30 PM - 2:00 PM
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Q1 Mathematics

Complete the series.

48, 24, 72, 36, 108, (...)

A. 73

B. 54 ✓

C. 67

D. 52

Q2 Mathematics

Complete the series.

9, 5.5, 7.5, 19, 84, (...)

A. 652

B. 695

C. 688 ✓

D. 621

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Q3 Mathematics

Time taken for a journey is 50 minutes at 48 km/h speed. What should be the speed, if the journey time is reduced by 10 minutes?

A. 76 km/h

B. 42 km/h

C. 80 km/h

D. 60 km/h ✓

Q4 Mathematics

Find the Compound Interest on a sum of Rs.1000 at the rate of 10% per annum for 1.5 years when interest is compounded half-yearly.

A. Rs.150.25

B. Rs.167.36

C. Rs.160.55

D. Rs.157.63 ✓

Q5 Mathematics

If $0 < \theta \leq 90°$, solve for 'θ' where

$\cos^2\theta - 3\cos\theta + 2 = 2\sin^2\theta$.

A. 60°

B. 30°

C. 90° ✓

D. 45°

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Q6 Mathematics

Anjali can complete a job in 10 days. Banu can do it in 5 days. In how many days can the job be done, if they work together?

- A. 3 days 8 hours ✓
- B. 3.5 days
- C. 7.5 days
- D. 6 days

Q7 Mathematics

Evaluate: 1299 × 1299

- A. 1685701
- B. 1538501
- C. 1687401 ✓
- D. 1683701

Q8 Mathematics

The radius of a circular wheel is 7/4 m. How many revolutions does the wheel make to cover 22 km?

- A. 2000 ✓
- B. 100
- C. 1000
- D. 4000

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Q9 Mathematics

If P, Q and R can complete a job in 24, 16 and 12 days respectively, how long will they take to complete the job working together?

A. 5 days 12 hours

B. 5 days 8 hours ✓

C. 5 days

D. 6 days

Q10 Mathematics

Speed of a boat in still water is 13 km/h. Speed of water current is 4 km/h. In what time can the boat cover 68 km upstream?

A. 7 hours

B. 8 hours

C. 7 hours 33 minutes ✓

D. 4 hours

Q11 Mathematics

If 23 @ 47 $ 22 = 48 and 34 @ 18 $ 13 = 39, then 12 @ 43 $ 14 = ?

A. 31

B. 29

C. 41 ✓

D. 35

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Q12 Mathematics

How much profit is got by selling goods at Rs.405 at a profit of 12.5%?

A. Rs.40

B. Rs.36

C. Rs.51

D. Rs.45 ✓

Q13 Mathematics

Complete the series.

125, 169, 25, 13, 5, (...)

A. 3

B. 1 ✓

C. 2

D. 0

Q14 Mathematics

If $x^2 - 4x + 4b = 0$ has two real solutions, find the value of 'b'.

A. $b < 1$ ✓

B. $b = +1, -1$

C. $b \geq 1$

D. $b = 0$

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Q15 Mathematics

What are the LCM and HCF of the reciprocals of 18 and 24?

A. 1/6, 1/4

B. 72, 6

C. 1/72, 1/6

D. 1/6, 1/72 ✓

Q16 Mathematics

A bus leaves Agra at 5 AM and reaches Delhi at 12 noon. Another bus leaves Delhi at 8 AM and reaches Agra at 3 PM. At what time do they meet?

A. 10 AM ✓

B. 9:30 AM

C. 11:30 AM

D. 1:30 PM

Q17 Mathematics

Ratio of the volumes of a sphere of radius 'r' and a cylinder of radius 'r' and height '2r' is:

A. 2 : 3 ✓

B. 3 : 2

C. 3 : 5

D. 5 : 4

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Q18 Mathematics

Find the smallest among these fractions.

1/2, 3/5, 2/7, 5/6

A. 1/2

B. 3/5

C. 5/6

D. 2/7 ✓

Q19 Mathematics

Find the smallest integer whose cube is equal to itself.

A. -1 ✓

B. 0

C. 2

D. 1

Q20 Mathematics

A watch is sold at 5% loss. If the cost price had been 20% more and selling price Rs.115 less, there would have been 40% loss. What is the cost price?

A. Rs.500 ✓

B. Rs.520

C. Rs.450

D. Rs.550

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Q21 Mathematics

The difference between Compound Interest and Simple Interest on a certain sum for 2 years at 12.5% rate is Rs.45. What is the sum?

A. Rs.2440

B. Rs.2000

C. Rs.3000

D. Rs.2880 ✓

Q22 Mathematics

Complete the series.

1, 2, 6, 24, 120, (...)

A. 725

B. 720 ✓

C. 711

D. 715

Q23 Mathematics

In a bag, there are coins of 25 paise, 10 paise and 5 paise in the ratio of 1 : 2 : 3. If there are Rs.30 in all, how many 5 paise coins are there?

A. 50

B. 150 ✓

C. 100

D. 200

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Q24 Mathematics

70% of the employees in a firm are men. 30% of men and 20% of women employees opt for voluntary retirement. What is the percentage of the total number of employees continue in service?

A. 30%

B. 70%

C. 73% ✓

D. 27%

Q25 Mathematics

What is the remainder when $7^2 \times 9^2$ is divided by 8?

A. 1 ✓

B. 3

C. 6

D. 0

Q26 Mathematics

The interior angle of a regular polygon is 150 degrees. The polygon is a/an:

A. Septagon

B. Octagon

C. Decagon

D. Dodecagon ✓

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Q27 Mathematics

The Simple Interest on some amount of money for 2 years is Rs.400. If 'r' is 4% more, then the Simple Interest will be Rs.400 more. What is the original amount of money?

A. Rs.5000 ✓

B. Rs.12000

C. Rs.10000

D. Rs.4000

Q28 Mathematics

A clock is set to the right time at 4:00 AM on Thursday. If it gains 20 seconds in every 3 hours, then what is the time shown on the clock at 8:30 PM on Friday night?

A. 8 hours 34 minutes PM

B. 8 hours 34 minutes 30 seconds PM ✓

C. 9 hours 34 minutes PM

D. 8 hours 30 minutes 30 seconds PM

Q29 Mathematics

Find the value of sin 120° sin 240° sin 270°.

A. -1/8

B. 1/8

C. -1/2

D. 3/4 ✓

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Q30 Mathematics

Rajan got married 8 years back. His age then was 5/6 of his present age. His sister was 10 years younger at the time of his marriage. How old is she now?

A. 26

B. 40

C. 38 ✓

D. 32

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

If 2508 ÷ 12.54 + (X × 11) = 200, then find the value of 'X'.

A. 2.5

B. 4

C. 0 ✓

D. 3.5

Q2 Mathematics

What should be the minimum age to get the Rajya Sabha membership?

A. 18 years

B. 25 years

C. 30 years ✓

D. 35 years

Q3 Mathematics

Find the missing number in the following series.

4, 7, 12, (...), 28, 39

A. 24

B. 19 ✓

C. 14

D. 16

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Q4 Mathematics

A gain of 12% is got by selling an article for Rs.3360. What should be the selling price, if the profit aimed is only 8%?

A. Rs.3020

B. Rs.3200

C. Rs.3040

D. Rs.3240 ✓

Q5 Mathematics

If 8 # 2 @ 5 = 21 and 4 # 6 @ 2 = 26, then what will be 3 # 7 @ 9?

A. 40

B. 30 ✓

C. 47

D. 52

Q6 Mathematics

A number of two-digits has 3 for its unit's digit, and the sum of the digits is 1/7 of the number itself. Find the number.

A. 43

B. 53

C. 73

D. 63 ✓

Q7 Mathematics

Two numbers are in the ratio 3 : 5. Their LCM is 75. What is their HCF?

Top

A. 4

B. 3

C. 15

D. 5 ✓

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Q8 Mathematics

A man walks from P to Q at the rate of 5 km/h and returns from Q to P at 3 km/h. What is his average speed for the whole journey?

A. 3.5 km/h

B. 8 km/h

C. 3.75 km/h ✓

D. 3.25 km/h

Q9 Mathematics

Find the wrong number in the following series.

9, 15, 24, 34, 51, 69

A. 34 ✓

B. 51

C. 15

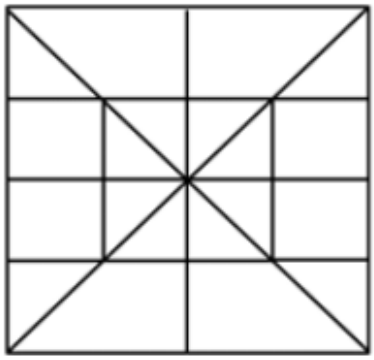
D. 24

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Q10 Mathematics

How many squares are there in the given figure?



A. 20

B. 11

C. 25

D. 16 ✓

Q11 Mathematics

42 horses consume 270 kg of corn in 27 days. If there are 21 horses only, then how many days will 300 kg of corn last?

A. 45

B. 60 ✓

C. 72

D. 48

Q12 Mathematics

Find the ODD one out from the given options.

A. 12 : 39 ✓

B. 15 : 46

C. 9 : 28

D. 8 : 25

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Q13 Mathematics

The total of ages of X, Y and Z is 27. X is 2 years older than Y and Y is twice as old as Z. What is the age of Y?

A. 12

B. 5

C. 8

D. 10 ✓

Q14 Mathematics

P and Q enter into a partnership with investments of Rs.1400 and Rs.1800 respectively. They share half of the profit equally for running the business and the remaining profit in the ratio of their investments. If the difference in their shares of profits is Rs.47, what is the total profit?

A. Rs.752 ✓

B. Rs.954

C. Rs.804

D. Rs.504

Q15 Mathematics

Buses come out of a bus terminus in intervals of 10 minutes at 20 km/h. A man coming from opposite direction towards the terminus meets the buses at intervals of 8 minutes. What is his speed?

A. 4 km/h

B. 5 km/h ✓

C. 3.75 km/h

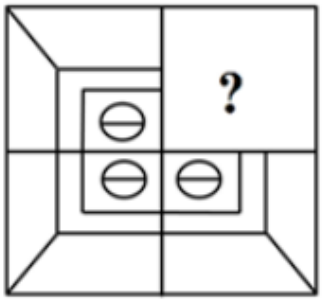
D. 6 km/h

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Q16 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A.  ✓

B. 

C. 

D. 

Q17 Mathematics

A shopkeeper gives a discount of 10% once in 4 months. If a man purchases an article in this scheme for Rs.25515 in December, then what was the initial price in January?

A. Rs.40000

B. Rs.35000 ✓

C. Rs.45000

D. Rs.36000

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Q18 Mathematics

A train 120 m long crosses a platform of length 100 m in 10 seconds. What is its speed?

A. 100 km/h

B. 79.2 km/h ✓

C. 72 km/h

D. 80 km/h

Q19 Mathematics

If tan 2A = cot(A-18°) and 2A is an acute angle, then find 'A'.

A. 36° ✓

B. 28°

C. 18°

D. 24°

Q20 Mathematics

On a certain sum of money, the Compound Interest for 2 years is Rs.309 and the Simple Interest is Rs.300. Find the rate of interest per annum.

A. 6% ✓

B. 8%

C. 9%

D. 7%

Q21 Mathematics

Two right circular cones of height 16.4 cm and 17.2 cm respectively have base radius of 8.4 cm. These two cones are melted and recast into a sphere. Find the diameter of the sphere.

A. 8.2 cm

B. 16.8 cm ✓

C. 8.6 cm

D. 8.4 cm

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Q22 Mathematics

If the ratio of ages of A and B is 5 : 6 and sum of their ages is 55, what is the age of A?

A. 18

B. 15

C. 25 ✓

D. 30

Q23 Mathematics

Perimeter of an isosceles triangle is 32 cm. The base is 6/5 times the equal side. What is the area?

A. 64 cm^2

B. 48 cm^2 ✓

C. 57 cm^2

D. 39 cm^2

Q24 Mathematics

If the perimeter of a triangle is 28 cm and its inradius is 3.5 cm, what is its area?

A. 49 cm^2 ✓

B. 28 cm^2

C. 35 cm^2

D. 42 cm^2

Q25 Mathematics

If $27^{20} + 27^{10} = 3^K$, then find the value of K.

A. 30 ✓

B. 15

C. 12

D. 27

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Q26 Mathematics

Find the missing number in the following series.

110, 99, 86, (...), 54, 35

A. 67

B. 71 ✓

C. 81

D. 75

Q27 Mathematics

P alone can do a job in 18 days. P and Q working together can do it in 15 days. They started to work together. After 10 days Q left, and P alone has to complete the job. In how many more days can P complete the job?

A. 5 days

B. 7 days

C. 6 days ✓

D. 8 days

Q28 Mathematics

If Rs.64 amounts to Rs.83.20 in 2 years, what will Rs.86 amount to in 4 years at the same rate per cent Simple Interest per annum?

A. Rs.124.70

B. Rs.137.60 ✓

C. Rs.114.8

D. Rs.127.40

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Q29 Mathematics

The LCM of two numbers which are in the ratio 2 : 3 is 48. What is their sum?

A. 32

B. 28

C. 64

D. 40 ✓

Q30 Mathematics

A person borrows Rs.5000 for 2 years at 4% per annum Simple Interest. He immediately lends it to another person at 6.25% per annum for 2 years. Find his gain in the transaction per year.

A. Rs.167.50

B. Rs.112.50 ✓

C. Rs.125

D. Rs.150

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Find $\cos^4 A - \sin^4 A$.

A. 0

B. $\sin^2 A + \cos^2 A$

C. 2

D. cos2A ✓

Q2 Mathematics

What is the gain percent when articles bought at 6 pieces for Rs.5 are sold at 5 pieces for Rs.6?

A. 30%

B. 44% ✓

C. 33%

D. 25%

Q3 Mathematics

What is the relation between the frequency v, wavelength λ and speed v of the sound?

A. $v = \lambda v$ ✓

B. $v = \lambda v^2$

C. $v = \lambda / v$

D. $v = v / \lambda$

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Q4 Mathematics

Which of these numbers has the most number of divisors?

- A. 240 ✓
- B. 156
- C. 200
- D. 172

Q5 Mathematics

'A' sells goods to 'B' at 25% profit for Rs.300. 'B' sells it to 'C' at 10% loss. In this sale, C's cost price is equal to what percent of A's cost price?

- A. 87.5%
- B. 110%
- C. 112.5% ✓
- D. 97.5%

Q6 Mathematics

After spending 1/4th of pocket money on chocolates and 1/8th on pizza, a girl is left with Rs.40. How much money did she have at first?

- A. Rs.100
- B. Rs.64 ✓
- C. Rs.52
- D. Rs.80

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Q7 Mathematics

Three men entered into a business in partnership for 14 months, 8 months and 7 months. If the ratio of their profit is 5 : 7 : 8, what is the ratio of their investments?

A. 20 : 49 : 64 ✓

B. 5 : 4 : 4

C. 28 : 49 : 64

D. 5 : 7 : 8

Q8 Mathematics

Simplify: $3\frac{1}{2}+5\frac{2}{3}-4\frac{7}{6}$

A. 2

B. 8

C. 12

D. 4 ✓

Q9 Mathematics

Complete the series.
5, 4, 6, 15, 56, (...)

A. 253

B. 275 ✓

C. 271

D. 283

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Q10 Mathematics

Complete the series.

31, 29, 24, 22, 17, (...)

A. 13

B. 14

C. 12

D. 15 ✓

Q11 Mathematics

Raja is three times as old as Arun. Three years ago, he was four times as old as Arun. How old is Raja now?

A. 6

B. 12

C. 27 ✓

D. 15

Q12 Mathematics

A thief escapes in a car driving at 60 km/h towards a city 400 km away. Only after 30 minutes, the police start to chase at 80 km/h. What distance will the police have covered when the thief is caught?

A. 90 km

B. 120 km ✓

C. 70 km

D. 85 km

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Q13 Mathematics

A courtyard 4.55 m long and 5.25 m broad is paved with square tiles of equal size. What is the largest size of tile used?

A. 21 cm

B. 25 cm

C. 35 cm ✓

D. 28 cm

Q14 Mathematics

If S = 3T/2, then express 'T' as a percentage of S + T.

A. 75%

B. 40% ✓

C. 25%

D. 20%

Q15 Mathematics

Evaluate: $1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\frac{1}{16}+.....$

A. 1/50

B. 3

C. 1/22

D. 2 ✓

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Q16 Mathematics

If 200 men can dig a canal working for 8 hours a day in 6 days, how long will it take to dig the canal, if 300 men work 6 hours per day?

A. $4\frac{2}{3}$ days

B. 6 days

C. 7 days

D. $5\frac{1}{3}$ days ✓

Q17 Mathematics

The perimeter of a rectangle is twice the perimeter of a square of side 18 units. If the breadth of the rectangle is 45, what is its area?

A. 1360 sq. units

B. 1050 sq. units

C. 1152 sq. units

D. 1215 sq. units ✓

Q18 Mathematics

If 4 $ 4 # 2 = 8 and 3 $ 8 # 2 = 12, then 7 $ 6 # 3 = ?

A. 14 ✓

B. 11

C. 16

D. 9

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Q19 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C.  ✓

D. 

Q20 Mathematics

Find the area of a square inscribed in a circle of radius 8 cm.

A. 128 cm^2 ✓

B. 144 cm^2

C. 136 cm^2

D. 64 cm^2

Q21 Mathematics

A train passes a platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/h, what is the length of the platform?

A. 300 m

B. 360 m

C. 120 m

D. 240 m ✓

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Q22 Mathematics

On a certain sum of money, the Simple Interest for 2 years is Rs.140 at 4% per annum. Find the difference between Compound Interest and Simple Interest on the same sum at same rate and same period.

A. Rs.3

B. Rs.1.80

C. Rs.2.40

D. Rs.2.80 ✓

Q23 Mathematics

Find the LCM and HCF of 1.75, 5.6 and 7.

A. 24, 0.35

B. 28, 0.25

C. 24, 0.25

D. 28, 0.35 ✓

Q24 Mathematics

Find $(1 - \cos^2 \theta)(\cot^2\theta + 1) - 1$.

A. $\sec^2\theta$

B. -2

C. 2

D. 0 ✓

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Q25 Mathematics

Six typists can type a given data in 16 days. How many days will 4 typists take to do the same work?

A. 24 days ✓

B. 22 days

C. 18 days

D. 20 days

Q26 Mathematics

Find the percentage of wastage material in converting a cylinder of base diameter 10 cm and height 20 cm into a cone of equal base, but double the height of the cylinder.

A. 33.3% ✓

B. 20%

C. 35%

D. 25%

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Q27 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 48 ✓

B. 57

C. 41

D. 53

Q28 Mathematics

If BOOK-PEN = 8, then PEN-NIB = ?

A. 6

B. 10 ✓

C. 8

D. 12

Q29 Mathematics

If $x + y = 11$, then $(-1)^x + (-1)^y$ is equal to _____ (where x, y are whole numbers).

A. 0 ✓

B. 1

C. 2

D. -1

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Q30 Mathematics

Age of A : Age of B is 3 : 2. Ten years hence, the sum of their ages will be 80. What are their present ages?

A. 42, 28

B. 36, 24 ✓

C. 45, 30

D. 27, 18

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

P can do some work in 4 hours. Q and R together can finish it in 3 hours while P and R can do it in 2 hours. How long will Q take to complete it, if he works alone?

A. 8 hours

B. 12 hours ✓

C. 10 hours

D. 15 hours

Q2 Mathematics

If 0.001 ÷ x = 0.01, then find 'x'.

A. 0.5

B. 1

C. 0.1 ✓

D. 0.01

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Q3 Mathematics

Complete the series.

15, 8, 20, 18, 25, 28, (...)

A. 32

B. 37

C. 30 ✓

D. 35

Q4 Mathematics

The present age of a mother and daughter is in the ratio of 8 : 3. After 12 years, the ratio of their ages will be 2 : 1. What is the sum of the present age of the mother and the daughter?

A. 71 years

B. 66 years ✓

C. 69 years

D. 74 years

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Q5 Mathematics

How long does a train 110 m long running at a speed of 72 km/h take to cross a bridge 132 metres in length?

A. 12.42 seconds

B. 14.3 seconds

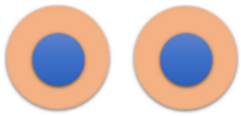
C. 12.1 seconds ✓

D. 9.8 seconds

Q6 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Mother, Children, Human, Father

A.  ✓

B. 

C. 

D. 

Q7 Mathematics

Sum and difference of the ages of two kids are 9 and 1 respectively. How long ago were their ages in the ratio 3 : 2?

A. 2 years ✓

B. 4 years

C. 1 year

D. 3 years

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Q8 Mathematics

Simplify: cos θ/(1 + sin θ)

A. cosec θ - cot θ

B. sec θ + tan θ

C. sec θ - tan θ ✓

D. cosec θ + cot θ

Q9 Mathematics

Find the place value of 5 in 2.00589.

A. 5/100

B. 5/10

C. 5

D. 5/1000 ✓

Q10 Mathematics

Which is better?

(1) Successive discounts of 10% and 20%

(2) Successive discounts of 20% and 10%

A. Cannot be determined

B. Both are same ✓

C. Successive discounts of 20% and 10%

D. Successive discounts of 10% and 20%

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Q11 Mathematics

Find the LCM of ab^2c^2, a^2bc and $a^3b^3c^2$.

A. abc

B. $a^2b^2c^2$

C. $a^3b^3c^2$ ✓

D. $a^3b^3c^3$

Q12 Mathematics

Find the missing number in the following series.

2, 4, 16, 96, (...), 7680

A. 768 ✓

B. 773

C. 796

D. 752

Q13 Mathematics

Find the HCF of 175, 56 and 70.

A. 5

B. 35

C. 7 ✓

D. 70

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Q14 Mathematics

P gets 360 marks out of a total score of 500. Marks of P are 10% less than Q's score. Q got 25% more than R, and R got 20% less than S. What is the percentage marks of S?

A. 68%

B. 72%

C. 75%

D. 80% ✓

Q15 Mathematics

From a picnic arranged for 10 persons, 2 opted out. The expenses had to be equally shared by them. What is the percentage increase in the expenses of each person after the two left?

A. 12%

B. 25% ✓

C. 20%

D. 15%

Q16 Mathematics

A sum of money at Simple Interest amounts to Rs.2800 in 2 years and Rs.3250 in 5 years. Find the sum and the rate of interest.

A. Rs.2500 and 6% ✓

B. Rs.1000 and 10%

C. Rs.2000 and 5%

D. Rs.3000 and 15%

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Q17 Mathematics

The cost of an article is Rs.380. The profit is 20% of the cost while packing expenses are 5% of the sales. Find the net selling price.

A. Rs.470

B. Rs.480 ✓

C. Rs.510

D. Rs.486.50

Q18 Mathematics

Simplify: $\sqrt{10+\sqrt{25+\sqrt{108+\sqrt{154+\sqrt{225}}}}}$

A. 3

B. 8

C. 4 ✓

D. 6

Q19 Mathematics

Find the volume of the cuboid whose length is 24 cm, breadth is 18 cm and height is 16 cm.

A. 7142 cm^3

B. 7089 cm^3

C. 5184 cm^3

D. 6912 cm^3 ✓

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Q20 Mathematics

How many triangles are there in the given figure?



A. 8

B. 4

C. 7

D. 5 ✓

Q21 Mathematics

If the two roots of a quadratic equation are α, β where α + β = 8 and α - β = 2, then the equation is:

A. $x^2 + 8x + 15 = 0$

B. $x^2 - 8x - 15 = 0$

C. $x^2 + 8x - 15 = 0$

D. $x^2 - 8x + 15 = 0$ ✓

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Q22 Mathematics

Find the missing number in the following series.

25, 52, 27, (...), 29, 92

- A. 72 ✓
- B. 62
- C. 92
- D. 82

Q23 Mathematics

Two places—P and Q are 400 miles apart. A car starts from P at a speed of 50 mph towards Q. After 75 minutes, another car starts from Q to P at a speed of 40 mph. At what time will the cars meet?

- A. 5 hours ✓
- B. 4 hours
- C. 2 hours 45 minutes
- D. 4 hours 30 minutes

Q24 Mathematics

Find the largest two-digit prime number.

- A. 91
- B. 97 ✓
- C. 93
- D. 89

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Q25 Mathematics

The normal human heart-beat per minute on an average is -

A. 50-100

B. 90-100

C. 60-100 ✓

D. 100-120

Q26 Mathematics

If the side of a square is increased by 20%, its area is increased by k%. Find the value of 'k'.

A. 24

B. 44 ✓

C. 20

D. 36

Q27 Mathematics

Complete the series.

25, 125, 62.5, 250, 125, 375, (...)

A. 165

B. 187.5 ✓

C. 185

D. 175.7

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Q28 Mathematics

P and Q can do some work individually in 8 and 16 days respectively. They work together and completed the work. What is the ratio of work done by P and Q, when the work was completed?

A. 2 : 3

B. 2 : 5

C. 3 : 2

D. 2 : 1 ✓

Q29 Mathematics

The Simple Interest on a sum of money will be Rs.600 after 10 years. If the principal is increased three times after 5 years, what will be the total interest at the end of 10 years?

A. Rs.300

B. Rs.600

C. Rs.900

D. Rs.1200 ✓

Q30 Mathematics

Crude birth rate is the number of live births per _____ people each year.

A. 10000

B. 100

C. 10

D. 1000 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

One year ago the ratio of the ages of two sister was 2 : 3. The sum of their present ages is 12. What are their ages now?

A. 5, 7 ✓

B. 7.5, 4.5

C. 9, 3

D. 8, 4

Q2 Mathematics

P is 30% more efficient than Q. If P alone can do some work in 20 days, then how long will Q alone take to do it?

A. 26 days ✓

B. 28 days

C. 18 days

D. 30 days

Q3 Mathematics

Ages of Sundar and Seema are in the ratio 5 : 4. Three years hence, the ratio of their ages will become 11 : 9. What is Seema's present age?

A. 24 ✓

B. 40

C. 27

D. 25

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Q4 Mathematics

Complete the series.

3, 42, 504, 5040, (...)

A. 40533

B. 40421

C. 40469

D. 40320 ✓

Q5 Mathematics

If (25/8)% of 128 = x, find the value of 'x'.

A. 4 ✓

B. 12

C. 8

D. 3

Q6 Mathematics

P and Q can complete a job in 6 and 8 days individually. They both finish the job with the help of R in 3 days. How much wages are to be paid to R, if the total wages are Rs.3200?

A. Rs.375

B. Rs.1200

C. Rs.400 ✓

D. Rs.320

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Q7 Mathematics

Simplify: [18 ÷ 2 + (5 × 3)] / [5 × 3 - 18 ÷ 2]

A. 5/6

B. 17/12

C. 14/6

D. 4 ✓

Q8 Mathematics

Find the LCM of 36/225, 48/150 and 72/85.

A. 144/5 ✓

B. 140/15

C. 72/85

D. 150/225

Q9 Mathematics

An item was sold at 23% more than the cost price. If the selling price is Rs.14022, then find the cost price.

A. Rs.11200

B. Rs.11400 ✓

C. Rs.12210

D. Rs.10400

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Q10 Mathematics

If $\frac{x}{\sqrt{128}}=\frac{\sqrt{162}}{x}$, then find the value of 'x'.

A. 12 ✓

B. 14

C. 13

D. 144

Q11 Mathematics

The difference between 1/3 and 1/4 of a number is equal to its square root. Find the number.

A. 136

B. 72

C. 120

D. 144 ✓

Q12 Mathematics

What is the GCD of these polynomials?

$(x^3 + x^2 + x + 1)$ and $(x^3 + 2x^2 + x + 2)$?

A. $(x + 1)(x + 2)$

B. $(x + 1)$

C. $(x^2 + 1)$ ✓

D. $(x^2 + 1)(x + 1)(x + 2)$

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Q13 Mathematics

If a sum of money doubles itself in 4 years at a certain rate, when will it become 16 time itself at the same rate of Simple Interest?

A. 25 years

B. 16 years

C. 12 years

D. 60 years ✓

Q14 Mathematics

The sum of all the edges of a cube is 48 cm. What is its volume?

A. 64 cm^3 ✓

B. 36 cm^3

C. 27 cm^3

D. 216 cm^3

Q15 Mathematics

By how much above cost price should an article be marked so as to gain 17% even after allowing a 22% discount?

A. 45%

B. 28%

C. 35%

D. 50% ✓

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Q16 Mathematics

Which of these pairs are co-prime numbers?

A. 11, 15 ✓

B. 15, 36

C. 24, 42

D. 11, 22

Q17 Mathematics

Find the difference between Compound Interest and Simple Interest on a sum of Rs.15000 for 2 years at 8% per annum.

A. Rs.108

B. Rs.120

C. Rs.100

D. Rs.96 ✓

Q18 Mathematics

Simplify: cos 18° + cos 162° + sin 126° + sin 234°

A. 2

B. 1

C. -2

D. 0 ✓

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Q19 Mathematics

Simplify: 8 ÷ [(9 – 5) ÷ {(7 – 2) ÷ (3 + 9 ÷ 24)}]

- A. 80/27 ✓
- B. 20/27
- C. 60/27
- D. 160/27

Q20 Mathematics

If the surface area of a cube is 3750 cm², then find its volume.

- A. 12225 cm^3
- B. 15625 cm^3 ✓
- C. 14255 cm^3
- D. 16625 cm^3

Q21 Mathematics

Find the HCF of 513, 1107 and 783.

- A. 27 ✓
- B. 21
- C. 22
- D. 19

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Q22 Mathematics

In covering a certain distance, two persons travel at speeds in the ratio 18 : 12. What is the ratio of the time taken by them?

A. 2 : 5

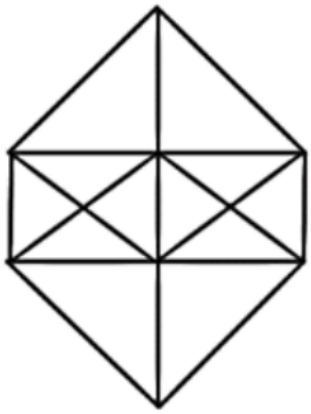
B. 2 : 3 ✓

C. 2 : 1

D. 3 : 2

Q23 Mathematics

How many triangles are there in the given figure?



A. 24

B. 28 ✓

C. 20

D. 32

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Q24 Mathematics

Find the value of $\sin 75°$.

A. $\frac{\sqrt{6}-\sqrt{2}}{4}$

B. $\frac{\sqrt{6}+\sqrt{2}}{4}$ ✓

C. $\frac{\sqrt{3}+1}{2}$

D. $\frac{\sqrt{3}-1}{2\sqrt{2}}$

Q25 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 15

B. 16 ✓

C. 13

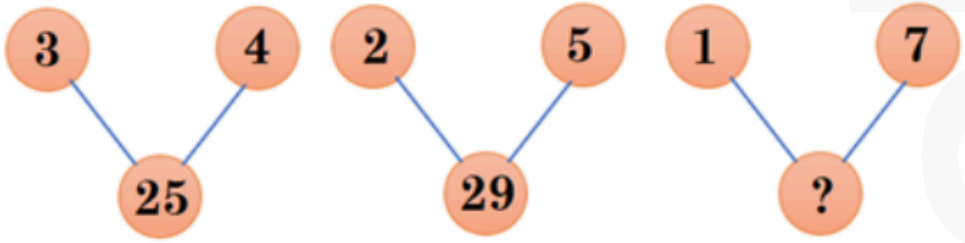
D. 12

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Q26 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 37

B. 34

C. 50 ✓

D. 41

Q27 Mathematics

If a : (b + c) = 1 : 3 and c : (a + b) = 5 : 7, find the value of b : (c + a).

A. 4 : 5

B. 3 : 5

C. 1 : 2 ✓

D. 3 : 4

Q28 Mathematics

Trains P and Q move along parallel tracks in the same direction. Train P completely overtakes the train Q in 60 seconds, and a passenger in the train P crosses train Q in 40 seconds. If the trains have their speeds in the ratio 2 : 1, what is the ratio of their lengths?

A. 3 : 1

B. 1 : 2 ✓

C. 3 : 2

D. 3 : 4

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Q29 Mathematics

Speed of a man in still water is (28/3) km/h. It takes him thrice as much time to row upstream as it takes to row downstream. What is the velocity of the stream?

A. (16/3) km/h

B. (14/3) km/h ✓

C. (20/3) km/h

D. 6 km/h

Q30 Mathematics

Complete the series.

19, 67, 43, 55, 49, (...)

A. 52 ✓

B. 53

C. 51

D. 54

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Q1 Mathematics

P, Q and R can do some work in 11 days, 20 days and 55 days respectively. In how many days can the work be done, if P gets the assistance of Q and R on alternate days?

A. 8 ✓

B. 7

C. 9

D. 10

Q2 Mathematics

What is the maturity value of Rs.25000 at the end of 2 years at 9.25% Simple Interest?

A. Rs.30225

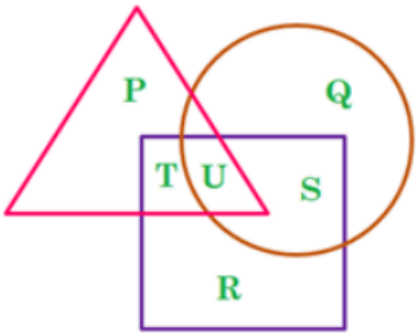
B. Rs.28000

C. Rs.29250

D. Rs.29625 ✓

Q3 Mathematics

In the given figure, the circle represents mothers, triangle represents women, and square represents sisters. Which region represents the persons who are mothers and sisters but not women?



A. Q

B. U

C. S ✓

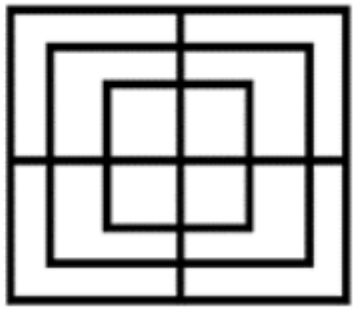
D. T

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Q4 Mathematics

How many squares are there in the given figure?



A. 9

B. 15 ✓

C. 8

D. 6

Q5 Mathematics

Five times a positive integer is 3 less than twice its square. Find the integer.

A. 5

B. 3 ✓

C. 2

D. 8

Q6 Mathematics

Curved surface area of a cylinder is 440 cm^2. The base circumference is 44 cm. What is its volume?

A. 1540 cm^3 ✓

B. 710 cm^3

C. 3050 cm^3

D. 1240 cm^3

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Q7 Mathematics

The area of a circle got increased by 22 cm^2 when the radius was increased by 1 cm. What was the original radius?

A. 5 cm

B. 9 cm

C. 3 cm ✓

D. 7 cm

Q8 Mathematics

Average age of 3 children born at intervals of 2 years is 8. How old is the eldest child?

A. 8 years

B. 10 years ✓

C. 7 years

D. 12 years

Q9 Mathematics

The product of four consecutive numbers is always divisible by which of the following numbers?

A. 48

B. 24 ✓

C. 10

D. 22

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Q10 Mathematics

Find the wrong number in the given series.

324, 109, 36, 12, 4

A. 109 ✓

B. 4

C. 12

D. 324

Q11 Mathematics

A rectangular parking space is marked out by painting three of its sides. If the length of the unpainted side is 9 ft, and the sum of the lengths of the painted sides is 37 ft, then what is the area of the parking space in square feet?

A. 46 ft^2

B. 252 ft^2

C. 126 ft^2 ✓

D. 81 ft^2

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Q12 Mathematics

Complete the series.

2, 4, 11, 37, 153, (...)

A. 753

B. 771 ✓

C. 732

D. 721

Q13 Mathematics

Simplify: $\frac{\cot(90°-\theta)\sin(180°-\theta)\sec(360°-\theta)}{\tan(180°+\theta)\sec(-\theta)\cos(90°+\theta)}$

A. 2

B. -1 ✓

C. 1

D. -2

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Q14 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



Top

A. 14

B. 18

C. 6 ✓

D. 9

Q15 Mathematics

Rs.26000 is split into two sums such that the Simple Interest on one part for 5 years at 10% equals the Simple Interest on the other part for 6 years at 9%. What is the sum placed at 10% for 5 years?

A. Rs.13500 ✓

B. Rs.12500

C. Rs.15000

D. Rs.14000

Q16 Mathematics

If 40% of 70 is x% more than 30% of 80, then find 'x'.

A. 16.67% ✓

B. 33.33%

C. 40%

D. 14.28%

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Q17 Mathematics

Two trains are moving in opposite directions at 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. What is the time taken by the slower train to cross the faster train in seconds?

A. 36 seconds

B. 48 seconds ✓

C. 45 seconds

D. 49 seconds

Q18 Mathematics

What is the LCM of 2/3, 4/6, 8/27?

A. 8/27

B. 8/3 ✓

C. 2/3

D. 2/27

Q19 Mathematics

Simplify: $\dfrac{\frac{1}{4} \div \frac{1}{4}\left(\frac{1}{4}\right)}{\frac{1}{4} \div \frac{1}{4} \times \frac{1}{4}}$

A. 1

B. 16 ✓

C. 1/4

D. 1/16

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Q20 Mathematics

A watch is sold at a profit of 20%. If both the cost price and selling price are reduced by Rs.100, then the profit would be 5% more. Find the original cost price of the watch.

A. Rs.550

B. Rs.600

C. Rs.450

D. Rs.500 ✓

Q21 Mathematics

If $x=(7-4\sqrt{3})$, then find the value of $\left(x+\frac{1}{x}\right)$.

A. $14+8\sqrt{3}$

B. $3\sqrt{3}$

C. $8\sqrt{3}$

D. 14 ✓

Q22 Mathematics

Find the greatest number that will divide 115, 149 and 183 leaving remainders 3, 5, 7 respectively.

A. 18

B. 14

C. 16 ✓

D. 20

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Q23 Mathematics

P and Q can do a work in 10 days. Q and R can do it in 12 days. All three together can finish in 8 days. In how many days can P and R can complete the work?

A. 8 days

B. 12 days

C. 15 days ✓

D. 10 days

Q24 Mathematics

If the numbers 1 and 2 are interchanged, 3 and 4 change places and also the symbols x and +, then find the value of 1 + 3 x 2 + 4.

A. 14 ✓

B. 3 / 2

C. 12

D. 3

Q25 Mathematics

A boat moving upstream takes 8 hours 48 minutes to cover a distance while it takes 4 hours to return to the starting point, downstream. What is the ratio of the speed of boat in still water to that of water current?

A. 4 : 3

B. 3 : 2

C. 2 : 1

D. 8 : 3 ✓

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Q26 Mathematics

The profit earned in selling an article for Rs.2540 is equal to the loss incurred in selling at Rs.1850. What is the cost price?

A. Rs.2020

B. Rs.2095

C. Rs.2195 ✓

D. Rs.2010

Q27 Mathematics

Complete the series.

Top

4, 196, 16, 144, 36, 100, 64, (...)

A. 36

B. 80

C. 64 ✓

D. 100

Q28 Mathematics

Find the value of $\sin 30°$.

A. $\frac{1}{2}$ ✓

B. $\frac{\sqrt{3}}{2}$

C. 0

D. $\frac{1}{\sqrt{2}}$

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Q29 Mathematics

If $x = r \sin A \cos B$, $y = r \sin A \sin B$ and $z = r \cos A$, then find $x^2 + y^2 + z^2$.

A. $2r^2$

B. $3/2\ r^2$

C. $r^2(\cos^2 B + \cos^2 A)$

D. r^2 ✓

Q30 Mathematics

Complete the series.

186, 183, 177, 159, (...)

A. 93

B. 81

C. 87 ✓

D. 96

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Q1 Mathematics

Find the wrong number in the given series.

12, 18, 27, 42, 62, 87

A. 18 ✓

B. 27

C. 87

D. 42

Q2 Mathematics

How many 3 digit numbers are divisible by 3?

A. 97

B. 100

C. 99

D. 98

Dropped by RRB: discrepancy found in question/answer, ignored for all candidates (no answer key).

Q3 Mathematics

Simplify: $\sin (A + B) \sin(A - B)$

A. $\cos^2 A - \cos^2 B$

B. $\cos 2A$

C. $\sin^2 A + \sin^2 B$

D. $\sin^2 A - \sin^2 B$ ✓

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Q4 Mathematics

Volume of material used in constructing a hollow cylinder of height 24 cm and thickness 1 cm is 96π. What is the sum of the internal and external radii?

A. 7 cm

B. 3 cm

C. 4 cm ✓

D. 5 cm

Q5 Mathematics

A number when divided by 234 gives the remainder 36. What will be the remainder when it is divided by 13?

A. 6

B. 9

C. 10 ✓

D. 11

Q6 Mathematics

P and Q invested in a business in the ratio 5 : 13. Q withdrew his capital after 6 months. If they shared their profit in the ratio 25 : 26, for how long was P's amount used?

A. 15 months ✓

B. 12 months

C. 18 months

D. 8 months

Q7 Mathematics

Two numbers are in the ratio 4 : 5. Their LCM is 180. What is their sum?

A. 81 ✓

B. 72

C. 90

D. 70

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Q8 Mathematics

Complete the series.

168, 151, 134, 117, (...)

A. 95

B. 100 ✓

C. 82

D. 97

Q9 Mathematics

If tan α = 1/2, tan β = 1/3, then find α + β.

A. 135°

B. 45° ✓

C. 90°

D. 0°

Q10 Mathematics

Travelling at 3/4 of the normal speed, a person reaches his workplace 15 minutes late. How many minutes does he take usually to reach the workplace?

A. 30 minutes

B. 42 minutes

C. 45 minutes ✓

D. 60 minutes

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Q11 Mathematics

The base of a right pyramid is a square with diagonal 16 units. Its slant edge is 17 units. What is its vertical height?

A. 30

B. 12

C. 15 ✓

D. 25

Q12 Mathematics

P and Q together can complete some work in 30 days. Q and R together can do the same in 24 days. R and P together will take 20 days to complete it. If they all work together, in how many days will the job get done?

A. 15

B. 16 ✓

C. 25

D. 8

Q13 Mathematics

On what principal will the difference between Compound Interest and Simple Interest at 10% rate in 3 years be equal to Rs.620?

A. Rs.24000

B. Rs.25000

C. Rs.20000 ✓

D. Rs.18000

Q14 Mathematics

Simplify: 0.004 × 0.5

A. 0.002 ✓

B. 2

C. 0.02

D. 0.2

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Q15 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

144	49	36	25
529	196	?	42
961	256	121	58

A. 25 ✓

B. 32

C. 30

D. 34

Q16 Mathematics

A's age : B's age is 4 : 3. After 6 years, A will be 26 years. What is B's present age?

A. 15 ✓

B. 9

C. 18

D. 12

Q17 Mathematics

If 1/7 of a number is subtracted from the number, the result is 30 less than the number. Find the number.

A. 210 ✓

B. 140

C. 120

D. 105

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Q18 Mathematics

P, Q, R and S can do a piece of work in 20 days. If P and Q together can do it in 50 days, and R alone in 60 days, then in how many days can S alone do it?

A. 90

B. 75 ✓

C. 65

D. 60

Q19 Mathematics

Find the value of $\sin(180° - \theta) \cos(90° - \theta) - \cos(180° - \theta) \sin(90° - \theta)$.

A. $\cos \theta$

B. 1 ✓

C. $\tan \theta$

D. 0

Q20 Mathematics

$x^3 + 5x^2 - 2x - 24$ has a zero at $x = 2$. Find the other zeros.

A. -3, 5

B. 3, 4

C. -2, -3

D. -3, -4 ✓

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Q21 Mathematics

Complete the series.

0.7, 0.75, 0.85, 1, (...)

A. 1.1

B. 1.6

C. 1.2 ✓

D. 1.8

Q22 Mathematics

P, Q and R can do a work in 15, 20 and 30 days respectively. The contractor decides to put any two of them on the job so as to finish the work earlier. Which of these choices is the best?

A. QR

B. RP

C. PQ ✓

D. Either PQ or QR

Q23 Mathematics

The cash difference between the selling prices of an article at a profit of 4% and 6% is Rs.3. Find the ratio of the two selling prices.

A. 52 : 53 ✓

B. 51 : 52

C. 51 : 53

D. 52 : 55

Top

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Q24 Mathematics

Ages of P, Q and R are in the ratio 4 : 7 : 9. 8 years ago, the age of R was Q's present age. What is the sum of their ages at present?

A. 60

B. 100

C. 50

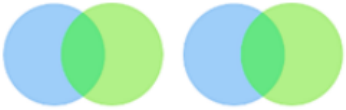
D. 80 ✓

Q25 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Vegetable, Woman, Lion, Parrot

A.  ✓

B. 

C. 

D. 

Q26 Mathematics

If $x - \frac{1}{x} = 3$, then find the value of $x^4 + \frac{1}{x^4}$.

A. 129

B. 14

C. 123

D. 119 ✓

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Q27 Mathematics

By how much is four-sevenths of 420 exceeds three-fifths of 200?

A. 80

B. 120 ✓

C. 90

D. 60

Q28 Mathematics

Find the LCM of $(2^2 \times 3^2 \times 5 \times 7)$, $(2^2 \times 3 \times 5^2 \times 7)$ and $(2 \times 3 \times 5 \times 7)$.

A. 9000

B. 7200

C. 8400

D. 6300 ✓

Q29 Mathematics

Complete the series.

1, 3, 7, 15, 31, (...)

A. 47

B. 39

C. 63 ✓

D. 127

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Q30 Mathematics

Two identical items are sold for Rs.200 each, with 10% gain on one but 10% loss on the other. What is the net percentage loss or gain?

A. 1% gain

B. 2% gain

C. 2% loss

D. 1% loss ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Simplify: $3+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{4}}}$

A. 48/13 ✓

B. 13/49

C. 3/13

D. 1/12

Q2 Mathematics

Simplify: 106 × 106 + 94 × 94

A. 23032

B. 21032

C. 20032

D. 20072 ✓

Q3 Mathematics

If 53 * 13 = 33, 39 * 13 = 26 and 74 * 26 = 50, then what will be 37 * 21?

A. 43

B. 37

C. 24

D. 29 ✓

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Q4 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C.  ✓

D. 

Q5 Mathematics

The sum of three numbers is 100. The ratio of the first number to the second number is 4 : 9 and the ratio of the second to the third number is 3 : 4. Find the second number.

A. 28

B. 30

C. 36 ✓

D. 24

Q6 Mathematics

When 8 times of a number is increased by 4, the result is the smallest 3 digit number. What is the number?

A. 8

B. 12 ✓

C. 15

D. 10

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Q7 Mathematics

The product of two co-prime numbers is 117. Find their HCF.

A. 117

B. 1 ✓

C. 13

D. 7

Q8 Mathematics

Two trains 200 m and 150 m long are running on parallel rails at the rates of 40 km/h and 45 km/h respectively. In how much time will they cross each other if they are running in the same direction?

A. 72 seconds

B. 132 seconds

C. 192 seconds

D. 252 seconds ✓

Q9 Mathematics

The sum of the ages of two cousins is 35. Ten years ago, the ratio of their ages was 2 : 1. What are their present ages?

A. 30, 5

B. 20, 15 ✓

C. 28, 7

D. 10, 25

Q10 Mathematics

A 2 m broad pathway is to be constructed around a rectangular plot on the inside. The area of the plot is 96 m^2. The rate of construction is Rs.50 per m^2. Find the total cost of the construction.

A. Rs.4800

B. Data Inadequate ✓

C. Rs.4000

D. Rs.2400

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Q11 Mathematics

How many triangles are there in the given figure?



A. 30 ✓

B. 26

C. 34

D. 21

Q12 Mathematics

Express $0.\overline{125}$ in rational form of number.

A. 125/999 ✓

B. 100/999

C. 119/993

D. 113/990

Q13 Mathematics

Simplify:

cos 5° + cos 24° + cos 175° + cos 204° + cos 300°

A. -1/2

B. 0

Top

C. 1/2 ✓

D. 1

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Q14 Mathematics

The ratio of the time taken to row a certain distance upstream to the time taken to go downstream is 4 : 1. What is the ratio of the speed along stream to that upstream?

A. 5 : 3

B. 3 : 5

C. 4 : 1 ✓

D. 1 : 4

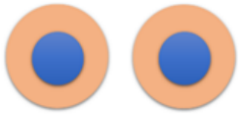
Q15 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Wheat, Grains, Onion, Maize

A.  ✓

B. 

C. 

D. 

Q16 Mathematics

What is the total surface area of a solid cylinder whose radius is half the radius of a circle of area 154 m^2 and height is the same as its radius?

A. 132 m^2

B. 231 m^2 ✓

C. 312 m^2

D. 123 m^2

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Q17 Mathematics

The sum of two numbers is 22. Five times of one number is equal to 6 times the other. Find the larger of the two numbers.

A. 12 ✓

B. 16

C. 15

D. 10

Q18 Mathematics

If (x - 1) and (x + 3) are the factors of $x^2 + ax + b$, then find the values of 'a' and 'b' respectively.

A. 2, 3

B. -2, -3

C. -2, 3

D. 2, -3 ✓

Q19 Mathematics

If the interest is compounded half-yearly, find the Compound Interest on the sum of Rs.18500 at the rate of 40% per annum for 18 months.

A. Rs.16000

B. Rs.16280

C. Rs.13468 ✓

D. Rs.15469

Q20 Mathematics

What is the loss percent incurred when chocolates got at 2 for a rupee are sold at 4 for a rupee?

A. 50% ✓

B. 100%

C. 75%

D. 25%

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Q21 Mathematics

Find the selling price of an article, if a shopkeeper allows two successive discounts of 5% each on the marked price of Rs.80.

A. Rs.72

B. Rs.73

C. Rs.72.20 ✓

D. Rs.70.10

Q22 Mathematics

An article is sold at a certain price. Had it been sold at 60% of this price, there would have been a loss of 35%. What is the percentage profit now?

A. $12\frac{1}{2}\%$

B. $8\frac{1}{3}\%$ ✓

C. $16\frac{2}{3}\%$

D. 15%

Q23 Mathematics

A sum of money at Simple Interest amounts to Rs.815 in 3 years and Rs.854 in 4 years. What is the sum?

A. Rs.698 ✓

B. Rs.690

C. Rs.700

D. Rs.650

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Q24 Mathematics

Find the HCF of two consecutive even integers.

A. 1

B. 2 ✓

C. -1

D. 0

Q25 Mathematics

A 110 m long train crosses a pole in 12 seconds. What is the speed of the train in km/h?

A. 49 km/h

B. 27 km/h

C. 30 km/h

D. 33 km/h ✓

Q26 Mathematics

If 10.98 × 10.98 + 10.98K + 0.02 × 0.02 is a perfect square, then find the value of 'K'.

A. 0.4

B. 0.2

C. 0.04 ✓

D. 0.02

Q27 Mathematics

Complete the series.

2, 3, 6, 15, 42, (...)

A. 94

B. 48

C. 62

D. 123 ✓

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Q28 Mathematics

The Simple Interest after 10 years at some rate will be Rs.600 on a certain sum. If the principal is trebled after 5 years, what will be the total interest at the end of tenth year?

A. Rs.600

B. Rs.1500

C. Rs.900

D. Rs.1200 ✓

Q29 Mathematics

Complete the series.

167, 334, 668, 1336, (...)

A. 2653

B. 2681

C. 2672 ✓

D. 2661

Q30 Mathematics

P, Q and R enter into a partnership investing Rs.35000, Rs.45000 and Rs.55000. Find their respective share in the annual profit of Rs.40500.

A. Rs.10500, Rs.13500, Rs.18500

B. Rs.10500, Rs.13500, Rs.16500 ✓

C. Rs.10500, Rs.13500, Rs.17500

D. Rs.10500, Rs.13500, Rs.19500

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

The length of a rectangular plot is thrice its breadth. If the area of the rectangular plot is 867 m², then what is the length of the rectangular plot?

A. 34 m

B. 51 m ✓

C. 68 m

D. 17 m

Q2 Mathematics

The Simple Interest on a certain sum at the rate of 5% per annum for 3 years is Rs.1260. Find the Compound Interest for that sum at the same rate and for the same period.

A. Rs.1384.05

B. Rs.1448.05

C. Rs.1324.05 ✓

D. Rs.1428.05

Q3 Mathematics

If tan A + tan B = a and cot A + cot B = b, then 1/a - 1/b is equal to ____.

A. tan(A + B)

B. cot(A + B) ✓

C. sin(A + B)

D. cos(A + B)

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Q4 Mathematics

Find the value of cos(A + B), if tan A = 3/4 and tan B = 5/12 and A and B are in quadrant I.

A. 16/65

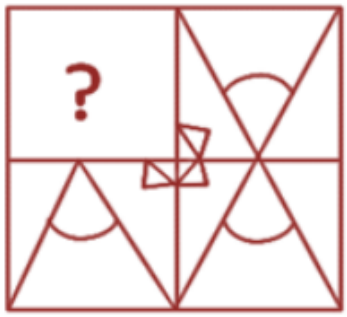
B. 15/48

C. 1

D. 33/65 ✓

Q5 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

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Q6 Mathematics

A train running at a speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?

A. 324 m

B. 180 m

C. 120 m

D. 150 m ✓

Q7 Mathematics

Find the average speed when the first half of a journey is done at a speed of 60 km/h and the second half at a speed of 40 km/h.

A. 48 km/h ✓

B. 45 km/h

C. 50 km/h

D. 52 km/h

Top

Q8 Mathematics

Simplify: 1.2 × 2.5 × 0.5

A. 15

B. 150

C. 0.15

D. 1.5 ✓

Q9 Mathematics

Find the total surface area of a hemispherical bowl of thickness 'd' and internal radius 'r'.

A. $4\pi r^2 + 4\pi rd + 3d^2$

B. $\pi(4r^2 + 6rd + 3d^2)$ ✓

C. $\pi(4r^2 + 3rd + d^2)$

D. $4\pi r^2 + 6\pi rd + 3d^2$

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Q10 Mathematics

Which of the following transactions is the best when considering the corresponding profit percentage?

A. Cost price Rs.40, profit Rs.15

B. Cost price Rs.60, profit Rs.24

C. Cost price Rs.36, profit Rs.18 ✓

D. Cost price Rs.50, profit Rs.24

Q11 Mathematics

A and B invest some amount in the ratio 3 : 5 in a business. After 6 months, C joins them with an investment equal to that of B. In what ratio should the yearly profit be shared among A, B and C?

A. 3 : 5 : 6

B. 3 : 5 : 4

C. 6 : 10 : 5 ✓

D. 6 : 7 : 5

Q12 Mathematics

Complete the series.

458, 435, 415, 398, 384, (...)

A. 327

B. 373 ✓

C. 358

D. 382

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Q13 Mathematics

Edges of a cuboid are in the ratio 1 : 2 : 3. Its surface area is 88 cm². What is its volume?

A. 24 cm^3

B. 64 cm^3

C. 48 cm^3 ✓

D. 120 cm^3

Q14 Mathematics

A sum of Rs.16400 is borrowed to be paid back in 2 years by equal payments allowing 5% Compound Interest. Find the annual payment.

A. Rs.7600

B. Rs.7495

C. Rs.7590

D. Rs.8820 ✓

Q15 Mathematics

Sixteen women working 7 hours a day will complete a job in 48 days. How many women are needed to complete the same job in 32 days working 12 hours a day?

A. 17

B. 14 ✓

C. 10

D. 12

Q16 Mathematics

Total age of x and y is 15 years more than the sum of the ages of y and z. What is the value of (x - z)?

A. 12

B. 10

C. 15 ✓

D. 9

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Q17 Mathematics

If 8 # 2 @ 4 = 12 and 5 # 4 @ 2 = 18, then what will be 4 # 8 @ 3?

A. 32

B. 26

C. 13

D. 29 ✓

Q18 Mathematics

If 14 * 64 = 39, 25 * 37 = 31 and 9 * 17 = 13, then what will be 52 * 46?

A. 51

B. 49 ✓

C. 38

D. 42

Q19 Mathematics

When the number 42 is misread as 24, what is the percentage error?

A. 42.86% ✓

B. 55.34%

C. 28%

D. 18%

Q20 Mathematics

An alarm was set at 11 AM on Monday on a clock that was set correctly at 1 AM on Sunday, but the clock started gaining 20 seconds every 24 hours. What was the actual time when the alarm went off?

A. 10:30:00 AM

B. 11:30:00 AM

C. 10:51:20 AM

D. 10:31:40 AM

Dropped by RRB: discrepancy found in question/answer, ignored for all candidates (no answer key).

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Q21 Mathematics

If time upstream = n × time downstream and speed in still water is 'x' and speed of stream is 'y', then find x : y.

A. n/(n - 1)

B. (n + 1)/(n - 1) ✓

C. n/2

D. (n - 1)/(n + 1)

Q22 Mathematics

If 832.58 - 242.31 = 779.84 - a, find the value of 'a'.

A. 199.57

B. 295.05

C. 189.57 ✓

D. 179.57

Q23 Mathematics

Interest on Rs.800 in 3 years at 4% Simple Interest equals twice the interest on Rs.300 at 8% in 'n' years, then find 'n'.

A. 4

B. 1.5

C. 3

D. 2 ✓

Q24 Mathematics

Find the value of tan 10° tan 15° tan 80° tan 75°.

A. 1/3

B. 1 ✓

C. 2/3

D. 1/2

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Q25 Mathematics

Complete the series.

4, 5, 8, 15, 30, (...)

A. 78

B. 69

C. 61 ✓

D. 72

Q26 Mathematics

Complete the series.

5, 6, 14, 45, 184, (...)

A. 917

B. 925 ✓

C. 902

D. 876

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Q27 Mathematics

How many triangles are there in the given figure?



A. 12 ✓

B. 19

C. 15

D. 10

Q28 Mathematics

'A' sells a suitcase to 'B' at 10% profit. 'B' sells it to 'C' at 30% profit for Rs.2860. What is the cost price for 'A'?

A. Rs.2000 ✓

B. Rs.1600

C. Rs.2200

D. Rs.1000

Q29 Mathematics

Find the HCF of $2 \times 3^2 \times 5^2$, $5 \times 3 \times 2^2$ and $5^2 \times 3 \times 2^2$.

A. 60

B. 150

C. 30 ✓

D. 90

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Q30 Mathematics

Find the missing number in the following series.

1, 6, 15, (...), 45, 66, 91

A. 25

B. 27

C. 26

D. 28 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Simplify: $\frac{\sin 3A}{\sin A} + \frac{\cos 3A}{\cos A}$

A. -2

B. $2 \cos A$

C. $4 \cos 2A$ ✓

D. $2 \sin A$

Q2 Mathematics

If 9 # 3 @ 4 = 31 and 8 # 7 @ 2 = 58, then what will be 5 # 6 @ 7?

A. 37 ✓

B. 52

C. 47

D. 40

Q3 Mathematics

If a (a + b + c) = 45; b (a + b + c) = 75 and c (a + b + c) = 105, then find the value of $a^2 + b^2 + c^2$.

A. 83 ✓

B. 225

C. 90

D. 625

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Q4 Mathematics

Find the least perfect square that is divisible by 21, 36 and 66.

A. 214434

B. 214344

C. 213444 ✓

D. 231444

Q5 Mathematics

Complete the series.

4, 4, 8, 24, 96, (...)

A. 461

B. 493

C. 480 ✓

D. 448

Q6 Mathematics

Find the wrong number in the given series.

6, 12, 21, 36, 56, 81

A. 12 ✓

B. 21

C. 56

D. 36

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Q7 Mathematics

Simplify: (5 + 0.5 + 0.005 + 0.0005 + 0.05) × 2

A. 10.111

B. 11.111 ✓

C. 11.011

D. 11.001

Q8 Mathematics

If 3(2/5) + 1(2/9) = 4(4/5) - a, find the value of 'a'.

Top

A. 16/9 ✓

B. 11/45

C. 6/25

D. 4/45

Q9 Mathematics

A certain sum of money invested at Compound Interest, compounded annually, amounts to Rs.338 at the rate of 4% per annum for 2 years. Find the sum.

A. Rs.312.50 ✓

B. Rs.318.52

C. Rs.320

D. Rs.315

Q10 Mathematics

Pure ghee costing Rs.100 per kilogram and vegetable oil costing Rs.50 per kilogram are mixed in some ratio and sold at Rs.96 per kilogram so as to gain 20%. In what ratio is ghee and oil mixed?

A. 2 : 3

B. 3 : 2 ✓

C. 4 : 3

D. 3 : 4

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Q11 Mathematics

Ten years ago, the ages of father and son were in the ratio 3 : 1. Ten years hence this ratio will be 2 : 1. What is the age of the father now?

A. 55

B. 70 ✓

C. 75

D. 65

Q12 Mathematics

Find the least number that is divisible by 12, 18, 21, and 30.

A. 1060

B. 1260 ✓

C. 1620

D. 1020

Q13 Mathematics

A sum of Rs.25000 amounts to Rs.32000 in 4 years. What is the rate of interest?

A. 7% ✓

B. 8%

C. 6.5%

D. 6%

Q14 Mathematics

P takes 10 days and Q takes 24 days to complete a work. With the help of R, they all work together and finish it in 6 days. Find the payment they receive out of a total remuneration of Rs.1000.

A. P-Rs.600; Q-Rs.250; R-Rs.150 ✓

B. P-Rs.500; Q-Rs.350; R-Rs.150

C. P-Rs.400; Q-Rs.350; R-Rs.250

D. P-Rs.500; Q-Rs.400; R-Rs.100

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Q15 Mathematics

Simplify : $5 + 4 \times 5^2 + 4 \times 5^3 + 4 \times 5^4 + 4 \times 5^5$

A. 5^8

B. 5^2

C. 5^6 ✓

D. 5^4

Q16 Mathematics

A sum of Rs.1100 was taken as a loan. This is to be paid in two equal instalments. If the rate of interest is 20% per annum, compounded annually, find the amount payable in each instalment.

A. Rs.670

B. Rs.720 ✓

C. Rs.620

D. Rs.600

Q17 Mathematics

Find the missing number in the following series.

8 , 6 , 8 , 14 , 30 , (...) , 233

A. 72

B. 77 ✓

C. 60

D. 55

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Q18 Mathematics

What is the length of the greatest rod that can be placed in a hall 12 m long, 4 m broad and 3 m high?

A. 13 m ✓

B. 15 m

C. 18 m

D. 9 m

Top

Q19 Mathematics

Find the HCF of 513, 1134 and 1215.

A. 27 ✓

B. 36

C. 18

D. 33

Q20 Mathematics

Complete the series.

38, 35, 34, 31, 30, (...)

A. 28

B. 27 ✓

C. 25

D. 24

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Q21 Mathematics

Find the ODD one out from the given options.

A. 162, 18

B. 304, 16 ✓

C. 171, 19

D. 117, 13

Q22 Mathematics

Find the value of sin 60°cos 30° + cos 60° sin 30°.

A. 1/4

B. 1/2

C. 3/4

D. 1 ✓

Q23 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

16	36	64
4	6	?
15	13	11
11	7	3

A. 8 ✓

B. 6

C. 3

D. 5

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Q24 Mathematics

P and Q can do a work individually in 15 days and 20 days respectively. Find the respective ratio of their efficiencies.

A. 3 : 4

B. 4 : 5

C. 4 : 3 ✓

D. 5 : 4

Q25 Mathematics

If the frequency of a sound wave is 100 Hz, then what is its time period?

A. 0.01 second ✓

B. 10 seconds

C. 1 second

D. 0.1 second

Q26 Mathematics

The price of a book was first increased by 25% and then reduced by 20%. What is the change in its original price?

A. No change ✓

B. 10% decrease

C. 10% increase

D. 5% decrease

Q27 Mathematics

If the selling price is doubled, then profit triples. What is the profit per cent?

A. 60%

B. 80%

C. 100% ✓

D. 120%

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Q28 Mathematics

Two stations A and B are 110 km apart on a straight line. One train starts from A at 7 a.m. and travels towards B at 20 km/h. Another train starts from B at 8 a.m. and travels towards A at a speed of 25 km/h. At what time will they meet?

A. 10.30 a.m.

B. 11 a.m.

C. 10 a.m. ✓

D. 9 a.m.

Q29 Mathematics

If a/b is a fraction, where a = b - 3 and (a + 10)/b - a/b = 10/7, then find a/b.

A. 2/5

B. 4/7 ✓

C. 5/8

D. 8/11

Q30 Mathematics

The radius of a sphere is 3 times the radius of a cylinder. If their volumes are equal, find the height of the cylinder.

A. 27 times its radius

B. Equal to its radius

C. 3 times its radius

D. 36 times its radius ✓

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Q1 Mathematics

Complete the series.

755, 151, 75.5, 15.1, (...)

A. 8.43

B. 9.67

C. 7.55 ✓

D. 6.12

Q2 Mathematics

If the time period of a sound wave is 0.02 s, then what is its frequency?

A. 100 Hz

B. 500 Hz

C. 25 Hz

D. 50 Hz ✓

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Q3 Mathematics

Ratio of speeds of two vehicles is 7 : 8. If the second vehicle covers 400 km in 5 hours, what is the speed of the first vehicle?

A. 70 km/h ✓

B. 75 km/h

C. 85 km/h

D. 65 km/h

Q4 Mathematics

How many times a half moon is visible in a month?

A. Four times

B. Two times ✓

C. Three times

D. one time

Q5 Mathematics

If a person weighs 66 kg on the Earth, how much is his weight on the moon?

A. 55 kg

B. 77 kg

C. 11 kg ✓

D. 132 kg

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Q6 Mathematics

The length of a rectangle is halved, and its breadth is tripled. What is the percentage change in its area?

A. 75% decrease

B. 25% increase

C. 50% decrease

D. 50% increase ✓

Q7 Mathematics

Find the ODD one out from the given options.

A. 60

B. 25 ✓

C. 15

D. 30

Q8 Mathematics

Complete the series.

8888, 666, 44, (...)

A. 20

B. 2 ✓

C. 22

D. 0

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Q9 Mathematics

Simplify: 1/4 + 3/8 - 1/2 + 3/4 - 1/3

A. -13/24

B. 5/24

C. 17/24

D. 13/24 ✓

Q10 Mathematics

The sum of ages of 5 children born at intervals of four years is 80. What is the age of the eldest child?

A. 16

B. 18

C. 28

D. 24 ✓

Q11 Mathematics

Find the LCM of 2/3 and 6/7.

A. 6/21

B. 6 ✓

C. 2/21

D. 12/21

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Q12 Mathematics

On which dates will Sundays come in February 2020?

A. 5, 12, 19, 26 of February

B. 2, 9, 16, 23 of February ✓

C. 8, 15, 22, 29 of February

D. 3, 10, 17, 24 of February

Q13 Mathematics

An aeroplane is moving at a constant altitude 'h'. At 10:00 AM, it is seen at an elevation of 30°. 1 minute later, it is observed at an elevation of 60°. If the speed of the plane is 960 km/h, then find 'h'.

A. 15 km

B. 20 km

C. 12.46 km

D. 13.86 km ✓

Q14 Mathematics

P works twice as fast as Q. Q alone can complete some work in 12 days. Working together, how long will P and Q take to complete the work?

A. 10 days

B. 6 days

C. 8 days

D. 4 days ✓

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Q15 Mathematics

An article is marked 20% above the cost price and sold at a discount of 20%. What is the net result of this sale?

A. No profit or loss

B. 10% gain

C. 4% loss ✓

D. 10% loss

Q16 Mathematics

Find the LCM of 1.05 and 2.1.

A. 0.6

B. 1.25

C. 2.1 ✓

D. 4

Q17 Mathematics

Rs.12000 invested at 10% Simple Interest and another investment at 20% Simple Interest together give a 14% income on the total investment in one year. Find the total investment.

A. Rs.24000

B. Rs.8000

C. Rs.20000 ✓

D. Rs.18000

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Q18 Mathematics

A train P starts from Meerut at 4 p.m. and reaches Ghaziabad at 5 p.m., while another train Q starts from Ghaziabad at 4 p.m. and reaches Meerut at 5:30 pm. At what time will the two trains cross each other?

A. 4:48 p.m.

B. 4:42 p.m.

C. 4:50 p.m.

D. 4:36 p.m. ✓

Q19 Mathematics

Four vessels of equal size are filled with mixtures of milk and water. The strength of milk in the four vessels is 80%, 75%, 60% and 50% respectively. If all four mixtures are mixed, what is the ratio of water to milk in the resultant mixture?

A. 29 : 51

B. 13 : 27

C. 3 : 5

D. 27 : 53 ✓

Q20 Mathematics

Find the value of cos 120° cos 240° cos 180° cos 60°.

A. 1/2

B. 1/16

C. -1/8 ✓

D. 1/4

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Q21 Mathematics

If $x = 2^8$ and $x^x = 2^y$, then find the value of 'y'.

A. 2^4

B. 2^{11} ✓

C. 1

D. 2^{64}

Q22 Mathematics

Two students appeared for an examination. One of them got 9 marks more than the other. His marks was also equal to 56% of the sum of their marks. What are their marks?

A. 43, 34

B. 42, 33 ✓

C. 45, 54

D. 39, 30

Q23 Mathematics

Find the total surface area of a hollow hemispherical bowl of diameter 14 cm and negligible thickness.

A. 616 $cm^2$2 ✓

B. 628 $cm^2$2

C. 526 $cm^2$2

D. 576 $cm^2$2

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Q24 Mathematics

What is the gain per cent, while selling 33 m of cloth, if there is a gain equal to the selling price of 11 m?

A. 60%

B. 50% ✓

C. 25%

D. 45%

Q25 Mathematics

Complete the series.

148, 150, 156, 168, (...)

A. 174

B. 182

C. 176

D. 188 ✓

Q26 Mathematics

In how many years will Rs.5000 grow to Rs.10000 at 12.5% Simple Interest?

A. 20 years

B. 12 years

C. 9 years

D. 8 years ✓

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Q27 Mathematics

If 4 @ 9 # 3 = 1 and 4 @ 8 # 4 = 2, then 5 @ 6 # 2 = ?

A. 6

B. 9

C. 5

D. 2 ✓

Q28 Mathematics

The Simple Interest on a sum of money for 2 years is Rs.50 and the Compound Interest on the same sum at the same rate for the same time is Rs.51.25. Find the rate of interest per annum.

A. 6%

B. 5% ✓

C. 6.5%

D. 5.5%

Q29 Mathematics

A boat goes upstream at 36 km/h and downstream at 40 km/h. The distance covered in each trip being the same, find the speed of boat in still water.

A. 34 km/h

B. 2 km/h

C. 38 km/h ✓

D. 45 km/h

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Q30 Mathematics

If P and Q together can do a job in 15 days, Q and R together can do it in 12 days and P and R together can do the same in 20 days, then in how many days will the job be completed, if all the three work together?

A. 10 days ✓

B. 6 days

C. 4 days

D. 14 days

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Mathematics

30 Questions • Answer Key

Q1 Mathematics

A train moving with a speed 54 km/h crosses a platform and a man on the platform in 36 seconds and 20 seconds respectively. How long is the platform?

A. 270 m

B. 300 m

C. 240 m ✓

D. 180 m

Q2 Mathematics

In an election, a candidate won by getting 75% of the valid votes. Out of a total number of 560000 votes, 15% were invalid. What is the number of valid votes got by the winning candidate?

A. 275000

B. 357000 ✓

C. 350000

D. 280000

Q3 Mathematics

Instead of dividing a number by 21, a student did the division by 12 and got the answer 35. What is the correct answer?

A. 25

B. 15

C. 20 ✓

D. 26

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Q4 Mathematics

The average age of 4 persons is 42 years. If their ages are in the ratio of 1 : 3 : 4 : 6 respectively, find out the difference between the ages of the eldest and the youngest person.

A. 61 years

B. 70 years

C. 59 years

D. 60 years ✓

Q5 Mathematics

Going downstream a boat covers 50 miles at a speed of 60 mph. While returning it takes 1 hour 15 minutes to cover the same distance. What is the average speed for the whole journey?

A. 48 mph ✓

B. 42 mph

C. 55 mph

D. 62 mph

Q6 Mathematics

Circumference of a circle is 132 cm. What is the perimeter of its sector whose central angle is 135°?

A. 101.5 cm

B. 92.5 cm

C. 93.5 cm

D. 91.5 cm ✓

Q7 Mathematics

Simplify: $\sin 15° \sin 75° + \cos 75° \cos 15°$

A. 1/2 ✓

B. 1/4

C. 3/4

D. -1/2

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Q8 Mathematics

A boatman covers a distance of 24 km against water current and 36 km along the water current and takes 6 hours each time. Find the speed of water current.

- A. 1 km/h ✓
- B. 3 km/h
- C. 4 km/h
- D. 2 km/h

Q9 Mathematics

The ratio of radii of two cylinders is 2 : 3. Their heights are in the ratio 5 : 3. If one cylinder has a volume of 160 cubic units, what is the volume of the other cylinder?

- A. 216 cubic units ✓
- B. 240 cubic units
- C. 243 cubic units
- D. 400 cubic units

Q10 Mathematics

Find the smallest number that is exactly divisible by each of the numbers 12, 15, 20 and 27.

- A. 520
- B. 540 ✓
- C. 510
- D. 530

Q11 Mathematics

If 16 * 24 = 20, 71 * 19 = 45 and 8 * 52 = 30, then what will be 35 * 27?

- A. 51
- B. 42
- C. 49
- D. 31 ✓

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Q12 Mathematics

HCF of a set of 3 coprime numbers is:

A. Sum of the numbers

B. 1 ✓

C. 3

D. Product of the numbers

Q13 Mathematics

The Compound Interest on a certain sum for 2 years at 10% is Rs.2100. What will be the Simple Interest for the same period, on the same sum and at the same rate?

A. Rs.1980

B. Rs.1600

C. Rs.2000 ✓

D. Rs.1800

Q14 Mathematics

Two children differ in their age by 2 years. Six years later, the sum of their ages will be 46. How old are they now?

A. 21, 23

B. 23, 25

C. 24, 26

D. 20, 22

Dropped by RRB: discrepancy found in question/answer, ignored for all candidates (no answer key).

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Q15 Mathematics

Complete the series.

14, 6, 4, 4, 8, (...)

A. 38

B. 34

C. 48 ✓

D. 42

Q16 Mathematics

An article listed at Rs.65 was bought for Rs.56.16 after two successive discounts, of which, the first is 10%. What is the second discount?

A. 6%

B. 2%

C. 9%

D. 4% ✓

Q17 Mathematics

If $2^x = 64$ and $4^y = 256$, then find the value of $(1/x) + (1/y)$.

A. 2/5

B. 7/12

C. 2/3

D. 5/12 ✓

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Q18 Mathematics

A trader decides to sell his goods at a profit of 20%. But due to more demand, he further increases the price by 10%. What is his net profit percent?

A. 30%

B. 25%

C. 32% ✓

D. 28%

Q19 Mathematics

Evaluate: (sin 72° + cos 18°) (sin 72° - cos 18°)

A. 0 ✓

B. 2

C. 1

D. -1

Q20 Mathematics

Complete the series.

3, 5, 13, 49, (...)

A. 253

B. 248

C. 269

D. 241 ✓

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Q21 Mathematics

One-eighth of a number is what percent of it?

A. 2.5%

B. 12.5% ✓

C. 1.25%

D. 25%

Q22 Mathematics

Find the least number which when divided by 5, 6, 7, 8, leaves a remainder 3, and is also a multiple of 9.

A. 1983

B. 843

C. 1683 ✓

D. 1677

Q23 Mathematics

Suresh took 15 seconds to cross a rectangular field diagonally walking at the rate of 52 m/min, and Rajesh took the same time to cross the same field along its sides walking at the rate of 68 m/min. Find the area of the field.

A. 60 m^2 ✓

B. 30 m^2

C. 40 m^2

D. 50 m^2

Q24 Mathematics

A man invested 1/3 of his capital at 7%, 1/4 at 8% and the rest at 10% thereby getting an annual income of Rs.561. What was his capital?

A. Rs.6600 ✓

B. Rs.4400

C. Rs.5500

D. Rs.5800

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Q25 Mathematics

If 36 men can do some work in 25 days, then in how many days will 15 men do it?

A. 60 days ✓

B. 54 days

C. 50 days

D. 56 days

Q26 Mathematics

If 54.k3 + 543 + 5.43 = 603.26, find the value of 'k'.

A. 9

B. 6

C. 8 ✓

D. 5

Q27 Mathematics

Complete the series.

4, 5, 8, 17, 44, (...)

Top

A. 105

B. 125 ✓

C. 112

D. 118

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Q28 Mathematics

If a right triangle is right angled at A and AC = 6, BC = 10, find the value of tan B × tan C.

A. 1 ✓

B. 3/5

C. 1/2

D. 4/5

Q29 Mathematics

If $x^3 + y^3 = 9$ and $x + y = 3$, then find the value of $x^2 + y^2$.

A. 3

B. 5 ✓

C. 25

D. 6

Q30 Mathematics

P and Q can do a work in 8 days. Q and R can do the same work in 12 days. P, Q and R together can complete it in 6 days. P and R together can do it in how many days?

A. 4 days

B. 6 days

C. 5 days

D. 8 days ✓

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Q1 Mathematics

Evaluate: $\left[\frac{\sqrt{3}+1}{\sqrt{3}-1}\right]^2+\left[\frac{\sqrt{3}-1}{\sqrt{3}+1}\right]^2$

A. 14 ✓

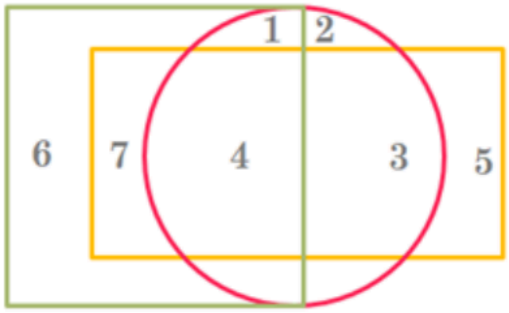
B. 16

C. 12

D. 24

Q2 Mathematics

In the given figure, the circle represents educated, rectangle represents unemployed, and square represents villagers. Which region represents villagers and educated but not an unemployed?



A. 1 ✓

B. 3

C. 4

D. 2

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Q3 Mathematics

If (1 + tan A) (1 + tan B) = 2, then find A + B.

A. 0°

B. 180°

C. 90°

D. 45° ✓

Q4 Mathematics

Find the missing number in the following series.

13, 32, 24, 43, 35, (...), 46, 65

A. 54 ✓

B. 56

C. 60

D. 52

Q5 Mathematics

A person travels from P to Q at a speed of 50 km/h for 30 minutes. He then increases his speed to 60 km/h and reaches his destination R in 20 minutes. What is his average speed for the whole journey?

A. 54 km/h ✓

B. 70 km/h

C. 55 km/h

D. 65 km/h

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Q6 Mathematics

Two numbers differ by 1365. On dividing the larger number by the smaller, the quotient and remainder got are 6 and 15 respectively. Find the larger number.

A. 1784

B. 1095

C. 1635 ✓

D. 270

Q7 Mathematics

Find the wrong number in the following series.

6, 12, 21, 36, 56, 81

A. 12 ✓

B. 36

C. 56

D. 21

Q8 Mathematics

While executing a job, what 20 women can do in 16 days will be done by 16 men in 15 days. Find the ratio of capacity of a man to that of a woman.

A. 3 : 4

B. 6 : 7

C. 5 : 6

D. 4 : 3 ✓

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Q9 Mathematics

Find the value of 6 ÷ 2 × (1 + 2).

A. 1

B. 6

C. 9 ✓

D. 3

Q10 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

6	5	4
11	9	7
?	56	33

A. 85 ✓

B. 65

C. 75

D. 95

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Q11 Mathematics

Simplify: $\left(\sqrt{6}-2\sqrt{3}\right)^2$

A. $18-2\sqrt{12}$

B. $18+2\sqrt{12}$

C. $18+12\sqrt{2}$

D. $18-12\sqrt{2}$ ✓

Q12 Mathematics

Complete the series.

7, 35, 33, 63, 60, 92, (...)

A. 88 ✓

B. 81

C. 74

D. 69

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Q13 Mathematics

P invests Rs.3500 in a business. After 5 months, Q joins him with some investment. If the profit that Q gets is 50% more than that of P, then find the investment of Q.

A. Rs.7000

B. Rs.6500

C. Rs.5000

D. Rs.9000 ✓

Q14 Mathematics

A metallic sphere of radius 6 cm is melted and drawn into a wire, whose radius of cross section is 8 cm. What is the length of the wire?

A. 3.5 cm

B. 4 cm

C. 4.5 cm ✓

D. 5 cm

Q15 Mathematics

A cone is 32 cm high and the radius of its base is 8 cm. It is melted and recast into a sphere. Find the radius of the sphere.

A. 2.5 cm

B. 6.5 cm

C. 4 cm

D. 8 cm ✓

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Q16 Mathematics

If A, B and C are three points on a circle, where BC is the diameter and $AC = AB = 5\sqrt{2}$ cm. Find the radius of the circle.

A. 4 cm

B. 5 cm ✓

C. $\frac{5}{\sqrt{2}}$ cm

D. 6 cm

Q17 Mathematics

Complete the series.

11, 77, 38.5, 231, (...)

A. 125

B. 121.5

C. 120

D. 115.5 ✓

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Q18 Mathematics

If $x+\frac{1}{x}=2$, then find the value of $x^2+\frac{1}{x^2}$.

A. 0

B. 2 ✓

C. -2

D. 1

Q19 Mathematics

If the selling price of an article is Rs.240, the profit is 20%, then for how much should it be sold, if the profit is to be 30%?

A. Rs.260 ✓

B. Rs.200

C. Rs.300

D. Rs.280

Q20 Mathematics

At what rate per cent will a sum of money double itself in 30 years?

A. $3\frac{1}{4}\%$

B. 3%

C. $3\frac{1}{3}\%$ ✓

D. $3\frac{1}{2}\%$

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Q21 Mathematics

A hare spots a dog 100 m away and starts running away from it at 12 km/h. One minute later, the dog gives a chase at 16 km/h speed. At what distance from the spot where the hare took to flight will the dog catch the hare?

- A. 1100 m ✓
- B. 950 m
- C. 1000 m
- D. 900 m

Q22 Mathematics

A trader makes a profit by selling goods at a profit of 20%. He also uses weights that are 20% less. What is his actual gain per cent?

- A. 60%
- B. 25%
- C. 40%
- D. 50% ✓

Q23 Mathematics

Simplify: cos(30° - A) - cos(30° + A)

- A. (1/2)sinA
- B. sin A ✓
- C. 2sinA
- D. cos A

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Q24 Mathematics

P, Q and R work together to finish a work. P and Q finish 70% of the work while Q and R finish 50% of the work. Who will finish first, if they work alone?

A. Cannot be determined

B. R

C. P ✓

D. Q

Q25 Mathematics

A son's present age is two-fifths of his mother's age. After 8 years, he will be one half his mother's age. What is his mother's age now?

A. 42

B. 50

C. 36

D. 40 ✓

Q26 Mathematics

Simplify: 0.8 + 0.08 + 0.008 + 8

A. 880.8

B. 8.808

C. 8.088

D. 8.888 ✓

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Q27 Mathematics

What is the difference between Compound Interest and Simple Interest on Rs.1000 at 10% after 4 years?

A. Rs.64.10 ✓

B. Rs.52

C. Rs.74

D. Rs.16.40

Q28 Mathematics

Find the smallest three-digit number that is exactly divisible by 12, 15 and 24.

A. 240

B. 180

C. 120 ✓

D. 360

Q29 Mathematics

There are six members in a family. This year the father died and he has a son Ramesh, and a son is born to Ramesh. The average age of the family is the same now as it was 10 years back. At what age has the father of Ramesh died?

A. 72 years

B. 50 years

C. 60 years ✓

D. 64 years

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Q30 Mathematics

Two numbers have their LCM and HCF to be 693 and 11 respectively. If one number is 99, find the other number.

A. 34

B. 79

C. 12

D. 77 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

A man is standing on a platform which is 70 m long. A train crosses the platform in 5.5 seconds, but it crosses the man in 2 seconds. What is the length of the train?

A. 60 m

B. 40 m ✓

C. 80 m

D. 45 m

Q2 Mathematics

Find $\tan 75°$, by splitting $75°$ as $(45° + 30°)$.

A. $2\sqrt{3}-1$

B. $2\sqrt{3}+1$

C. $2+\sqrt{3}$ ✓

D. $\frac{\sqrt{3}-1}{\sqrt{3}+1}$

Q3 Mathematics

What is the relation between the frequency v and the time period T of a sound wave?

A. $v = T$

B. $v = 1 / \sqrt{T}$

Top

C. $v = 1 / T^2$

D. $v = 1 / T$ ✓

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Q4 Mathematics

If $\sin\theta + \sin^2\theta = 1$, then find $\cos^2\theta + \cos^4\theta$.

A. 2

B. -2

C. 1 ✓

D. -1

Q5 Mathematics

Simplify: $\frac{0.1\times0.1+0.2\times0.2}{0.3\times0.3+0.6\times0.6}$

A. 2/9

B. 1/3

C. 1/9 ✓

D. 2/3

Q6 Mathematics

Find the ODD fraction.

18/72, 24/96, 51/204, 108/432, 18/90

A. 18/90 ✓

B. 108/432

C. 24/96

D. 51/204

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Q7 Mathematics

P, Q and R are the volumes of a cone, hemisphere and a cylinder with equal radius and height. What is the value of P : Q : R?

A. 3 : 4 : 2

B. 2 : 1 : 3

C. 1 : 3 : 2

D. 1 : 2 : 3 ✓

Q8 Mathematics

Simplify: 4 + 44 + 444 + 4444 + 44444

A. 49380 ✓

B. 49280

C. 49384

D. 48384

Q9 Mathematics

Simplify: $25 + 15 - 5 \times \frac{1}{2}$ of $10 - [50 \div 10 - 5]$

A. 20

B. 25

C. 15 ✓

D. 10

Q10 Mathematics

If the first number and the second number is 25% and 50% more than the third number respectively, find the respective ratio between the first and the second number.

A. 6 : 5

B. 1 : 2

C. 2 : 1

D. 5 : 6 ✓

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Q11 Mathematics

The sum of the ages of a father and son is 45. Six years ago, their ages were in the ratio 10 : 1. How old will the son be after six years?

A. 20

B. 15 ✓

C. 19

D. 16

Q12 Mathematics

A sum of money at 8% Simple Interest was placed in a deposit for 7 years. The matured amount was then invested in a scheme offering 10% Compound Interest compounded annually, thereby procuring an interest of Rs.1638 in 2 years. What was the original sum?

A. Rs.7500

B. Rs.6200

C. Rs.5000 ✓

D. Rs.8000

Q13 Mathematics

Find the difference between the selling prices of two articles sold at 12.5% profit and 12.5% loss, if the cost price is Rs.400 each.

A. Rs.80

B. Rs.120

C. Rs.140

D. Rs.100 ✓

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Q14 Mathematics

Convert into vulgar fraction: $0.24\overline{37}$

A. 2413/9999

B. 2413/9900 ✓

C. 2437/9990

D. 2437/9999

Q15 Mathematics

Simplify: cos θ(1 - tan θ) + sin θ (1 - cot θ)

A. sin θ + cos θ

B. tan θ + cot θ

C. sin θ - cos θ

D. 0 ✓

Q16 Mathematics

Which of these numbers is a multiple of 24?

A. 53784 ✓

B. 31256

C. 63810

D. 35718

Q17 Mathematics

P and Q can do a work in 12 days and 16 days respectively. P started the work alone. After how many days should Q join P, so that the work is finished in 9 days?

A. 5 ✓

B. 2

C. 3

D. 4

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Q18 Mathematics

If selling price of 'n' pens is the same as cost price of 10 pens and there is 100% gain, then find the value of 'n'.

A. 8

B. 6

C. 10

D. 5 ✓

Q19 Mathematics

Three numbers in the ratio 3 : 4 : 5 have the LCM 2400. What is the HCF?

A. 40 ✓

B. 80

C. 120

D. 200

Q20 Mathematics

Complete the series.

5, 30, 25, 125, 120, 480, (...)

A. 483

B. 475 ✓

C. 498

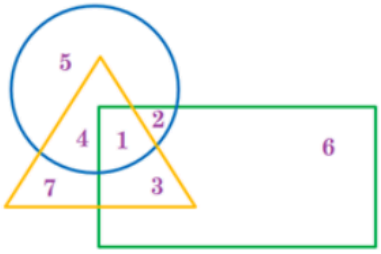
D. 528

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Q21 Mathematics

In the given figure, the circle represents editors, triangle represents directors, and rectangle represents singers. Which region represents the persons who are editors and singers but not directors?



Top

A. 1

B. 4

C. 2 ✓

D. 3

Q22 Mathematics

Complete the series.

536, 268, 134, 67, (...)

A. 34.6

B. 35.2

C. 33.5 ✓

D. 31.4

Q23 Mathematics

Arun went to a nearby city at a speed of 25 km/h and returned at 20 km/h. If the total time for the trip was 1 hour 48 minutes, what is the distance of his place from the city?

A. 20 km ✓

B. 22 km

C. 18 km

D. 40 km

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Q24 Mathematics

6 men and 2 boys can do five times as much work as one man and one boy. Find the ratio of the working capacity of a man to that of a boy.

- A. 3 : 1 ✓
- B. 4 : 1
- C. 1 : 3
- D. 3 : 2

Q25 Mathematics

P and Q can complete a job in 12 days and 16 days respectively. They work together for 4 days. What portion of work is left for completion?

- A. 7/12
- B. 6/7
- C. 3/4
- D. 5/12 ✓

Q26 Mathematics

Find the roots of $2x^2 - 15x + 28$.

- A. One positive, other negative
- B. Both negative
- C. Both positive ✓
- D. Not real

Q27 Mathematics

How much material is wasted when a solid cone of height 24 cm and radius 8 cm is recast into a solid cylinder of radius 6 cm and height 6 cm?

- A. 57.8% ✓
- B. 37.5%
- C. 52%
- D. 64%

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Q28 Mathematics

Simplify: $\sqrt{64009} - \sqrt{53824}$

A. 23

B. $\sqrt{21}$

C. 21 ✓

D. 17

Q29 Mathematics

Complete the series.

55, 59, 65, 73, 83, 95, 109, (...)

A. 129

B. 125 ✓

C. 138

D. 136

Q30 Mathematics

The loss incurred in a sale of an article is equal to 60% of the selling price of the article. What is the actual loss per cent?

A. 28%

B. 37.5% ✓

C. 25%

D. 40%

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Q1 Mathematics

Find the remainder when $(12^{13} + 12)$ is divided by 13.

A. 1

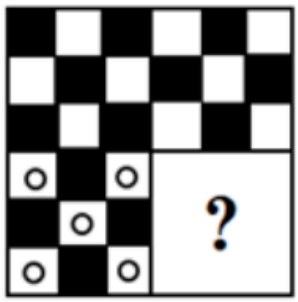
B. 12

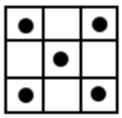
C. 2

D. 11 ✓

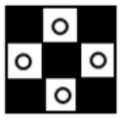
Q2 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

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Q3 Mathematics

The profit on the sale of a product is 25%.What will be the loss per cent, if the values of cost price and selling price are interchanged?

A. Loss of 12%

B. Loss of 25%

C. Loss of 20% ✓

D. Loss of 16%

Q4 Mathematics

Evaluate: $\cfrac{1}{2+\cfrac{1}{3+\cfrac{1}{4+\frac{1}{5}}}}$

A. 68/157 ✓

B. 21/110

C. 5/46

D. 157/68

Q5 Mathematics

A number when divided by a divisor, leaves a remainder of 24. When twice that number is divided by the same divisor, the remainder is 15. What is the divisor?

A. 33 ✓

B. 35

C. 9

D. 23

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Q6 Mathematics

A clock started at noon. By 10 minutes past 7, the hour-hand will move through _____.

A. 215° ✓

B. 200°

C. 210°

D. 60°

Q7 Mathematics

Two pipes P, Q can fill a cistern in 12 and 15 minutes separately. P is open for 4 minutes and turned off. In how much time will the remaining part be filled by Q?

A. 12 minutes

B. 11 minutes

C. 10 minutes ✓

D. 9 minutes

Q8 Mathematics

In what ratio should water be mixed with some milk to gain $16\frac{2}{3}\%$ on selling it at cost price?

A. 6 : 1

B. 3 : 4

C. 2 : 3

D. 1 : 6 ✓

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Q9 Mathematics

If $3x - y = 5$, find the value of $8^x/2^y$.

A. 16

B. 32 ✓

C. 256

D. 64

Q10 Mathematics

Find the median value for the number of goals in 10 matches 1, 3, 2, 5, 8, 6, 4, 7, 1 and 9.

A. 8

B. 4.5 ✓

C. 4

D. 7

Q11 Mathematics

If object is placed at 25 cm in front of a concave mirror of focal length 15 cm, then find out the image distance v.

A. 32.5 cm

B. 38 cm

C. -37.5 cm ✓

D. -32.5 cm

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Q12 Mathematics

Find the median of the discrete values.

(a + 4), (a - 3.5), (a - 2.5), (a - 3), (a - 2), (a + 0.5), (a + 5) and (a - 0.5).

A. a - 2.5

B. a - 0.75

C. a - 1.25 ✓

D. a - 1.5

Q13 Mathematics

If the frequency of a sound wave is 50 Hz, then what is its time period?

A. 0.02 s ✓

B. 0.2 s

C. 0.5 s

D. 0.05 s

Q14 Mathematics

Ages of a mother and daughter are in the ratio 9 : 2. The daughter was born when the mother was 28 years. How old is the daughter?

A. 6 years

B. 4 years

C. 8 years ✓

D. 12 years

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Q15 Mathematics

Ages of a mother and daughter are in the ratio 12 : 5. Ten years hence, she will be twice as old as her daughter. What is the sum of their ages at present?

A. 85 ✓

B. 60

C. 65

D. 75

Q16 Mathematics

On a sum of money, the Simple Interest for 2 years is Rs.660 while the Compound Interest for two years is Rs.696.30, the rate of interest being the same. Find the rate of interest.

A. 10%

B. 11% ✓

C. 12.75%

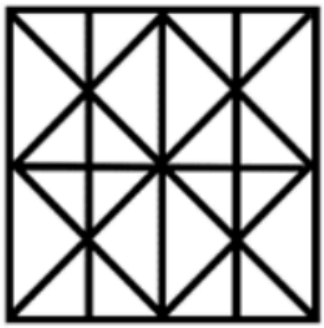
D. 13%

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Q17 Mathematics

How many straight lines are there in the given figure?



A. 19

B. 16

C. 14 ✓

D. 23

Q18 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 1

B. 3 ✓

C. 4

D. 2

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Q19 Mathematics

In a 300 m race, P beats Q by 22.5 m or 6 seconds. What is Q's time over the course?

A. 76 seconds

B. 78 seconds

C. 80 seconds ✓

D. 86 seconds

Q20 Mathematics

Find the ODD one out from the given options.

A. 4 : 17

B. 2 : 5

C. 1 : 2

D. 3 : 12 ✓

Q21 Mathematics

Complete the series.

540, 270, 90, 45, 15, (...)

A. 7.9

B. 6.5

C. 7.5 ✓

D. 6.8

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Q22 Mathematics

If 'x' means '+', '+' means 'x' and '-' means '÷', then find the value of (1 x 2) + (3 x 4) - (4 x 5) + 9.

A. 9

B. 12

C. 21 ✓

D. 3

Q23 Mathematics

Find the ODD one out from the given options.

A. 1321 ✓

B. 729

C. 125

D. 27

Q24 Mathematics

If 'O' is the circumcentre of a triangle ABC and OD is perpendicular to BC, then find $\angle BOD$.

A. $(1/2)\angle A$

B. $90° - \angle A$

C. $\angle A$ ✓

D. $2\angle A$

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Q25 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C. 

D.  ✓

Q26 Mathematics

If x% of 10.8 = 32.4, then find 'x'.

A. 300 ✓

B. 200

C. 100

D. 400

Q27 Mathematics

What is the value of $\cos 55° + \sin 55°$?

A. $\sqrt{2}\cos 10°$ ✓

B. $2\sin 35°$

C. $2\sin 10°$

D. $2\cos 35°$

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Q28 Mathematics

Find the greatest among these fractions.

5/11, 3/15, 12/11, 4/7, 9/12

A. 4/7

B. 3/15

C. 9/12

D. 12/11 ✓

Q29 Mathematics

If 'MISTAKE' is coded as 9765412 and 'RANKED' is coded as 348120, how is 'DISTANT' coded?

A. 0756485

B. 0765845

C. 0765458

D. 0765485 ✓

Q30 Mathematics

Two inlet pipes P and Q can fill a tank in 10 hours and 12 hours separately. There is an outlet R that can let out water from the tank fully in 30 hours. If all the pipes are opened simultaneously, how much time will it take to fill the tank completely?

A. 5 hours 30 minutes

B. 6 hours 30 minutes

C. 6 hours 40 minutes ✓

D. 14 hours 45 minutes

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Mathematics 21 Questions • Answer Key

Q1 Mathematics

Into a cylindrical tub containing water to a depth of 20 cm, tiny spherical balls are dropped and the level of water rises by 6.75 cm. If the cylinder has a radius 12 cm and the number of balls dropped is 27, then find the radius of the ball.

A. 2.5 cm

B. 3.5 cm

C. 1.5 cm

D. 3 cm ✓

Q2 Mathematics

For what values of 'k' does the equation kx(x - 2) + 6 = 0 have equal roots?

A. 0, 6

B. 6 ✓

C. 3, 2

D. -2

Q3 Mathematics

If 4 boys and 6 girls can do a work in 8 days, and 3 boys and 7 girls can finish the same in 10 days, find the ratio of capacities of a boy and a girl.

A. 1 : 11

B. 5 : 12

C. 11 : 1 ✓

D. 12 : 5

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Q4 Mathematics

A boat covers a certain distance downstream in 4 hours, but takes 6 hours to return to the starting point. What is the ratio of speed of stream to the speed of the boat in still water?

A. 4 : 3

B. 5 : 1

C. 1 : 4

D. 1 : 5 ✓

Q5 Mathematics

If the diagonals of a rhombus are in the ratio 5 : 4, then what is the ratio of the area of the rhombus to the product of the diagonals?

A. 4 : 1

B. 2 : 1

C. 1 : 2 ✓

D. 1 : 4

Q6 Mathematics

By selling goods at Rs.540, a trader incurred 10% loss. If he wants to minimise the loss to 5%, what should be his selling price?

A. Rs.570 ✓

B. Rs.1080

C. Rs.550

D. Rs.600

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Q7 Mathematics

Find the value of $\sin 480° - \sin 60° + \sin 780° + \cos 120°$.

A. $\frac{\sqrt{3}+1}{2}$

B. 1

C. 0

D. $\frac{\sqrt{3}-1}{2}$ ✓

Q8 Mathematics

Thrice my age three years back subtracted from thrice my age three years hence gives my age. How old am I now?

A. 24 years

B. 15 years

C. 18 years ✓

D. 21 years

Q9 Mathematics

Complete the series.

86, 67, 49, 33, 20, (...)

A. 13

B. 11 ✓

C. 9

D. 7

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Q10 Mathematics

Find the HCF of 36/75, 48/50 and 72/30.

A. 144/45

B. 144/150

C. 12/150 ✓

D. 12/75

Q11 Mathematics

Complete the series.

19, 16, 21, 14, (...)

A. 25

B. 23 ✓

C. 27

D. 21

Q12 Mathematics

Simplify:

$-10 \div [20 \div (2^2 \times 5) - 5] \times 8 - 2$

A. -16

B. 10

C. 8

D. 18 ✓

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Q13 Mathematics

From a container of 50 litres pure milk, 10 litres is taken out and replaced by 10 litres of water. If this process is repeated thrice, what is the ratio of water to milk finally?

A. 61 : 64 ✓

B. 7 : 16

C. 1 : 4

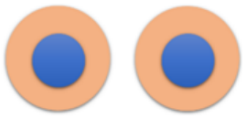
D. 9 : 16

Q14 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Pencil, Car, Stationery, Vehicle

A. 

B. 

C.  ✓

D. 

Q15 Mathematics

Average age of P and Q is 24 years. Average age of P, Q and R is 22 years. Find the sum of their ages in last year.

A. Data not sufficient ✓

B. 95

C. 87

D. 90

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Q16 Mathematics

24 men working 8 hours a day can finish a work in 10 days. Working 10 hours a day, how many men are required to finish the work in 6 days?

A. 36

B. 32 ✓

C. 30

D. 34

Q17 Mathematics

A fruit seller purchased 100 oranges for Rs.80. If 20 of them are rotten, then at what price should he sell the rest of the oranges to have 25% profit per orange?

A. Rs.1.50

B. Rs.1.20

C. Rs.1.25 ✓

D. Rs.1

Q18 Mathematics

Pick out the set that forms the factors of 36.

A. (2, 3, 4, 6)

B. (2, 3, 4, 6, 9, 12)

C. (2, 3, 4, 6, 9)

D. (2, 3, 4, 6, 9, 12, 18) ✓

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Q19 Mathematics

Find the least number to be added to 231228 to make it exactly divisible by 33.

A. 3 ✓

B. 1

C. 4

D. 2

Q20 Mathematics

Find the average of 3/4, 5/8, 7/12, 15/16.

A. 21/64

B. 135/64

C. 139/192 ✓

D. 11/32

Q21 Mathematics

An investment of Rs.16000 at 8% Simple Interest for 1 year and a second investment at 18% Simple Interest for the same period together fetch a return of 10% on the total investment. Find the total sum invested.

A. Rs.22000

B. Rs.18000

C. Rs.20500

D. Rs.20000 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

The variance of 5 values is 16. If each value is doubled, find the standard deviation of the new value.

A. 8 ✓

B. 16

C. 10

D. 4

Q2 Mathematics

If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then find the cost of production of a table, if the retail price was Rs.1265.

A. Rs.850

B. Rs.800 ✓

C. Rs.750

D. Rs.900

Q3 Mathematics

There are three cans of milk containing 36 litres, 45 litres and 72 litres. Find the biggest measure that can measure all these exactly.

A. 9 litres ✓

B. 8 litres

C. 7 litres

D. 15 litres

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Q4 Mathematics

Profit percentage earned by selling an article for Rs.1920 is equal to the loss percentage when the article is sold for Rs.1280. At what price should it be sold, if the profit is to be 30%?

A. Rs.2080 ✓

B. Rs.2040

C. Rs.2060

D. Rs.2000

Q5 Mathematics

The radius of a circle increases by 5%. What is the percentage increase in its area?

A. 10.5%

B. 21.5%

C. 25%

D. 10.25% ✓

Q6 Mathematics

Ten observations written in descending order are 45, 34, 32, 30, 2x - 13, x + 1, 17, 15, 14 and 8. If the median is 24, then find 'x'.

A. 15

B. 18

C. 20 ✓

D. 12

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Q7 Mathematics

Sum of ages of father and son is 8 years more than the age of mother. Son was born when the mother was 22 years. How old is the father?

A. 40 years

B. 38 years

C. 30 years ✓

D. 36 years

Q8 Mathematics

Find the area of the card board that is required to make a box of size 10 cm × 8 cm × 4 cm.

A. 304 cm^2 ✓

B. 388 cm^2

C. 488 cm^2

D. 412 cm^2

Q9 Mathematics

Find the wrong number in the given series.

14, 20, 29, 39, 56, 74

A. 14

B. 29

C. 20

D. 39 ✓

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Q10 Mathematics

In how many years will a certain sum of money double itself at 5% Simple Interest?

A. 22

B. 18

C. 15

D. 20 ✓

Q11 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A.  ✓

B. 

C. 

D. 

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Q12 Mathematics

What is the area of the sector covered by the hour-hand of a clock while moving from the number 12 to number 3, if the length of the hour-hand is 7 cm?

A. $70\ cm^2$

B. $17\ cm^2$

C. $38.5\ cm^2$ ✓

D. $35\ cm^2$

Q13 Mathematics

Seven years ago, the ratio of the ages of Ajith and Ganesh was 5 : 7. If the product of their present ages is 616, find the ratio of their present age.

A. 17 : 15

B. 12 : 13

C. 15 : 17

D. 11 : 14 ✓

Q14 Mathematics

An atom has a mass number of 23 and atomic number 11. The number of protons is-

A. 12

B. 23

C. 22

D. 11 ✓

Q15 Mathematics

If 54321A is divisible by 9, then find the value of 'A'.

A. 0

B. 2

C. 3 ✓

D. 4

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Q16 Mathematics

Six bells toll in intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. If all start tolling together, how many times will they toll together in 30 minutes?

A. 4

B. 16 ✓

C. 15

D. 8

Q17 Mathematics

If (10.24 × 10.24) - (10.24 × A) + (0.24 × 0.24) is a perfect square, then find the value of 'A'.

A. 0.36

B. 0.24

C. 0.48 ✓

D. 0.12

Q18 Mathematics

Ages of father and son add up to 50. Six years back father's age was 6 more than thrice his son's age. What will be father's age 6 years hence?

A. 50 years

B. 42 years ✓

C. 40 years

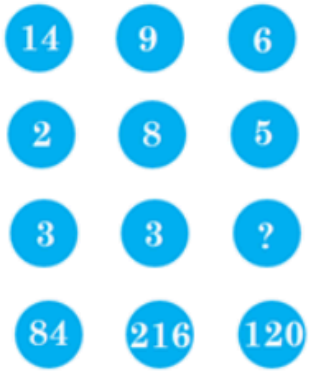
D. 48 years

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Q19 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 7

B. 6

C. 8

D. 4 ✓

Q20 Mathematics

Simplify: 6 ÷ [2(1 + 2)]

A. 3

B. 2

C. 1 ✓

D. 9

Q21 Mathematics

Two cones are such that the ratio of their volumes is 1 : 10 and ratio of their heights is 2 : 5. What is the ratio of their base radii?

A. 7 : 25

B. 5 : 2

C. 2 : 1

D. 1 : 2 ✓

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Q22 Mathematics

What is the normal pulse rate of humans?

A. 2 beats per second

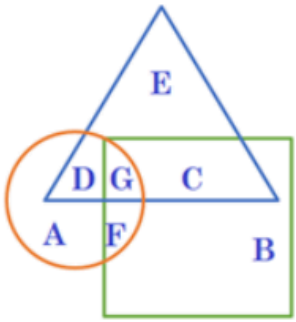
B. 80-90 beats per minute

C. 70-80 beats per minute ✓

D. 97 beats per minute

Q23 Mathematics

In the given figure, the circle represents graduate, triangle represents working people, and square represents post graduate. Which region represents graduate and post graduate but not working people?



A. G

B. F ✓

C. C

D. D

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Q24 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

Q25 Mathematics

P and Q can individually do some work in 60 and 75 days respectively. They started working together. But P left after sometime. Q completed the work in another 30 days. In how many days after starting the work did P leave?

A. 24

B. 20 ✓

C. 25

D. 32

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Q26 Mathematics

A pipe can fill a cistern in 20 minutes, but an outlet can empty it in 28 minutes. When both the pipes are opened, in what time is the cistern filled?

A. 56 minutes

B. 96 minutes

C. 70 minutes ✓

D. 72 minutes

Q27 Mathematics

Rs.16500 is split into two fixed deposits for 2 years at 10% and 12% Simple Interest. If the total interest received from the deposits is Rs.3620, how much was invested in the 12% scheme?

A. Rs.10000

B. Rs.10500

C. Rs.8500

D. Rs.8000 ✓

Q28 Mathematics

Simplify: $\left(1+\frac{1}{10+\frac{1}{10}}\right)+\left(1-\frac{1}{10+\frac{1}{10}}\right)$

A. 91/101

B. 101/10

C. 3/10

D. 2 ✓

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Q29 Mathematics

A motorcyclist covers a distance of 192 km at a speed of 32 km/h. A car starts from the same place as the motorcyclist 2.5 hours later, but covers the same distance 0.5 hour earlier. What is the ratio of the speed of the car and the motorcycle?

A. 3 : 1

B. 2 : 1 ✓

C. 1 : 2

D. 4 : 3

Q30 Mathematics

Two pipes P and Q can fill a tank in 40 minutes and 30 minutes respectively. Both pipes are opened simultaneously and after 10 minutes pipe Q is closed. In what time after this will the tank get filled up?

A. 15 minutes

B. 16 minutes 40 seconds ✓

C. 16 minutes

D. 15 minutes 20 seconds

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Mathematics

30 Questions • Answer Key

Q1 Mathematics

A and B enter into a partnership with Rs.50000 and Rs. 60000 respectively. C joins them after 'x' months, contributing Rs.70000 and B leaves 'x' months before the end of the year. If they share the profit in the ratio of 20 : 18 : 21, then find the value of 'x'.

A. 5

B. 3 ✓

C. 6

D. 4

Q2 Mathematics

A cube and a sphere have equal height. Find the ratio of their volumes.

A. 6 : π ✓

B. 2 : π

C. 3 : π

D. 4 : π

Q3 Mathematics

If a and b are the roots of the equation $3x^2 - 5x + 2 = 0$, then find the value of (a/b)+(b/a).

A. 13/6 ✓

B. 13/9

C. 13/2

D. 9/13

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Q4 Mathematics

Two types of rice costing Rs.38 per kg and Rs.42 per kg are mixed in equal quantities and sold at Rs.45 per kg. Find the gain per cent.

A. 18%

B. 12.5% ✓

C. 10%

D. 15%

Q5 Mathematics

Capacities of two workers P and Q are in the ratio 3 : 2. What amount of the daily wages of Rs.400 should be given to P?

A. Rs.250

B. Rs.260

C. Rs.240 ✓

D. Rs.160

Q6 Mathematics

Complete the series.

8, 9, 12, 19, 34, (...)

A. 69

B. 65 ✓

C. 61

D. 58

Q7 Mathematics

Find the total surface area of a cone of slant height '2l' and radius 'r/2'.

A. $2\pi r (l + r)$

B. $2\pi rl$

C. $\pi r (l + r)$

D. $\pi r [l + (r/4)]$ ✓

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Q8 Mathematics

The numerical values of the volume and curved surface area of a cone are equal. If 'h' and 'r' represent the height and base radius of the cone, then what is the value of $(1/h^2) + (1/r^2)$?

A. 1/9 ✓

B. 1/3

C. 2/9

D. 9

Q9 Mathematics

If $1.5x = 0.04y$, find the value of $(y - x)/(y + x)$.

A. 730/77

B. 73/77 ✓

C. 73/770

D. 0.73/77

Q10 Mathematics

If $36^3 \times (4096)^{1/2} \times 144 \times 9 \div (9^3 \times 72^2) = 4^x$, find the value of 'x'.

A. 5 ✓

B. 7

C. 12

D. 8

Q11 Mathematics

Find the ODD one out from the given options.

A. 15

B. 45

C. 75

D. 25 ✓

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Q12 Mathematics

If 5/8 = x%, what is the value of 'x'?

A. 67.5

B. 65.7

C. 62.5 ✓

D. 40

Q13 Mathematics

P_1, P_2, P_3 are invested at 4%, 6%, 8% respectively such that the Simple Interests from all the three at the end of the year are equal. If the sum of three investments is Rs.2600, then find the values of P_1, P_2 and P_3 respectively.

A. Rs.1000, Rs.900, Rs.700

B. Rs.1200, Rs.800, Rs.600 ✓

C. Rs.1200, Rs.600, Rs.800

D. Rs.1100, Rs.800, Rs.700

Q14 Mathematics

Find the ratio of LCM to HCF of the numbers 99 and 15.

A. 165 : 1 ✓

B. 165 : 3

C. 3 : 55

D. 1 : 165

Q15 Mathematics

If $x^{1/3} + y^{1/3} - z^{1/3} = 0$, then find the value of $(x + y - z)^3 + 27xyz$.

A. 0 ✓

B. $-z^3$

C. 1

D. $x^3 + y^3 - z^3$

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Q16 Mathematics

How many straight lines are there in the given figure?



A. 13

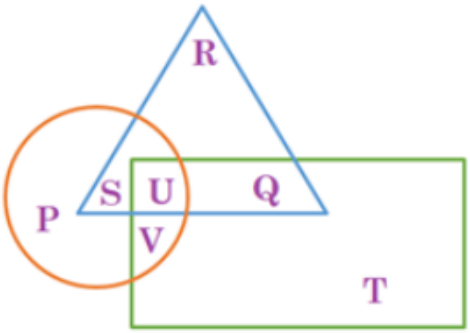
B. 10

C. 15

D. 9 ✓

Q17 Mathematics

In the given figure, the circle represents vehicle, triangle represents four wheeler, and rectangle represents car. Which region represents car and four wheeler but not vehicle?



A. V

B. Q ✓

C. S

D. U

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Q18 Mathematics

Three times the square of a number decreased by 4 times the number is equal to 50 more than the number. Find the number.

A. 10

B. 6

C. 4

D. 5 ✓

Q19 Mathematics

What will be the amount of Simple Interest on Rs.5000 at the rate of 5% per annum after 6 years?

A. Rs.800

B. Rs.1400

C. Rs.1500 ✓

D. Rs.1200

Q20 Mathematics

A boat travels a distance of 12 km. The first 4 km along the stream is covered in 15 minutes. The next 8 km is upstream. The downstream speed is twice the upstream speed. What is the average speed for the journey?

A. 10.4 km/h

B. 9.6 km/h ✓

C. 10 km/h

D. 11.6 km/h

Q21 Mathematics

Four years ago, the ratio of the ages of A and B was 2 : 1. Four years hence, this ratio will become 3 : 2. What is the ratio of their present ages?

A. 5 : 2

B. 5 : 3 ✓

C. 2 : 5

D. 5 : 4

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Q22 Mathematics

Find the maximum number of children among whom 429 pencils and 715 pens can be equally distributed.

A. 143 ✓

B. 160

C. 120

D. 100

Q23 Mathematics

A man takes twice as long to go upstream as to row downstream. What is the ratio of speed of boat in still water and the speed of stream?

A. 4 : 1

B. 2 : 1

C. 3 : 2

D. 3 : 1 ✓

Q24 Mathematics

The incubation period of Typhoid bacillus causing typhoid fever is-

A. 8 to 14 days ✓

B. 3 to 5 days

C. 90 to 92 days

D. 0 to 2 days

Q25 Mathematics

Find the sum of first 12 even natural numbers.

A. 156 ✓

B. 112

C. 108

D. 126

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Q26 Mathematics

If 72 km/h = x m/s, then find the value of 'x'.

A. 25

B. 20 ✓

C. 15

D. 18

Q27 Mathematics

Find the ODD one out from the given options.

A. 

B.  ✓

C. 

D. 

Q28 Mathematics

What is the percentage form of the ratio 1 : 8?

A. 8%

B. 6.25%

C. 80%

D. 12.5% ✓

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Q29 Mathematics

If 6 men and 8 boys can complete a work in 10 days and 26 men and 48 boys can do it in 2 days, then find the ratio of capacity of a man to that of a boy.

A. 4 : 3

B. 6 : 5

C. 3 : 2

D. 2 : 1 ✓

Q30 Mathematics

By selling a transistor for Rs.572, a shopkeeper earns a profit equivalent to 30% of the cost price of the transistor. What is the cost price of the transistor?

A. Rs.340

B. Rs.440 ✓

C. Rs.420

D. Rs.400

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Q1 Mathematics

If $\sqrt{15} = 3.87$, then find the value of $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$.

A. 7.87 ✓

B. 6.87

C. 4.87

D. 5.87

Q2 Mathematics

In a showroom, 1/9 of the shirts were striped, 5/8 of the remaining had checks and the rest were plain colored. If there were 81 plain colored shirts, what portion of the stock were checked ones?

A. 7/9

B. 5/9 ✓

C. 243

D. 124

Q3 Mathematics

If the diagonal of a cube is $\sqrt{12}$ cm, then find its volume.

A. $16\ cm^3$

B. $8\ cm^3$ ✓

C. $10\ cm^3$

D. $24\ cm^3$

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Q4 Mathematics

A machine bought for Rs.28000 is sold at a loss of 30%. What is the selling price?

A. Rs.21600

B. Rs.19600 ✓

C. Rs.20600

D. Rs.21000

Q5 Mathematics

A vessel contains some amount of pure milk. 8 litres of water is added to dilute the milk, after taking out 8 litres of pure milk. Once again 8 litres of the resulting mixture is removed and 8 litres of water is added. The amount of pure milk in the second mixture is 49 litres. What amount of pure milk was in the container originally?

A. 64 litres ✓

B. 80 litres

C. 72 litres

D. 100 litres

Q6 Mathematics

If $x=\left(\sqrt{2}+1\right)^{-1/3}$, then find the value of $x^3-\frac{1}{x^3}$.

A. $\sqrt{2}$

B. -2 ✓

C. 0

D. 2

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Q7 Mathematics

A person paid a bill of Rs.25 that included 30 paise as sales tax at the rate of 6% on taxable items. What was the cost of the tax free items?

A. Rs.20

B. Rs.19.70 ✓

C. Rs.15

D. Rs.18

Q8 Mathematics

Total surface area of a hemisphere is 504 cm². What is its curved surface area?

A. 336 cm² ✓

B. 256 cm²

C. 316 cm²

D. 428 cm²

Q9 Mathematics

If 0.009/x = 0.01, find the value of 'x'.

A. 0.9 ✓

B. 9

C. 0.0009

D. 0.09

Q10 Mathematics

The difference between the length and breadth of a rectangle is 23 m. If its perimeter is 206 m, then find its area.

A. 1520 m²

B. 2520 m² ✓

C. 2480 m²

D. 2420 m²

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Q11 Mathematics

Find the greatest possible measure that will measure 7 litres, 3 litres 850 ml, 12 litres 950 ml exactly.

A. 500 ml

B. 215 ml

C. 400 ml

D. 350 ml ✓

Q12 Mathematics

Find the wrong number in the given series.

7, 8, 12, 21, 37, 61, 98

A. 7

B. 61 ✓

C. 37

D. 12

Q13 Mathematics

Meena is 15 years elder to Reena. 15 years back she was thrice as old as Reena. What is Reena's present age?

A. 22.5 years ✓

B. 27.5 years

C. 27 years

D. 15 years

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Q14 Mathematics

Complete the series.

0.5, 0.55, 0.65, 0.8, (...)

A. 0.85

B. 1 ✓

C. 0.9

D. 0.95

Q15 Mathematics

The average age of a family of five members is 26. If the youngest member of the family is now ten years, what was the average of the family one year before the youngest member was born?

A. 16 years

B. 18 years

C. 19 years ✓

D. 20 years

Q16 Mathematics

P starts from X towards Y, 5 km apart at 9 AM at a speed of 5 km/h. Q starts from X at 9.45 AM at a speed of 10 km/h. After reaching Y, P starts back towards X. Likewise, Q reaches Y and returns. When do they meet?

Top

A. 10:20 AM

B. 10:15 AM

C. 10:12 AM

D. 10:10 AM ✓

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Q17 Mathematics

P does some work in 4 hours. The same is done by P and Q together in 3 hours, Q and R together in 2 hours. Working together, how many hours will they take to do the same work?

A. 3/2 hours

B. 6/7 hours

C. 4/3 hours ✓

D. 5/7 hours

Q18 Mathematics

What is the marked price of an article if there is a profit of Rs.7500 while selling at 10% discount with profit of 20%?

A. Rs.40000

B. Rs.45000

C. Rs.36000

D. Rs.50000 ✓

Q19 Mathematics

If $\sin 2A = 2 \sin^2 A$, then find the value of 'A' ($A \neq 0$ and A is acute).

A. 90°

B. 30°

C. 45° ✓

D. 60°

Q20 Mathematics

If A : B = 2 : 3 and B : C = 3 : 4, then find A : B : C.

A. 6 : 9 : 10

B. 2 : 4 : 9

C. 6 : 3 : 10

D. 2 : 3 : 4 ✓

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Q21 Mathematics

For what value of 'a' will the polynomials $(ax^3 + 4x^2 + 3x - 4)$ and $(x^3 - 4x + a)$ leave the same remainder when divided by $(x - 3)$?

A. 1

B. 2

C. -1 ✓

D. 0

Q22 Mathematics

A train 120 m long passes a pole in 12 seconds. What is its speed?

A. 35 km/h

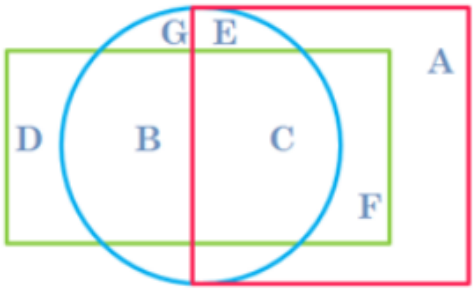
B. 42.5 km/h

C. 36 km/h ✓

D. 48 km/h

Q23 Mathematics

In the given figure, the circle represents soldiers, rectangle represents professors, and square represents painters. Which region represents the persons who are professors and painters but not soldiers?



A. E

B. F ✓

C. B

D. C

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Q24 Mathematics

Suresh invested a sum of money at Compound Interest. It amounted to Rs.2420 in 2 years and Rs.2662 in 3 years. Find the rate per cent per annum.

- A. 10% ✓
- B. 12%
- C. 5%
- D. 14%

Q25 Mathematics

If the HCF of a set of numbers is 8, which one cannot be their LCM?

- A. 360
- B. 200
- C. 56
- D. 150 ✓

Q26 Mathematics

Venkatesh sold a piece of land for Rs.1200000. He gave one-third of the selling price to his wife, and 2/5 of the rest he invested in his son's business, and 1/6 of the rest he gave as donation for the cultural activity of a school. What amount did he give as donation?

- A. Rs.320000
- B. Rs.400000
- C. Rs.80000 ✓
- D. Rs.120000

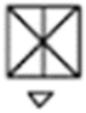
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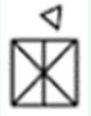
Q27 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C. 

D.  ✓

Q28 Mathematics

Complete the series.

2, 5, 10, 17, 26, (...)

A. 34

B. 35

C. 33

D. 37 ✓

Q29 Mathematics

Of three numbers A , B and C, B = 2A = 3C. Their average is 44. What is the smallest of these numbers?

A. 28

B. 24 ✓

C. 36

D. 72

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Q30 Mathematics

Working together for two days P and Q get paid by Rs.1200 and Rs.400 respectively for the completion of a job. How many days will Q take to finish the job of he worked alone?

A. 6

B. 4

C. 8 ✓

D. 10

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

A goods train runs at a speed of 72 km/hr and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?

A. 260 m

B. 240 m

C. 230 m

D. 270 m ✓

Q2 Mathematics

The length of a rectangular plot is 20 m more than its breadth. If the cost of fencing the plot at Rs.26.50 per metre is Rs.5300, what is the length of the plot in metres?

A. 60 m ✓

B. 120 m

C. 50 m

D. 40 m

Q3 Mathematics

A contractor undertakes to repair loads with 120 men in 124 days. After 64 days, as 2/3 of the work has been over already. He withdraws some men as surplus. If the work is completed in time, how many men were removed?

A. 72

B. 40

C. 64

D. 56 ✓

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Q4 Mathematics

A sector of a circle of radius 21 cm and central angle 120° is folded into a cone. Radius of the cone thus obtained is:

A. 7.5 cm

B. 7 cm ✓

C. 21 cm

D. 42 cm

Q5 Mathematics

In two similar triangles, ratio of their corresponding sides is 1 : 3 and the area of the larger triangle is 72 cm². then find the area of the smaller triangle.

A. 18 cm²

B. 8 cm² ✓

C. 9 cm²

D. 14 cm²

Q6 Mathematics

The ratio of Simple Interest earned by equal amounts in two different schemes at the same rate for 6 years and 10 years respectively is:

A. 4 : 5

B. 3 : 4

C. 4 : 3

D. 3 : 5 ✓

Q7 Mathematics

Simplify: $8\frac{1}{3} \div \frac{5}{3} - \frac{1}{10}$ of $2\frac{1}{2} + \frac{17}{4}$

A. 7/2

B. 1

C. 5/4

D. 9 ✓

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Q8 Mathematics

To test for divisibility of a number by 24, we should test the divisibility of the number by ____.

A. 3

B. Both 8 and 3 ✓

C. 4 and 12

D. 8

Q9 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Oil, Wick, Lamp

A. 

B. 

C.  ✓

D. 

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Q10 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

Q11 Mathematics

How much negative charge does an electron possess?

A. 1.6×10^{-23} C

B. 1.4×10^{-21} C

C. 1.8×10^{-19} C

D. 1.6×10^{-19} C ✓

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Q12 Mathematics

Each side of a square is increased by 20%. What is the percentage change in area?

A. 44% ✓

B. 400%

C. 48%

D. 20%

Q13 Mathematics

Find the least number that should be added to 2497 so that the sum is divisible by 5, 6, 4 and 3.

A. 37

B. 33

C. 13

D. 23 ✓

Q14 Mathematics

A man sold 18 cots for Rs.16800, gaining thereby the cost price of 3 cots. Find the cost price of a cot.

A. Rs.750

B. Rs.650

C. Rs.800 ✓

D. Rs.700

Q15 Mathematics

A pipe P is 3 times faster than another pipe Q and takes 32 minutes less than pipe Q to fill a cistern. In what time will the cistern be full if both pipes are opened together?

A. 8 minutes

B. 10 minutes

C. 6 minutes

D. 12 minutes ✓

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Q16 Mathematics

Two numbers are in the ratio 4 : 5 and their LCM is 100. What is their difference?

A. 20

B. 10

C. 25

D. 5 ✓

Q17 Mathematics

Simplify: 16.5 - 16.5 + 2.2 + 3 × 5

A. 24 ✓

B. 12.25

C. 22.5

D. 33

Q18 Mathematics

Find the ODD one out from the given options.

A.  ✓

B. 

C. 

D. 

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Q19 Mathematics

By selling an article, Madan earned a profit equal to one-fourth of the price he bought it. If he sold it for Rs.375, what was the cost price?

A. Rs.281.75

B. Rs.350

C. Rs.300 ✓

D. Rs.312.50

Q20 Mathematics

Find the wrong number in the following series.

3, 6, 12, 27, 48, 96

A. 12

B. 48

C. 6

D. 27 ✓

Q21 Mathematics

If $\sqrt{7} = 2.6457$ and $\sqrt{3} = 1.732$, then find the value of $\frac{1}{\sqrt{7} - \sqrt{3}}$.

A. 1.0844

B. 1.0944 ✓

C. 1.009

D. 1.944

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Q22 Mathematics

P and Q run around a circular track of 240 m at 15 m/min and 20 m/min speeds respectively. If they start running simultaneously, after what time will they meet again at the starting point?

A. 36 minutes

B. 25 minutes

C. 30 minutes

D. 48 minutes ✓

Q23 Mathematics

Pipes P and Q can fill a tank in 20 and 16 hours respectively. Pipe Q alone was opened for 1/4 of time and later P also was opened. In how many hours was the tank filled?

A. 12 hours

B. 18 hours

C. 10 hours ✓

D. 16 hours

Q24 Mathematics

Find the missing number in the following series.

2, 4, 3, (...), 5, 10

A. 4

B. 7

C. 9

D. 6 ✓

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Q25 Mathematics

If (x - y)/5 = (y - z)/3 = (z - x)/2, then which of these is TRUE?

A. $x = y = z$ ✓

B. $x^2 + y^2 + z^2 = 2xyz$

C. $xyz = 30$

D. $x + y + z = 0$

Q26 Mathematics

On a certain sum, the Compound Interest and Simple Interest at some rate per cent are Rs.696.30 and Rs.660 respectively in 2 years. Find the sum.

A. Rs.3300

B. Rs.3000 ✓

C. Rs.4000

D. Rs.3600

Q27 Mathematics

Express 5.025 as a fraction:

A. $5\frac{1}{8}$

B. $5\frac{1}{4}$

C. $5\frac{1}{40}$ ✓

D. $\frac{203}{40}$

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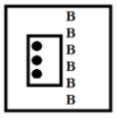
Q28 Mathematics

Find the ODD one out from the given options.

A. 

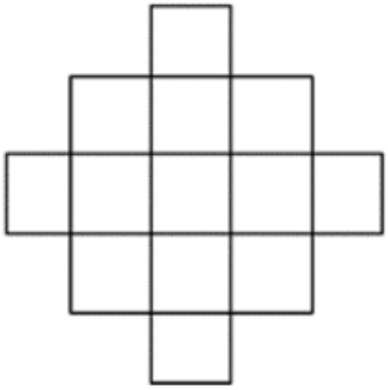
B. 

C. 

D. 

Q29 Mathematics

How many squares are there in the given figure?



A. 18

B. 10

C. 16

D. 15

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Q30 Mathematics

If 296 = x% of 3700, then what is the value of 'x'?

A. 13

B. 10

C. 11

D. 8 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

The salaries of Anand and Nirmal are in the ratio of 9 : 4. When Anand's salary is increased by 15%, it becomes Rs.5175. What is the salary of Nirmal?

A. Rs.4500

B. Rs.2000 ✓

C. Rs.4000

D. Rs.5000

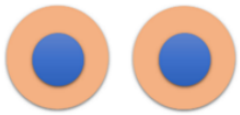
Q2 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Crocodile, Fish, Turtle, Reptile

A. 

B. 

C.  ✓

D. 

Q3 Mathematics

The total surface area of a solid in the shape of a hemisphere mounted on a cylinder both with equal radius and height of cylinder being twice its radius is equal to:

A. $(2\pi rh + 2\pi r^2)$

B. $4\pi r^2$

C. $8\pi r^2$

D. $7\pi r^2$ ✓

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Q4 Mathematics

P, Q and R can individually do a work in 10, 12 and 15 days respectively. They start working together and P leaves after 2 days. Q left 3 days before completion of work. In how many days was the work completed?

A. 5

B. 6

C. 7 ✓

D. 8

Q5 Mathematics

Two pipes can fill a tank in 20 hours and 60 hours respectively. A third pipe is an outlet pipe. If all three are opened together, the tank gets filled up in 40 hours. What time will the outlet pipe take to empty the full tank?

A. 20 hours

B. 28 hours

C. 24 hours ✓

D. 30 hours

Q6 Mathematics

Pipes P and Q can fill a tank in 6 and 4 hours respectively. Pipe P is opened at 7 PM, and P and Q are opened on alternate hours. In what time was the tank filled?

A. 3 hours

B. 6 hours

C. 5 hours ✓

D. 4 hours 30 minutes

Q7 Mathematics

If $2^{9y} = 64$, then find the value of $(125)^{y}$.

A. 25 ✓

B. 1/25

C. 1/5

D. 5

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Q8 Mathematics

If the area of a rectangular plot increases by 30%, and its breadth remains the same, what will be the ratio of the areas of new and old figures?

A. 3 : 1

B. 1 : 3

C. 13 : 10 ✓

D. 4 : 7

Q9 Mathematics

If the Simple Interest on a certain sum for 15 months at 7.5% per annum exceeds the Simple Interest on the same sum for 8 months at 12.5% per annum by Rs.32.50, then find the sum.

A. Rs.3000

B. Rs.2900

C. Rs.3060

D. Rs.3120 ✓

Q10 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C. 

D.  ✓

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Q11 Mathematics

A wooden box measures 20 cm x 12 cm x 10 cm. Thickness of wood is 1 cm. What is the volume of wood used to make the box?

A. 2400 cm^3

B. 960 cm^3 ✓

C. 1120 cm^3

D. 519 cm^3

Q12 Mathematics

How many triangles are there in the given figure?



A. 27 ✓

B. 20

C. 18

D. 23

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Q13 Mathematics

Complete the series.

23, 24, 52, 183, (...)

A. 258

B. 764

C. 482

D. 988 ✓

Q14 Mathematics

Find the integer which is 12 more than its one-fifth part.

A. 15 ✓

B. 30

C. 24

D. 10

Q15 Mathematics

The LCM and HCF of two numbers are 441 and 7. If the numbers differ by 14, find their values.

A. 84, 70

B. 63, 49 ✓

C. 62, 48

D. 64, 50

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Q16 Mathematics

Find the missing number in the following series.

3, 10, 24, (...), 108

A. 52 ✓

B. 63

C. 54

D. 48

Q17 Mathematics

A boat takes 2 hours to go 16 km downstream; while covering the same distance upstream, it takes 4 hours. What is the speed of the current?

A. 12 km/h

B. 4 km/h

C. 6 km/h

D. 2 km/h ✓

Q18 Mathematics

Simplify: $6\frac{2}{3} \times 9\frac{3}{5} \times \frac{7}{12} \div 2\frac{1}{3}$

Top

A. 48

B. 8

C. 64

D. 16 ✓

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Q19 Mathematics

If 10% of 20 + 20% of 30 + 30% of 40 + 40% of 50 = x% of 800, find the value of 'x'.

A. 4

B. 8

C. 6

D. 5 ✓

Q20 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

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Q21 Mathematics

Profit in a transaction is 80%. If the cost increases by 20%, then what is the change in profit percentage, if the selling price is the same?

A. Profit is 60% of the cost price

B. Profit decreases by 18%

C. Profit decreases by 30% ✓

D. Profit remains the same

Q22 Mathematics

I have a brother 3 years elder to me. My sister was six years when my brother was born. The average of our ages is 14. How old is my sister now?

Top

A. 20 years

B. 17 years

C. 18 years

D. 19 years ✓

Q23 Mathematics

Speed in still water is x km/h and that of the stream is y km/h. A man rows a certain distance up and down the stream. What is the average speed for the journey?

A. $\frac{x^2 - y^2}{2xy}$ km/h

B. $\frac{x^2 + y^2}{xy}$ km/h

C. $\frac{x^2 - y^2}{x}$ km/h ✓

D. $\frac{x^2 + y^2}{x}$ km/h

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Q24 Mathematics

If a loan grew 3 times in 6 years at Simple Interest, then how much time will it take to grow 8 times?

A. 22 years

B. 20 years

C. 15 years

D. 21 years ✓

Q25 Mathematics

If the ratio of selling price to the cost price of an article is 15 : 8, then what is the profit percentage?

A. 87.5% ✓

B. 62.5%

C. 37.5%

D. 52.5%

Q26 Mathematics

If $\sin 2A = 2\cos^2 A$, then find the value of 'A' ($A \neq 0$ and A is acute).

A. 60°

B. 90°

C. 30°

D. 45° ✓

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Q27 Mathematics

Complete the series.

8, 20, 36, 56, (...)

A. 64

B. 72

C. 92

D. 80 ✓

Q28 Mathematics

If $5x/(1 + 1/(1 + x/(1 - x))) = 1$, then find the value of 'x'.

A. 1

B. 2/3

C. 1/3 ✓

D. 5/3

Q29 Mathematics

The age of Raju after 15 years will be 5 times his age 5 years back. How old is Raju now?

A. 14

B. 8

C. 10 ✓

D. 15

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Q30 Mathematics

When a pair of dice is thrown, find the probability that the sum of numbers appearing odd.

A. 0.5 ✓

B. 0.25

C. 1

D. 0.4

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

LCM and HCF of two numbers are 2400 and 16 respectively. If one number is 480, find the other number.

A. 40

B. 90

C. 80 ✓

D. 60

Q2 Mathematics

If 5 @ 29 = 32, 41 @ 78 = 117 and 16 @ 32 = 46, then what will be 22 @ 46?

A. 48

B. 31

C. 66 ✓

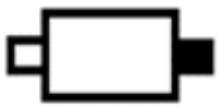
D. 52

Q3 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C.  ✓

D. 

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Q4 Mathematics

An object is sold at a profit of 50% and tax levied is 4%. What is the net profit?

A. 40%

B. 56%

C. 36%

D. 44% ✓

Q5 Mathematics

Complete the series.

8, 13, 13, 23, 18, 33, (...)

A. 31

B. 35

C. 23 ✓

D. 21

Q6 Mathematics

A square sheet of paper is folded into a cylinder by rolling along its side. What is the ratio of side of the square to the base radius of the cylinder?

A. $1 : 2\pi$

B. $1 : \pi$

C. $1 : 4\pi$

D. $2\pi : 1$ ✓

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Q7 Mathematics

P can do some work in 9 days. If Q is 50% more efficient than P, then how long will Q take to do the work?

A. 3 days

B. 4.5 days

C. 13.5 days

D. 6 days ✓

Q8 Mathematics

From a cube of side 6 cm, a hemisphere of maximum volume is scooped out. What is the remaining volume?

A. [27 - (2π/3) x 6]

B. 216 - 12π

C. 216 - 18π ✓

D. 36 - (3π/3)

Q9 Mathematics

Ranjith got two times as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly?

A. 25

B. 11

C. 16 ✓

D. 19

Q10 Mathematics

Arjun, Bharath and Chandru played a cricket match. The ratio of runs scored by Arjun and Bharath is 1 : 2 and the ratio of runs scored by Bharath and Chandru is 3 : 4. If together they score 204 runs, how many runs has Chandru made more than Arjun?

A. 70 runs

B. 66 runs

C. 60 runs ✓

D. 62 runs

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Q11 Mathematics

Hari bought a cardboard for Rs.18000 and spent Rs.5000 on transport and Rs.2000 on labour. He made 500 boxes and sold them at Rs.60 per box. What was his profit percentage?

A. 22%

B. 25%

C. 20% ✓

D. 15%

Q12 Mathematics

A rectangular carpet has an area of 120 m² and a perimeter of 46 m. Find the length of its diagonal.

A. 15 m

B. 17 m ✓

C. 16 m

D. 20 m

Q13 Mathematics

Srinivas can do a job in 15 days and Ramesh can do the same job in 9 days. With the help of Ravi, they did the job in 3 days. In how many days can Ravi alone do the same job?

A. $6\frac{3}{7}$ days ✓

B. $6\frac{2}{5}$ days

C. $6\frac{1}{5}$ days

D. 10 days

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Q14 Mathematics

The Simple Interest and Compound Interest on a certain sum of money for two years are Rs.8400 and Rs.8652 respectively. Find the rate of interest.

A. 5.5%

B. 4.5%

C. 6% ✓

D. 5%

Q15 Mathematics

If 687 + 509 = 560897, then 619 + 703 = ?

A. 193670

B. 760931

C. 760139 ✓

D. 760391

Q16 Mathematics

A sum increases by 100% in 8 years at a certain rate of Simple Interest. What will be the Compound Interest on Rs.8000 after 2 years at the same rate of interest?

A. Rs.2075

B. Rs.2125 ✓

C. Rs.2025

D. Rs.2050

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Q17 Mathematics

Simplify: $\sqrt{6+\sqrt{6+\sqrt{6+\sqrt{6+.....}}}}$

A. 3 ✓

B. 2

C. 6

D. 1/6

Top

Q18 Mathematics

Find the decimal equivalent of 1/25.

A. 0.2

B. 0.4

C. 0.004

D. 0.04 ✓

Q19 Mathematics

Find the number of factors of 12 excluding 1 and 12.

A. 1

B. 3

C. 2

D. 4 ✓

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Q20 Mathematics

Complete the series.

8, 30, 74, 162, (...)

A. 316

B. 338 ✓

C. 301

D. 349

Q21 Mathematics

Father is aged 3 times more than his son. After 8 years, he would be 2.5 times his son's age. Further after 8 years, what would be the ratio of his age to that of his son?

A. 11 : 4

B. 3 : 1

C. 5 : 2

D. 2 : 1 ✓

Q22 Mathematics

Two men walk along the same direction at 4.5 km/hr and 5.75 km/hr respectively. If they start walking together at their respective speeds, how many kilometres apart are they at the end of 3.5 hours?

A. 4.5 km

B. 30.725 km

C. 5.75 km

D. 4.375 km ✓

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Q23 Mathematics

Simplify: $23 \times 2(45 - 15) + 168 \div 4 \div 2 - (11)^2$

A. 1080

B. 1410

C. 1280 ✓

D. 685

Q24 Mathematics

P invests half as much as Q and Q puts in half as much as R in a business. If the monthly profit of Rs.7000 is shared between them, then what is the share of R?

A. Rs.2000

B. Rs.1000

C. Rs.3000

D. Rs.4000 ✓

Q25 Mathematics

Find the missing number in the following series.

4, 7, 11, 18, 29, 47, (...), 123, 199

A. 102

B. 84

C. 70

D. 76 ✓

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Q26 Mathematics

The ages of A, B and C are in the ratio 2 : 3 : 4. The sum of their ages is 108. What will be the ratio of their ages twelve years hence?

A. 2 : 5 : 6

B. 1 : 2 : 3

C. 3 : 4 : 5 ✓

D. 1 : 3 : 5

Q27 Mathematics

A, B and C can run around a circular path once in 252 seconds, 308 seconds and 198 seconds respectively. If they start running from a point simultaneously, after what time will they meet again at the starting point?

A. 46 minutes 12 seconds ✓

B. 26 minutes 30 seconds

C. 42 minutes 50 seconds

D. 45 minutes

Q28 Mathematics

If sin A = cos B, where A and B are acute, then find (A + B).

A. 50°

B. 60°

C. 90° ✓

D. 45°

Q29 Mathematics

If sin A = 1/2 and A and B are complementary angles, then find the value of sin(A - B).

A. 1/2

B. -1

C. 0

D. -1/2 ✓

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Q30 Mathematics

The population of a village increased from 18000 to 22500. What is the increase percentage?

A. 20%

B. 15%

C. 25% ✓

D. 30%

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

P, Q and R can do a project in 8, 6 and 12 days respectively. The project is started with P and Q working on day 1, Q and R on day 2, R and P on day 3 and so on. In how many days will the project be completed?

A. 29/7 days

B. 22/7 days

C. 34/7 days

D. 27/7 days ✓

Q2 Mathematics

Simplify: $\sqrt{\frac{(2.3)^2+(23.3)^2+(233.3)^2}{(0.23)^2+(2.33)^2+(23.33)^2}}$

A. 1/100

B. 0.1

C. 100

D. 10 ✓

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Q3 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

4	6	8
3	5	5
7	11	?

Top

A. 37

B. 15

C. 12

D. 39 ✓

Q4 Mathematics

A solid cube of side 12 cm is cut into eight smaller cubes of equal volume. The side of the small cube will be:

A. 4 cm

B. 3 cm

C. 1.5 cm

D. 6 cm ✓

Q5 Mathematics

The group number and period number respectively of an element with atomic number 8 are-

A. 16, 2 ✓

B. 6, 2

C. 4, 2

D. 16, 3

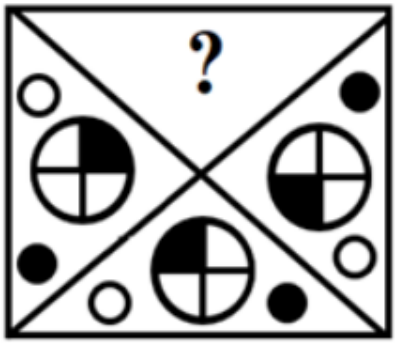
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Q6 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B.  ✓

C. 

D. 

Q7 Mathematics

The list price of an article at a showroom is Rs.2000, and it is being sold at successive discounts of 20% and 10%. Find its net selling price.

A. Rs.1520

B. Rs.1400

C. Rs.1700

D. Rs.1440 ✓

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Q8 Mathematics

Six years ago the ratio of ages of P and Q was 6 : 5. Four years hence, it will be 11 : 10. What is the age of P now?

A. 15 years

B. 25 years

C. 18 years ✓

D. 20 years

Q9 Mathematics

The atomic number of sulphur is-

A. 18

B. 14

C. 16 ✓

D. 12

Q10 Mathematics

If selling price is Rs.500 more than the cost price and the profit earned is 40%, then what is the cost price?

A. Rs.1750

B. Rs.1800

C. Rs.1250 ✓

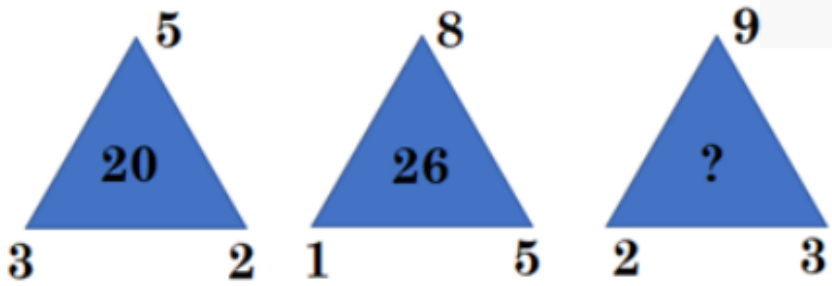
D. Rs.1500

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Q11 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 40 ✓

B. 35

C. 32

D. 38

Q12 Mathematics

A sum lent at 7% per annum will produce as much Simple Interest in 2 years as Rs.1750, lent at 5% will produce in 4 years. Find the sum.

A. Rs.1600

B. Rs.2500 ✓

C. Rs.2400

D. Rs.1800

Q13 Mathematics

Two pipes can fill a tank in 45 and 30 minutes respectively. After sometime the slower pipe was closed. Then the tank was filled by the other pipe in 13 minutes 20 seconds. When was the slower pipe closed after start?

A. 12 minutes

B. 8.5 minutes

C. 15 minutes

D. 10 minutes ✓

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Q14 Mathematics

A boy has a total of Rs.60 which is a sum of one rupee, 50 paise and 25 paise coins in the ratio of 5 : 6 : 8. Find the number of 25 paise coins.

A. 42

B. 30

C. 32

D. 48 ✓

Q15 Mathematics

Find the smallest number that leaves the remainder 13, 41 and 29 on being divided by 20, 48 and 36 respectively.

A. 727

B. 720

C. 713 ✓

D. 187

Q16 Mathematics

A certain principal amounts to Rs.15000 in 2.5 years and to Rs.16500 in 4 years at the same rate of interest. Find the rate of interest.

A. 6%

B. 7%

C. 9%

D. 8% ✓

Q17 Mathematics

How many times do the tidal waves build up and recede (rise and fall) in a day?

A. Thrice

B. Twice ✓

C. Once

D. Four times

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Q18 Mathematics

Simplify: $\frac{(375\times375)+(125\times125)-(375\times125)}{(375\times375\times375)+(125\times125\times125)}$

Top

A. 500

B. 1/3

C. 1/1000

D. 1/500 ✓

Q19 Mathematics

Calculate the median for this data.

Daily income in Rs.	10–14	15–19	20–24	25–29	30–34	35–39
No. of workers	5	10	15	20	10	5

A. 26.4

B. 25.13 ✓

C. 12.33

D. 20

Q20 Mathematics

Find the wrong number in the following series.

2, 20, 54, 110, 182

A. 54 ✓

B. 110

C. 20

D. 182

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Q21 Mathematics

A mother and daughter differ in age by 20 years. Five years hence daughter's age will be half her mother's present age. How old is the daughter?

A. 8 years

B. 15 years

C. 10 years ✓

D. 12 years

Q22 Mathematics

If $x^3 + y^3 = 9$ and $x + y = 3$, then find the value of 'xy'.

A. 1

B. 3

C. 2 ✓

D. 6

Q23 Mathematics

Arun's income is 150% of Bala's income. Income of Chandru is 120% of the income of Arun. If the total income of Arun, Bala and Chandru is Rs.86000, then what is the income of Chandru?

A. Rs.30000

B. Rs.32000

C. Rs.34000

D. Rs.36000 ✓

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Q24 Mathematics

Complete the series.

39, 32, 25, 18, 11, (...)

A. 4 ✓

B. 9

C. 1

D. 7

Q25 Mathematics

Find the least number when divided by 8, 12, 18 leaving remainders 6, 10, 16 respectively.

A. 144

B. 70 ✓

C. 74

D. 146

Q26 Mathematics

Complete the series.

8, 24, 12, 36, 18, 54, (...)

A. 27 ✓

B. 68

C. 72

D. 108

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Q27 Mathematics

A rectangle has a width 'a' and length 'b'. If the width is decreased by 20% and the length is increased by 10%, then what is the area of the new rectangle in percentage compared to 'ab'?

A. 120%

B. 110%

C. 80%

D. 88% ✓

Q28 Mathematics

Two taps P and Q take 60 minutes and 40 minutes to fill a cistern separately. If tap Q is open for the first half time and P alone is open for the remaining time, how long will it take to fill the cistern?

A. 45 minutes

B. 32 minutes

C. 36 minutes

D. 48 minutes ✓

Q29 Mathematics

A solid is in the shape of a cone fitted on a hemisphere both with radii 2 cm and height of cone being equal to its radius. What is the volume of this solid?

A. $2\pi\ cm^3$

B. $6\pi\ cm^3$

C. $4\pi\ cm^3$

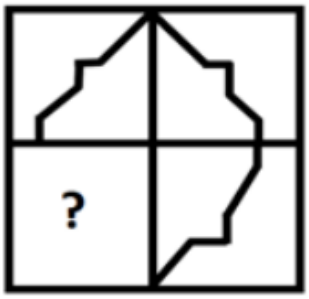
D. $8\pi\ cm^3$ ✓

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Q30 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C. 

D. 

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Q1 Mathematics

The product of two numbers is 9375. The quotient, when the largest number is divided by the smallest number is 15. Find the sum of these numbers.

A. 395

B. 380

C. 400 ✓

D. 425

Q2 Mathematics

Simplify: 30 × 3 × 0.3 × 0.03 × 0.003

A. 0.00243 ✓

B. 0.002403

C. 0.0000243

D. 0.000081

Q3 Mathematics

If an item is sold for Rs.8000 at 25% profit, then find the profit.

A. Rs.1000

B. Rs.1200

C. Rs.1600 ✓

D. Rs.1800

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Q4 Mathematics

A tank gets filled by a pipe in 2 hours. But due to a leak, it takes 30 more minutes to fill the tank. How long will it take a full tank to get emptied by the leak, when the pipe is closed?

- A. 10 hours ✓
- B. 2 hours 30 minutes
- C. 2 hours 45 minutes
- D. 5 hours

Q5 Mathematics

Find the missing number in the series.

21, (...), 22, 36, 23, 37

- A. 32
- B. 35 ✓
- C. 21
- D. 22

Q6 Mathematics

A 270 m long train running at a speed of 120 km/h crosses another train running in opposite direction at the speed of 80 km/h in 9 seconds. What is the length of the other train?

- A. 230 m ✓
- B. 280 m
- C. 240 m
- D. 260 m

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Q7 Mathematics

A boatman goes 2 km upstream in 1 hour and 1 km downstream in 10 minutes. What is the speed of boat in still water?

A. 3 km/h

B. 4.5 km/h

C. 4 km/h ✓

D. 2.5 km/h

Q8 Mathematics

Find the LCM of 2.05, 1.05 and 2.

A. LCM of 21/20, 41/20 and 20/20

B. LCM of 205/100, 105/100 and 200/100 ✓

C. LCM of 205, 105 and 200/10

D. LCM of 205, 105 and 200

Q9 Mathematics

If |-4x + 4| - 6 = -6, then find the value of 'x'.

A. 1 ✓

B. -1

C. 2

D. 0

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Q10 Mathematics

A precious crystal piece worth Rs.15600 is accidentally dropped and was broken into three pieces, their weights respectively proportional to 2, 3 and 5 units. Value of the crystal varies directly as the cube of its weight. Calculate the percentage loss in the value.

A. 16%

B. 75%

C. 25%

D. 84% ✓

Q11 Mathematics

Simplify: $\dfrac{1\frac{1}{4} \div 1\frac{1}{2}}{\frac{1}{15} + 1 - \frac{9}{10}}$

A. 5 ✓

B. 4

C. 2

D. 3

Q12 Mathematics

Three taps P, Q and R are filled in a water tank to draw out water. Tap P fills 4 buckets in 24 minutes, Q fills 8 buckets in 1 hour and R fills 2 buckets in 20 minutes. All the taps are opened and the tank is emptied in 2 hours. If a bucket holds 10 litres of water, what is the capacity of the tank?

A. 180 litres

B. 200 litres

C. 480 litres ✓

D. 240 litres

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Q13 Mathematics

Find the missing number in the series.
49, 64, (...), 100, 121

A. 72

B. 92

C. 88

D. 81 ✓

Q14 Mathematics

For a particular sum at a certain rate, find the ratio of Simple Interest got for 4 years and 8 years.

A. 1 : 2 ✓

B. 1 : 4

C. 2 : 1

D. 2 : 3

Q15 Mathematics

What is the sum of all two-digit numbers ≤ 50?

A. 1250

B. 1350

C. 1330

D. 1230 ✓

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Q16 Mathematics

If 138.019 + 341.981 - 146.395 = 133.605 + a, find the value of 'a'.

A. 200 ✓

B. 295.5

C. 248

D. 120.085

Q17 Mathematics

Ten years ago, a mother was thrice as old as her son. After 10 years, she will be twice as old as her son. What is the ratio of their present ages?

A. 7 : 3 ✓

B. 3 : 2

C. 7 : 4

D. 4 : 3

Q18 Mathematics

The diameter of a circular wheel is 1.4 m. How many revolutions will it make in travelling 22 km?

A. 500

B. 2000

C. 5000 ✓

D. 2500

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Q19 Mathematics

Find the ODD one out from the given options.

A. 18 - 45

B. 29 - 82 ✓

C. 23 - 14

D. 36 - 27

Q20 Mathematics

LCM of two numbers 'p' and 'q' is 935 and (p>q). What is the maximum sum of the digits of 'q' out of the possible pairs 'p', 'q'?

A. 8

B. 20

C. 13 ✓

D. 5

Q21 Mathematics

P does half as much work as Q. R does half as much work as P and Q together. If R alone can finish it in 40 days, then all of them together will finish the work in how many days?

A. 30

B. 15

C. 40/3 ✓

D. 20

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Q22 Mathematics

A number, when 35 is subtracted from it, reduces to its 80 percent. What is four-fifths of that number?

A. 120

B. 140 ✓

C. 90

D. 70

Q23 Mathematics

If a certain sum becomes Rs.20720 in 4 years and Rs.24080 in 6 years, find the sum and rate of Simple Interest.

A. Rs.16000, 8%

B. Rs.16000, 12%

C. Rs.14000, 12% ✓

D. Rs.14000, 10%

Q24 Mathematics

A pendulum of length 'l' swings through an angle of 45° and describes an arc of length 15.4 cm. Find the value of 'l'.

A. 19.6 cm ✓

B. 22.2 cm

C. 20.6 cm

D. 18.4 cm

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Q25 Mathematics

Evaluate: $2\tan^2 45° + \cos^2 30° - \sin^2 60°$

A. 1/2

B. 2 ✓

C. 1

D. 0

Q26 Mathematics

With the market price coming down by 25%, Sita is able to procure 1 kg of sugar more for Rs.30. What is the original price of sugar?

A. Rs.7.50

B. Rs.10 ✓

C. Rs.7.30

D. Rs.16.50

Q27 Mathematics

Find the wrong number in the following series.

133, 119, 107, 91, 77

A. 107 ✓

B. 133

C. 119

D. 91

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Which of the following is same as 14 m/s?

A. 28 km/h

B. 70 km/h

C. 46.6 km/h

D. 50.4 km/h ✓

Q2 Mathematics

Find the missing number in the following series.

11, 30, 22, 41, 33, (...), 44, 63

A. 52 ✓

B. 56

C. 41

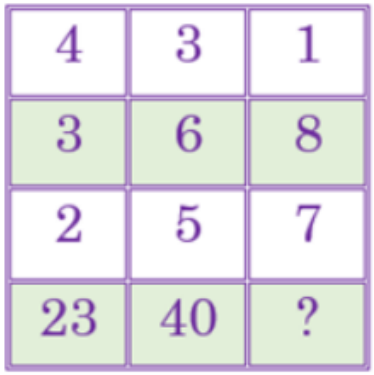
D. 48

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Q3 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



4	3	1
3	6	8
2	5	7
23	40	?

A. 51

B. 54

C. 58 ✓

D. 47

Q4 Mathematics

Complete the series.

33, 36, 12, 15, 5, (...)

A. 8 ✓

B. 6

C. 10

D. 4

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Q5 Mathematics

Find the ODD one out.

2222, 222.2, 22.22, 2.222

A. 22.22

B. 2222 ✓

C. 222.2

D. 2.222

Q6 Mathematics

A certain sum invested for T years at 10% per annum Simple Interest amounts to Rs.400. The amount gets halved when the interest comes down to 4% per annum, the principal and time being the same. What is the principal and value of T?

A. T = 50 years; P = Rs.200/3 ✓

B. T = 50 years; P = Rs.200

C. T = 50 years; P = Rs.100

D. T = 25 years; P = Rs.200/3

Q7 Mathematics

What fraction of an hour is 48 seconds?

A. 4/75

B. 2/73

C. 1/75 ✓

D. 4/300

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Q8 Mathematics

A number leaves a remainder 4 when divided by 6. What is the remainder when its square is divided by 6?

A. 3

B. 2

C. 4 ✓

D. 5

Q9 Mathematics

A sum of money amounts to Rs.9800 in 5 years and Rs.12005 in 8 years at the same rate of simple interest. What is the rate of interest?

A. 15%

B. 5%

C. 12% ✓

D. 8%

Q10 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 68

B. 74

C. 71 ✓

D. 64

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Q11 Mathematics

Pooja's age 4 years back and Deepa's age after 4 years are equal. The ratio of Pooja's age 4 years hence and Deepa's age 4 years before is 3 : 1. What is the ratio of their present ages?

A. 5 : 7

B. 4 : 7

C. 5 : 2

D. 5 : 3 ✓

Q12 Mathematics

A circular wire of radius 7cm is bent to form a rectangle whose sides are in the ratio 4 : 7 what is the area of the rectangle so formed?

A. $112\ cm^2$ ✓

B. $60\ cm^2$

C. $84\ cm^2$

D. $56\ cm^2$

Q13 Mathematics

Simplify: $\frac{\sin\theta - 2\sin^3\theta}{2\cos^3\theta - \cos\theta}$

A. $\tan\theta$ ✓

B. $\sin\theta + \cos\theta$

C. $\sin\theta - \cos\theta$

D. $2\sin\theta\cos\theta$

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Q14 Mathematics

To row a certain distance upstream and downstream takes t_1 hours and t_2 hours respectively and speed of stream is 'y' km/h. Find speed in still water.

A. $\left[\frac{(t_1+t_2)2y}{(t_1-t_2)}\right]$ km/h

B. $\left[\left(\frac{t_1-t_2}{t_1+t_2}\right)y\right]$ km/h

C. $\left(\frac{t_1^2-t_2^2}{2y}\right)$ km/h

D. $\left[\frac{(t_1+t_2)}{(t_1-t_2)}y\right]$ km/h ✓

Q15 Mathematics

When the digits of a two-digit number are reversed, the value of the number is increased by 45. The sum of the digits is 11. What is the original number?

A. 83

B. 24

C. 65

D. 38 ✓

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Q16 Mathematics

Find the wrong number in the given series.

360, 120, 60, 20, 11

A. 60

B. 11 ✓

C. 20

D. 360

Q17 Mathematics

Two varieties of rice each costing Rs.50 per kg and Rs.60 per kg respectively are mixed in some ratio, and the mixed rice is sold at Rs.70 per kg, so as to get 20% profit. What is the ratio in which the two varieties are mixed?

A. 3 : 5

B. 2 : 5

C. 2 : 7

D. 1 : 5 ✓

Q18 Mathematics

After completing a work together in 2 days, P and Q received Rs.1200 and Rs.400 respectively as wages. In how many days will Q alone complete the work?

A. 8 days ✓

B. 6 days

C. 1/3 days

D. 3 days

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Q19 Mathematics

Age of A is twice that of B. Sum of their present ages is 60. What will be the sum of their ages 5 years hence?

A. 80

B. 70 ✓

C. 65

D. 75

Q20 Mathematics

An article marked at Rs.80 is sold for Rs.68. What is the rate of discount?

A. 16%

B. 12%

C. 15% ✓

D. 18%

Q21 Mathematics

If $3\sqrt{5}+\sqrt{125}=17.88$, then find the value of $\sqrt{80}+6\sqrt{5}$.

Top

A. 22.25

B. 22.35 ✓

C. 18.75

D. 20.235

Q22 Mathematics

Find the area of a parallelogram with base 48 cm and height 32 cm.

A. 1536 cm² ✓

B. 1444 cm²

C. 1426 cm²

D. 1546 cm²

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Q23 Mathematics

P and Q together can do a job in 7 days. P is twice as efficient as Q. In how many days can P alone do the job?

A. 10.5 days ✓

B. 15 days

C. 12 days

D. 21 days

Q24 Mathematics

Two tables are bought for Rs.2000 by a person. He sells them later, one at a loss of 5%, the other at a gain of 5% thereby incurring a loss of Rs.20. What are the cost prices of the two tables?

A. Rs.1400, Rs.600

B. Rs.1200, Rs.800 ✓

C. Rs.1300, Rs.700

D. Rs.1050, Rs.950

Q25 Mathematics

P can complete a work in 6 days. Working with the help of Q, the job is completed in 7 days. If P starts the work and P and Q work on alternate days, in how many days can Q alone complete the job?

A. 9 ✓

B. 12

C. 10

D. 8

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Q26 Mathematics

Find the greatest number of four digits exactly divisible by 15, 25, 30 and 45.

A. 9400

B. 9900 ✓

C. 9600

D. 9000

Q27 Mathematics

The base of a right pyramid is a square of side 24 cm and height of the pyramid is 16 cm. What is its lateral surface area?

A. 960 cm^2 ✓

B. 1020 cm^2

C. 890 cm^2

D. 1024 cm^2

Q28 Mathematics

Find the smallest fraction.

A. 7/8

B. 13/16

C. 31/40 ✓

D. 63/80

Q29 Mathematics

If 5 # 3 @ 3 = 12 and 7 # 2 @ 4 = 10, then what will be 2 # 9 @ 5?

A. 26

B. 13 ✓

C. 32

D. 29

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Q30 Mathematics

After spending 30% of his salary, a man had Rs.2100 left. From the remaining amount, he spent 15% on minor repairs. What are his savings?

A. Rs.1600

B. Rs.1200

C. Rs.1685

D. Rs.1785 ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

An article when sold at a gain of 5% yields Rs.15 more than when sold at a loss of 5%. Find its cost price.

A. Rs.200

B. Rs.150 ✓

C. Rs.250

D. Rs.300

Q2 Mathematics

A train crosses a pole in 20 seconds, and it crosses a cyclist coming in opposite direction at 5 km/h in 18 seconds. What is the speed of the train?

A. 65 km/h

B. 45 km/h ✓

C. 40 km/h

D. 62 km/h

Q3 Mathematics

If $\sqrt{(x-1)(y+2)}=7$, then find the values of x and y.

A. 12, 16

B. 8, 5 ✓

C. 15, 12

D. 50, 47

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Q4 Mathematics

In one hour, a boat goes 11 km along the stream or 5 km against the stream. Find the speed of the boat in still water.

A. 5 km/h

B. 6 km/h

C. 8 km/h ✓

D. 3 km/h

Q5 Mathematics

Two vehicles start from places P and Q towards Q and P respectively at the same time. After crossing each other, they complete their journey in 7/2 hours and 18/7 hours respectively. If the second vehicle moves at a speed of 70 km/h, then find the speed of the first vehicle.

A. 54 km/h

B. 48.6 km/h

C. 72 km/h

D. 60 km/h ✓

Q6 Mathematics

The Simple Interest for first 2 years is 6%, next 2 years is 7% and for any number of years exceeding 4 years is 8%. Find the total interest on a principal 'P' at the end of 7 years.

A. P

B. 2P

C. 3P/2

D. P/2 ✓

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Q7 Mathematics

Find the HCF of two consecutive integers.

A. Product of the integers

B. 1 ✓

C. 0

D. Sum of the integers

Q8 Mathematics

Evaluate: $0.6\overline{23}$

A. $\frac{617}{990}$ ✓

B. $\frac{623}{999}$

C. $6\frac{23}{990}$

D. $6\frac{23}{999}$

Q9 Mathematics

One-fourth of the goods is sold at a loss of 20%. If there has to be an overall profit of 10%, at what gain percent should the remaining stock be sold, if the cost price of the entire goods is Rs.1600?

A. 18%

B. 25%

C. 20% ✓

D. 15%

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Q10 Mathematics

A certain sum of money amounts to Rs.2420 in two years and Rs.2662 in three years at some rate of Compound Interest, compounded annually. Find the sum and the rate of interest per annum.

A. Rs.1000 and 12%

B. Rs.2500 and 5%

C. Rs.2250 and 15%

D. Rs.2000 and 10% ✓

Q11 Mathematics

Which of these will have the least area?

(1) A regular hexagon of side 1 unit.

(2) A circle of radius 1 unit.

(3) A square of side $24\sqrt{12}$ units.

A. A square of side $24\sqrt{12}$ units.

B. Cannot be determined

C. A regular hexagon of side 1 unit. ✓

D. A circle of radius 1 unit.

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Q12 Mathematics

Simplify:

0.000088 + 0.11

A. 0.0008 ✓

B. 0.08

C. 0.00008

D. 0.008

Q13 Mathematics

Complete the series.

18, 9, 9, 13.5, 27, (...)

A. 69.1

B. 65.2

C. 71.2

D. 67.5 ✓

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Q14 Mathematics

Simplify:

$7 \div [(11 - 5) \div \{(5 - 1) \div (4 + 6 \div 20)\}]$

A. 136/140

B. 117/17

C. 140/129 ✓

D. 136/17

Q15 Mathematics

Ratio of principal to the amount got after a certain time at a certain rate of Simple Interest is 4 : 5. After three more years, the ratio becomes 5 : 7. What is the rate of interest?

A. 4%

B. 5% ✓

C. 8%

D. 4.5%

Q16 Mathematics

If 20 men can build a wall 56 m long in 6 days, then what length of wall can be built by 35 men in 3 days?

A. 36 m

B. 52 m

C. 60 m

D. 49 m ✓

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Q17 Mathematics

A number when divided by 15 leaves the remainder 12. Another number when divided by 5 leaves the remainder 2. What is the remainder when their sum is divided by 5?

A. 3

B. 1

C. 2

D. 4 ✓

Q18 Mathematics

A small cone is cut off at the top by a plane parallel to the base from a cone of height 30 cm. If the volume of the small cone is 1/27 of the given cone, find at what height above the base is the section made?

A. 10 cm

B. 14 cm

C. 20 cm ✓

D. 8 cm

Q19 Mathematics

If the number 150 is increased by 30%, then what is the increased value?

A. 45

B. 180

C. 145

D. 195 ✓

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Q20 Mathematics

Find the least number to be added to the least four digit number so that the sum is divisible by 3, 4, 5 and 6.

A. 33

B. 40

C. 20 ✓

D. 10

Q21 Mathematics

Leela is 24 years older than her son. If the ratio of their ages is 23 : 11, then how old is Leela?

A. 46 years ✓

B. 50 years

C. 69 years

D. 34 years

Q22 Mathematics

If $\sin x = \frac{m}{\sqrt{1+m^2}}$ then find 'tan x'.

A. $\sqrt{1+m^2}$

B. $\frac{m^2-1}{m^2+1}$

C. m ✓

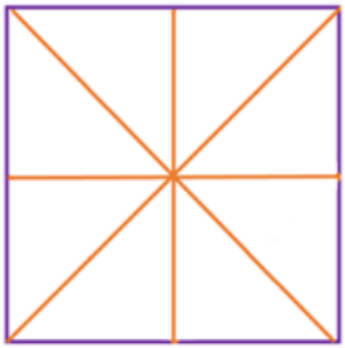
D. $\frac{m^2}{1+m^2}$

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Q23 Mathematics

How many squares are there in the given figure?



A. 5 ✓

B. 16

C. 9

D. 10

Q24 Mathematics

If (20 + 8 × 0.5)/(20 - x) = 12, then find the value of 'x'.

A. 14

B. 16

C. 18 ✓

D. 20

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Q25 Mathematics

Complete the series.

12, 17, 27, 57, (...)

A. 168

B. 179

C. 162

D. 177 ✓

Q26 Mathematics

What is the radius of a cylinder whose volume is 3850 cm³ and height 25 cm?

A. 7 cm ✓

B. 14 cm

C. 3.5 cm

D. 10.5 cm

Q27 Mathematics

P takes 50% more time than Q. If they work together, the work will be done in 18 days. In how many days will Q alone complete the work?

A. 24 days

B. 30 days ✓

C. 22 days

D. 25 days

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Q28 Mathematics

Complete the series.

32, 16, 48, 24, 72, (...)

A. 39

B. 28

C. 31

D. 36 ✓

Q29 Mathematics

If A and B are supplementary, then find the value of cos A cos B - sin A sin B.

A. 2

B. -1 ✓

C. 0

D. 1

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Q30 Mathematics

Complete the series.

9, 34, 57, 77, 93, (...)

A. 98

B. 104 ✓

C. 92

D. 87

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Instead of dividing Rs.117 among P, Q and R in the ratio 1/2 : 1/3 : 1/4, it was wrongly divided in the ratio 2 : 3 : 4. Who gains the most in this distribution and how much do they gain?

A. P, Rs.28

B. Q, Rs.35

C. R, Rs.27

D. R, Rs.25 ✓

Q2 Mathematics

Find the HCF of $(a^3 + b^3)$, $(a + b)^2$ and $(a^2 - b^2)$.

A. $(a + b)(a - b)$

B. $(a + b)$ ✓

C. $(a - b)$

D. $(a^3 + b^3)(a^2 - b^2)$

Q3 Mathematics

Rs.800 become Rs.956 in 3 years at a certain rate of Simple Interest. What is the rate?

A. 6.5% ✓

B. 8%

C. 7.5%

D. 8.2%

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Q4 Mathematics

If $a + b + c=0$ then find value of $(b + c)^2/bc + (c + a)^2/ca + (a + b)^2/ab$.

A. $8abc$

B. $a^2 + b^2 + c^2$

C. $2(a + b + c)^2$

D. 3 ✓

Q5 Mathematics

Simplify: $\frac{\tan A}{(1+\tan^2 A)^2} + \frac{\cot A}{(1+\cot^2 A)^2}$

A. $\sin A \cos A$ ✓

B. $2 \sin A \cos A$

C. $\sin A - \cos A$

D. $(\sin A + \cos A)^2$

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Q6 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C. 

D.  ✓

Q7 Mathematics

Simplify: [2 × (3/2) - 3 × (2/3)] × [2/5 of 3/5 of 100]

A. 25

B. 0

C. 24 ✓

D. 12

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Q8 Mathematics

The area of a rectangle is 9/20 times the area of a square. If the length and breadth of the rectangle are in the ratio 5 : 4, then find the ratio of perimeters of rectangle and square.

A. 27 : 40 ✓

B. 25 : 45

C. 27 : 20

D. 25 : 48

Q9 Mathematics

A towel, when bleached, was found to have lost 20% of its length and 10% of its breadth. Find the percentage of decrease in its area.

A. 28% ✓

B. 10%

C. 10.08%

D. 20%

Q10 Mathematics

Two boats P and Q run between two cities A and B on a stream with flow of 5 km/h. The cities are 300 km apart and P and Q have still water speeds of 25 km/h and 15 km/h respectively. P and Q start from cities A and B towards B and A respectively at the same time. When and where will they meet for the second time?

A. After 20 hours at 200 km from B ✓

B. After 12 hours at 100 km from B

C. After 10 hours at 100 km from B

D. After 20 hours at 100 km from B

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Q11 Mathematics

If 'A' means '+', 'B' means '-', 'C' means 'x' and 'D' means '÷', then find the value of (1 D 1 C 1) A (2 C 2 D 2) A (3 D 3 C 3) B (4 C 4 D 4).

A. 3

B. 2 ✓

C. 6

D. 10

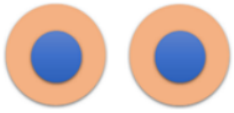
Q12 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Ring, Ornaments, Necklace, Diamond ring

A.  ✓

B. 

C. 

D. 

Q13 Mathematics

Ganesh took a loan of Rs.14000 to be paid after three years with Compound Interest at 10% per annum. How much total amount should he pay at the end of three years?

A. Rs.17940

B. Rs.18497

C. Rs.16200

D. Rs.18634 ✓

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Q14 Mathematics

What is the area of the jogging track which is 2 m wide that runs along the perimeter of a rectangle 20 m x 18 m inside it?

A. 136 m^2

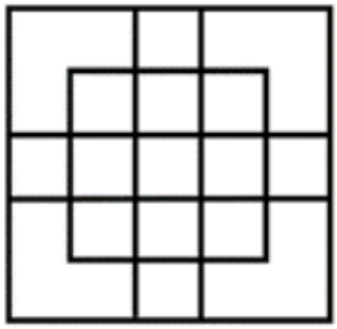
B. 168 m^2 ✓

C. 200 m^2

D. 140 m^2

Q15 Mathematics

How many squares are there in the given figure?



A. 27 ✓

B. 25

C. 19

D. 18

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Q16 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

1	4	?
3	3	4
3	1	2
49	64	169

A. 7 ✓

B. 10

C. 8

D. 4

Q17 Mathematics

Goods worth Rs.6500 with a rebate of 5% were purchased. Then sales tax at 4% was included in the bill. What is the amount of the bill?

A. Rs.6600

B. Rs.6576

C. Rs.6522

D. Rs.6422 ✓

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Q18 Mathematics

Find the ODD one out from the given options.

A. 

B. 

C. 

D.  ✓

Q19 Mathematics

A house worth Rs.150000 is sold by X to Y at 5% profit. If Y sells the house back to X at 2% loss, then in the entire transaction:

A. X loses Rs.4350

B. X gains Rs.3150 ✓

C. X loses Rs.1350

D. X gains Rs.4350

Q20 Mathematics

Ages of A and B differ by 6 and are in the ratio 3 : 5. What is the sum of their ages?

A. 16

B. 24 ✓

C. 32

D. 40

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Q21 Mathematics

Two pipes can fill a tank in 30 minutes and 60 minutes respectively. Another pipe at the bottom will empty it in 120 minutes. If all the pipes are open, in what time will the tank get filled?

A. 24 minutes ✓

B. 40 minutes

C. 50 minutes

D. 52 minutes

Q22 Mathematics

Find the value of $\frac{\sin 30° 17'}{\cos 59°43'} - \frac{\text{cosec } 32°}{\sec 58°}$

A. 2

B. 1/2

C. 0 ✓

D. 1

Q23 Mathematics

A boy was asked to write the value of $(2)^5 \times (8)^2$. He wrote it as 2582. Find the difference between the obtained and the actual value.

A. 189

B. 0

C. 534 ✓

D. 37

Q24 Mathematics

Find the value of $1^2 + 2^2 + 3^2 + \ldots\ldots + 10^2$.

A. 265

B. 285

C. 385 ✓

D. 305

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Q25 Mathematics

Simplify: $\sqrt{(7+3\sqrt{5})\times(7-3\sqrt{5})}$

A. 1

B. 3

C. 2 ✓

D. 4

Q26 Mathematics

A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken for the tank to get filled?

A. 4 hours 30 minutes

B. 2 hours 20 minutes

C. 3 hours 45 minutes ✓

D. 3 hours 25 minutes

Q27 Mathematics

A man sold two cycles at Rs.1125 each. By selling one cycle, he gained 11% and by selling the other cycle, he lost 11%. Find his gain or loss.

A. Loss 1.2% ✓

B. Gained 1%

C. Neither profit nor loss

D. Loss 2%

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Q28 Mathematics

Complete the series.

684, 114, 57, 9.5, (...)

A. 4.95

B. 4.75 ✓

C. 5.82

D. 5.18

Q29 Mathematics

If the speed of sound in air is 344 m/s at 22° C, and the minimum time interval between sound and echo is 0.1 s for a distinct echo, what is the distance the sound should travel from source to reflecting surface and then back to ear?

A. 12.8 m

B. 34.4 m ✓

C. 18.6 m

D. 17.2 m

Q30 Mathematics

P completes 80% of a certain work in 20 days. Then with the help of Q, he is able to finish it in 3 more days. How many days will Q take to finish the work, if he works alone?

A. 35

B. 36.5

C. 37.5 ✓

D. 40

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Find the volume of a sphere whose surface area is 1386 m².

A. 3850 m³

B. 4651 m³

C. 4851 m³ ✓

D. 5711 m³

Q2 Mathematics

Simplify: 0.05 × 0.002

A. 0.01

B. 0.0001 ✓

C. 0.1

D. 0.001

Q3 Mathematics

Eighteen men can complete a piece of work in 64 days. 9 women can complete it in 108 days, whereas 7 children can finish it in 216 days. How many days will 16 men, 9 women and 21 children together take to complete the same work?

A. 42

B. 27 ✓

C. 32

D. 45

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Q4 Mathematics

Five years ago, ratio of ages of P and Q was 7 : 9. Ten years hence, this ratio would become 5 : 6. What is the ratio at present?

A. 4 : 5 ✓

B. 6 : 7

C. 2 : 1

D. 5 : 4

Q5 Mathematics

Two numbers are in the ratio 1 : 4 and their LCM and HCF are 84 and 21. Find the smaller number.

A. 108

B. 21 ✓

C. 18

D. 84

Q6 Mathematics

Simplify: sin(30° - A) + sin(30° + A)

A. 2 sin A

B. 2 cos A

C. sin A

D. cos A ✓

Q7 Mathematics

The repayment of a loan after 6 years at rate of 24% Simple Interest is Rs.73200. What is the amount borrowed?

A. Rs.42000

B. Rs.30000 ✓

C. Rs.45000

D. Rs.30800

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Q8 Mathematics

Ages of two brothers differ by 7 and are in the ratio 3 : 2. What is the sum of their ages?

A. 21

B. 42

C. 35 ✓

D. 45

Q9 Mathematics

An inlet pipe will fill a tank in 10 minutes. There are two outlets that can empty the tank separately in 12 and 15 minutes respectively. If all the pipes are opened and water starts filling up the tank, in what time will the tank get filled or emptied?

A. Emptied in 20 minutes ✓

B. Filled in 36 minutes

C. Emptied in 18 minutes

D. Filled in 75 minutes

Q10 Mathematics

Find the missing number in the series.

(...), 16, 20, 11, 18, 6

A. 15

B. 14

C. 22 ✓

D. 17

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Q11 Mathematics

The difference between two integers is 5 and their product is 500. Find the numbers.

A. 30, 25

B. 25, 20 ✓

C. 15, 20

D. 21, 26

Q12 Mathematics

The population of a town increased by 10% and 20% in two successive years, but decreased by 25% in the third year. Find the ratio of the population in the third year and the population 3 years back.

A. 1 : 1

B. 2 : 1

C. 99 : 100 ✓

D. 100 : 99

Q13 Mathematics

The mean of a distribution is 14 and standard deviation is 5. Find the coefficient of variation.

A. 48.3%

B. 60.4%

C. 27.9%

D. 35.7% ✓

Q14 Mathematics

If $2x + y = 35$ and $3x + 4y = 65$, find the value of x/y.

A. 3 ✓

B. 9

C. 5

D. 7

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Q15 Mathematics

Tank 'A' is two-fifths full. Pipe P can fill it in 10 minutes while pipe Q can empty it in 6 minutes. In what time will the tank get empty, if both P and Q are opened?

A. 7 minutes

B. 6 minutes ✓

C. 6.5 minutes

D. 5.5 minutes

Q16 Mathematics

A boat whose speed in still water is 15 km/h goes 30 km downstream and comes back upstream in 4.5 hours. What is the speed of water current?

A. 10 km/h

B. 4 km/h

C. 5 km/h ✓

D. 6 km/h

Q17 Mathematics

The difference between the Simple Interest on some principal at 8% for 8 months and 6% for 14 months is Rs.200. What is the principal?

A. Rs.14400

B. Rs.24000

C. Rs.12000 ✓

D. Rs.12800

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Q18 Mathematics

The length of the direct common tangent to two circles of radii r_1 and r_2 and d is the distance between their centres is:

A. $\sqrt{d^2(r_1r_2)}$

B. $\sqrt{d^2-(r_1^2r_2^2)}$

C. $\sqrt{d^2-(r_1+r_2)^2}$

D. $\sqrt{d^2-(r_1-r_2)^2}$ ✓

Q19 Mathematics

A cycle bought at Rs.1400 is sold at a loss of 15%. What is the selling price?

A. Rs.1090

B. Rs.1385

C. Rs.1190 ✓

D. Rs.1290

Q20 Mathematics

The curved surface areas of two cones are in the ratio 2 : 1; their slant heights are in the ratio 1 : 2. What is the ratio of their radii?

A. 4 : 1 ✓

B. 1 : 1

C. 1 : 3

D. 1 : 4

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Q21 Mathematics

Area of a square field is 24200 m². How long will it take for a person to cross the field diagonally at the rate of 4.4 km/h?

A. 4 minutes

B. 2.5 minutes

C. 2 minutes

D. 3 minutes ✓

Q22 Mathematics

A loss of 25% is incurred in selling an item for Rs.2400. What should be the selling price if there should be a profit of 25%?

A. Rs.3600

B. Rs.4000 ✓

C. Rs.4200

D. Rs.2700

Q23 Mathematics

A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. What is the speed of the train?

A. 55 km/h

B. 45 km/h

C. 54 km/h

D. 50 km/h ✓

Q24 Mathematics

If 3*4 = 21 ; 4*5 = 36 ; 5*6 = 55, then find 6*7.

A. 67

B. 91

C. 42

D. 78 ✓

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Q25 Mathematics

Complete the series.

2, 3, 6, 18, (...)

A. 64

B. 96

C. 108 ✓

D. 46

Q26 Mathematics

What is the probability of getting a sum 10, when a die is rolled twice?

A. 3

B. 1/12 ✓

C. 1/36

D. 5/36

Q27 Mathematics

Find the least perfect cube divisible by 2, 3, 4 and 6.

A. 1728

B. 360

C. 512

D. 216 ✓

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Q28 Mathematics

Find the missing number in the following series.

256, 128, 64, 32, (...), 8

A. 10

B. 14

C. 16 ✓

D. 12

Q29 Mathematics

Find the product of first 10 whole numbers.

A. 100

B. 0 ✓

C. 55

D. 101

Q30 Mathematics

If CAT + DOG = 50, then BAT + HEN = ?

A. 40

B. 50 ✓

C. 25

D. 30

Blackbook

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Mathematics 21 Questions • Answer Key

Q1 Mathematics

An article bought at 20% discount is sold at 25% profit. What is the profit or loss compared with the original price?

A. 10% profit

B. No profit or loss ✓

C. 20% loss

D. 10% loss

Q2 Mathematics

Sum and difference of the ages of two children are 33 and 3 respectively. What is the age of the elder child?

A. 16 years

B. 15 years

C. 18 years ✓

D. 24 years

Q3 Mathematics

The product of two numbers is 192 and their sum is 28. Find the smallest of these two numbers.

A. 18

B. 12 ✓

C. 16

D. 14

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Q4 Mathematics

Complete the series.

7, 26, 63, 124, 215, 342, (...)

A. 511 ✓

B. 421

C. 481

D. 391

Q5 Mathematics

If $a + b + c = 2s$, then find the value of $(s - a)^3 + (s - b)^3 + 3(s - a)(s - b)c$.

A. c^2

B. c^3 ✓

C. $2s$

D. ac

Q6 Mathematics

In ΔABC, D and E are points on sides AB and AC respectively such that DE || BC and AD : DB = 3 : 1. If EA = 3.3 cm, then find the value of AC.

A. 5.5 cm

B. 1.1 cm

C. 4.4 cm ✓

D. 4 cm

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Q7 Mathematics

Two taps P and Q can fill a cistern in 30 and 20 minutes respectively. Both P and Q were opened for a few minutes after which P was closed. The rest of the cistern was filled by Q in 5 minutes. After how many minutes was pipe P closed?

A. 8 minutes

B. 10 minutes

C. 9 minutes ✓

D. 12 minutes

Q8 Mathematics

Find $(1 - \sin^2 \theta)(\tan^2\theta + 1) - 1$.

A. -2

B. 2

C. $\text{cosec}^2\ \theta$

D. 0 ✓

Q9 Mathematics

Find the area of a rhombus, one of its sides being 25 cm and one of the diagonals being 30 cm.

A. 480 cm^2

B. 720 cm^2

C. 600 cm^2 ✓

D. 542 cm^2

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Q10 Mathematics

The ratio between the sides of two regular polygons is 1 : 2. Ratio between their interior angles is 2 : 3. Find the number of sides of the polygons.

A. 7, 14

B. 6, 12

C. 5, 10

D. 4, 8 ✓

Q11 Mathematics

Total age of two members in a family four years hence will be 64 years. Four years back their ages was in the ratio 3 : 1. What is the age of the younger of the two?

A. 10

B. 12

C. 15

D. 16 ✓

Q12 Mathematics

The average of 3 consecutive integers is 'k'. If the next two numbers are added, then the new average is:

A. k + 3

B. k + 1 ✓

C. k

D. k + 2

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Q13 Mathematics

Complete the series.

5, 6, 8, 12, 20, 36, (...)

A. 72

B. 81

C. 75

D. 68 ✓

Q14 Mathematics

A train moving at 40 km/h will take 2 hours 15 minutes more to cover a certain distance than when the speed is doubled. What is the distance?

A. 180 km ✓

B. 160 km

C. 220 km

D. 200 km

Q15 Mathematics

Two taps can separately fill a cistern in 20 minutes and 25 minutes. Both taps are open for 10 minutes after which the slower one is closed. How long will it take to fill the remaining portion by the other tap alone?

A. 10 minutes

B. 5 minutes

C. 2 minutes ✓

D. 4 minutes

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Q16 Mathematics

In a ΔABC, $\angle B = 60°$; $\angle C = 40°$. If I is the incentre, then find $\angle BIC$.

A. 130° ✓

B. 80°

C. 40°

D. 50°

Q17 Mathematics

Find the greatest number that will exactly divide 25, 35, 40 and 30.

A. 35

B. 20

C. 5 ✓

D. 15

Q18 Mathematics

A cyclist goes from a place P to Q; first at 4 km/h and later at 5 km/h in 1 hour 24 minutes altogether. If the distances covered in the first and second part of the journey are in the ratio 2 : 1, when did the cyclist change his speed after start?

A. 45 minutes

B. 24 minutes

C. 30 minutes

D. 1 hour ✓

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Q19 Mathematics

If the Simple Interest on a sum of money at 5% for 3 years is Rs.1200, what will be the Compound Interest for the same period and rate for the same sum?

A. Rs.1261 ✓

B. Rs.1461

C. Rs.1561

D. Rs.9261

Q20 Mathematics

Simplify: 0.032 × 0.2 + 0.32 × 0.002

A. 0.00704 ✓

B. 0.0664

C. 0.0064

D. 0.00064

Q21 Mathematics

P and Q agree to do a job for Rs.850. Q alone can do it in 40 days. But P is twice as fast as Q. In order to finish the job earlier, they take the help of R and all three finish the work in 8 days. How much should R be paid for his work?

A. Rs.320

B. Rs.340 ✓

C. Rs.300

D. Rs.240

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Find the greatest among these fractions.

5/6, 6/11, 2/3, 8/9, 6/7

A. 8/9 ✓

B. 6/7

C. 5/6

D. 2/3

Q2 Mathematics

Two squares differ in areas by 32 cm². If the difference in their sides is 4 cm, what are the sides of the two squares?

A. 4 cm, 2 cm

B. 6 cm, 2 cm ✓

C. 12 cm, 8 cm

D. 4 cm, 4 cm

Q3 Mathematics

Find the least number which when doubled will be exactly divisible by 12, 16, 18, 21 and 28.

A. 504 ✓

B. 19940

C. 336

D. 1008

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Q4 Mathematics

The ratio of salaries of P and Q last year is 4 : 5. The ratio of last year salary and the present salary of P is 3 : 5 and for Q this ratio is 2 : 3.

If their total salary at present is Rs. 6800, what is salary of Q ?

A. Rs.3200

B. Rs.3600 ✓

C. Rs.4200

D. Rs.2700

Q5 Mathematics

Ravi sold two bicycles at the same price, but gained 20% on one and on the other bicycle lost 20%. Find his profit or loss in the transaction involved.

A. Loss of 20%

B. Loss of 4% ✓

C. Gain of 10%

D. Gain of 20%

Q6 Mathematics

What Simple Interest is earned on a sum of Rs. 5700 at 12% rate in 1.5 years?

A. Rs.1070

B. Rs.1400

C. Rs.1820

D. Rs.1026 ✓

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Q7 Mathematics

P and Q can do a piece of work in 40 days. Q and R can do it in 120 days. Q alone could finish it in 180 days. In how many days will P and R working together finish the work?

A. 45 ✓

B. 25

C. 35

D. 50

Q8 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

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Q9 Mathematics

Simplify: 4.54 × 0.99

A. 44.946

B. 4.5

C. 4.04946

D. 4.4946 ✓

Q10 Mathematics

The sum of LCM and HCF of two numbers is 372, If LCM is equal to 92 times of HCF and one the numbers is 368, what is the other number?

A. 4 ✓

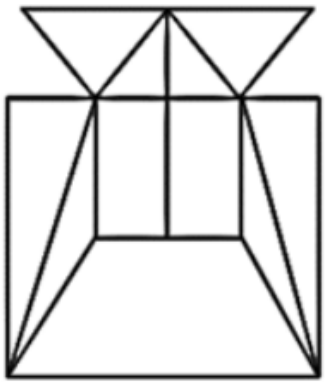
B. 360

C. 92

D. 96

Q11 Mathematics

How many lines are there in the given figure?



A. 8

B. 17 ✓

C. 21

D. 12

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Q12 Mathematics

Two articles cost Rs.2500 each. One is sold at 5% profit. On the whole if there is 20% profit, what is the percentage profit on selling the other article?

Top

A. 20%

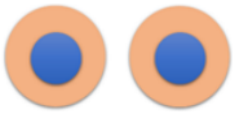
B. 35% ✓

C. 25%

D. 30%

Q13 Mathematics

Choose the figure that best represents the relationship among the classes given below.
State, Continent, District, Country

A. 

B. 

C. 

D.  ✓

Q14 Mathematics

A train takes 2 hours less for a journey of 300 km by increasing its speed by 5 km/h. What is its normal speed?

A. 25 km/h ✓

B. 30 km/h

C. 35 km/h

D. 20 km/h

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Q15 Mathematics

Simplify: 1/(sec θ - tan θ)

A. sec θ + tan θ ✓

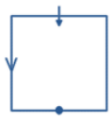
B. cos θ + sin θ

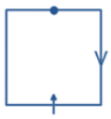
C. cosec θ - cot θ

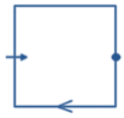
D. $\sec^2 \theta - \tan^2 \theta$

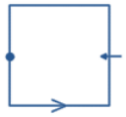
Q16 Mathematics

Find the ODD one out from the given options.

A.  ✓

B. 

C. 

D. 

Q17 Mathematics

The breadth of a rectangular field is 60% of its length. If the perimeter of the field is 800 m, what is the area of the field?

A. 37500 m^2 ✓

B. 40000 m^2

C. 18750 m^2

D. 48000 m^2

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Q18 Mathematics

Find the ODD one out from the given options.

A. 

B.  ✓

C. 

D. 

Q19 Mathematics

Two pipes P and Q can fill a tank in 32 minutes and 48 minutes. Both pipes are opened and after some time pipe Q is turned off. The tank is filled in 24 minutes. When was the pipe Q closed?

A. 10 minutes

B. 12 minutes ✓

C. 15 minutes

D. 16 minutes

Q20 Mathematics

If $\text{cosec}\ \alpha = \sqrt{2}$, evaluate $\dfrac{2\sin^2\alpha + 3\cos^2\alpha}{\text{cosec}^2\alpha + \cot^2\alpha}$.

A. 5/3

B. 5/6 ✓

C. 5/12

D. 5/2

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Q21 Mathematics

Simplify: $\frac{2}{1-\sqrt{2}}$

A. $-2(1+\sqrt{2})$ ✓

B. $-(2+\sqrt{2})$

C. $2+\sqrt{2}$

D. $1-2\sqrt{2}$

Q22 Mathematics

Find the wrong number in the given series.

18, 24, 36, 60, 110, 204

A. 110 ✓

B. 24

C. 204

D. 18

Q23 Mathematics

If $x^4+\frac{1}{x^4}=47$, then find $x+\frac{1}{x}$.

A. 7

B. 9

C. 3 ✓

D. 5

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Q24 Mathematics

Five years ago, the average age of a couple was 24. At present, the average of the couple and a child is 20. What is the child's age?

A. 2 years ✓

B. 4 years

C. 1 year

D. 3 years

Q25 Mathematics

The difference between Simple Interest and Compound Interest for 2 years on a certain sum at the rate of 4% per annum is Rs.8. Find the sum.

A. Rs.5000 ✓

B. Rs.4000

C. Rs.8000

D. Rs.10000

Q26 Mathematics

A cistern can be filled in 9 hours. But due to a leak, it takes one hour more. If the cistern is full, in what time will it become empty due to the leak?

Top

A. 90 hours ✓

B. 30 hours

C. 75 hours

D. 60 hours

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Q27 Mathematics

If $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$; $y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$, then find $x^2 + y^2$.

A. 0

B. 3

C. 14 ✓

D. 13

Q28 Mathematics

If consumption of sugar increases from 12 kg to 15 kg, then what is the percentage increase?

A. 25% ✓

B. 33.3%

C. 39.2%

D. 20%

Q29 Mathematics

If each side of a cube becomes three times of itself, then its volume _____ of its original volume.

A. Becomes 27 times ✓

B. Becomes 2 times

C. Becomes 9 times

D. Becomes 3 times

Q30 Mathematics

Three persons have their ages in the ratio 4 : 7 : 9. Eight years back their total age was 56. How old is the eldest now?

A. 28

B. 42

C. 36 ✓

D. 32

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

A triangular prism has a triangle base with sides 8, 15, 17 units and height 20 units. Its total surface area is:

A. 920 ✓

B. 1020

C. 960

D. 940

Top

Q2 Mathematics

Simplify: (2/3) + (5/6) - (1/9) + (7/9)

A. 43/18

B. 17/9

C. 13/6 ✓

D. 35/18

Q3 Mathematics

Each interior angle of a regular polygon is greater than its exterior angle by 36°. Find the number of sides of the polygon.

A. 4

B. 10

C. 8

D. 5 ✓

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Q4 Mathematics

Find the largest 4 digit number that is exactly divisible by 88.

A. 9944 ✓

B. 9844

C. 9768

D. 8894

Q5 Mathematics

The difference between Compound Interest and Simple Interest in 2 years on a certain sum is Rs.8 at 8% rate. What is the sum?

A. Rs.2000

B. Rs.1250 ✓

C. Rs.1500

D. Rs.1000

Q6 Mathematics

Find the product of $(a^2) \times (2a^{22}) \times (4a^{23})$.

A. $4a^{47}$

B. $8a^{47}$ ✓

C. $8a^{22}$

D. $4a^{46}$

Q7 Mathematics

If 'P' denotes '-', 'Q' denotes '÷', 'R' denotes 'x' and 'W' denotes '+', then 48 Q 12 R 10 P 8 W 4?

A. 28

B. 36 ✓

C. 32

D. 40

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Q8 Mathematics

Two pipes P and Q together can fill a cistern in 4 hours. When opened separately, Q will take 6 hours more than P to fill the cistern. In how much time can P alone fill the cistern?

A. 5 hours

B. 6 hours ✓

C. 8 hours

D. 7 hours

Q9 Mathematics

Complete the series.

36, 31, 29, 24, 22, (...)

A. 16

B. 13

C. 17 ✓

D. 15

Q10 Mathematics

The length of a room is 5.5 m and width is 3.75 m. Find the cost of paving the floor by slabs at the rate of Rs.800 per m².

A. Rs.15550

B. Rs.15600

C. Rs.16500 ✓

D. Rs.15000

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Q11 Mathematics

A discount of 15% on one article is the same as a discount of 20% on another article. Find the cost price of the two articles.

A. Rs.60, Rs.40

B. Rs.40, Rs.20

C. Rs.70, Rs.50

D. Rs.80, Rs.60 ✓

Q12 Mathematics

Height 'h' of a cylinder equals the circumference of its base. Then, the curved surface area in terms of 'h' is:

A. h^3

B. $2h/3$

C. $3h^2$

D. h^2 ✓

Q13 Mathematics

Two cans of milk contain 25% water and 50% water respectively. How much milk must be taken from the two cans to get 12 litres of milk so that it will contain water and milk in the ratio 3 : 5?

A. 5 litres, 7 litres

B. 4 litres, 8 litres

C. 3 litres, 9 litres

D. 6 litres, 6 litres ✓

Q14 Mathematics

The difference between Compound Interest, compounded half-yearly and Simple Interest for two years on a certain sum at 10% rate is Rs.124.05. Find the sum.

A. Rs.8400

B. Rs.10000

C. Rs.8000 ✓

D. Rs.8200

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Q15 Mathematics

Two pipes can fill a tank in 20 and 24 minutes respectively. There is an outlet in the tank that can empty it at 3 gallons per minute. If all the pipes are opened, the tank gets filled in 15 minutes. Find the capacity of the tank.

A. 108 gallons

B. 80 gallons

C. 150 gallons

D. 120 gallons ✓

Q16 Mathematics

Which of the following numbers is exactly divisible by 4?

A. 10010

B. 10002

Top

C. 10012 ✓

D. 10006

Q17 Mathematics

A father is aged twice more than his son. The HCF of their ages is 22. What is the son's age?

A. 18 years

B. 24 years

C. 22 years ✓

D. 20 years

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Q18 Mathematics

The cost price of 20 tables is equal to the selling price of 'x' tables. If there is a profit of 25%, then what is the value of 'x'?

A. 18

B. 16 ✓

C. 25

D. 15

Q19 Mathematics

Find the least multiple of 7 that leaves the remainder 4 when divided by 6, 9, 15 and 18.

A. 94

B. 274

C. 184

D. 364 ✓

Q20 Mathematics

A car is running at a speed of 216 km/hr. What distance will it cover in 30 seconds?

A. 1200 m

B. 1600 m

C. 1800 m ✓

D. 1400 m

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Q21 Mathematics

Complete the series.

3, 2, 7, 6, 11, (...)

A. 8

B. 2

C. 10 ✓

D. 4

Q22 Mathematics

A thief escaped from the police and drove away in a bike at 100 km/h. The police immediately started chasing at 75 km/h. After an hour, there was an engine problem in the police vehicle which took 30 minutes to set it right. Thereafter, the speed of the vehicle picked up to 120 km/h. After how much time was the thief caught?

A. 2 hours 45 minutes

B. 3 hours 40 minutes

C. 5 hours 15 minutes ✓

D. 2 hours 30 minutes

Q23 Mathematics

Ages of P and Q are 50 and 40 respectively. How long ago was the ratio of their ages 3 : 2?

A. 20 years ✓

B. 10 years

C. 15 years

D. 5 years

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Q24 Mathematics

X does half as much work as Y in 1/6 of time. If together they can complete a job in 10 days, how many days will Y take to complete it, when he works alone?

A. 24 days

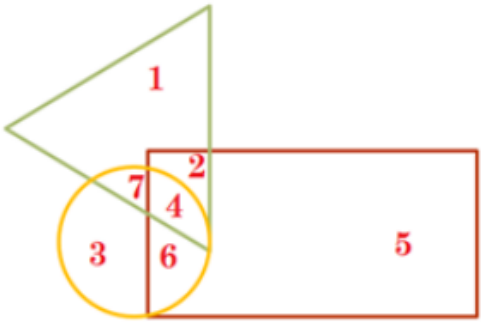
B. 30 days

C. 40 days ✓

D. 35 days

Q25 Mathematics

In the given figure, the circle represents male, triangle represents Engineers, and rectangle represents Doctors. Which region represents the persons who are Engineers and Doctors but not male?



A. 7

B. 6

C. 4

D. 2 ✓

Q26 Mathematics

After selling 30% of the fruits, a fruit seller had 140 fruits left. How many were there originally?

A. 300

B. 200 ✓

C. 288

D. 350

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Q27 Mathematics

How many natural numbers up to 100 are divisible by both 2 and 3?

A. 16 ✓

B. 14

C. 13

D. 17

Q28 Mathematics

Complete the series.

165, 275, 15, 25, 3, (...)

A. 8

B. 11

C. 5 ✓

D. 12

Q29 Mathematics

Simplify: sin θ/(1 - cos θ)

A. tan θ - sec θ

B. cosec θ + cot θ ✓

C. cosec θ - cot θ

D. tan θ + sec θ

Q30 Mathematics

Find the representation of prime factors of 240.

A. $2 \times 2 \times 2 \times 3 \times 5$

B. $2 \times 2 \times 2 \times 2 \times 5$

C. $2 \times 2 \times 3 \times 3 \times 5$

D. $2 \times 2 \times 2 \times 2 \times 3 \times 5$ ✓

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Simplify: $1035 \div \left[\frac{3}{4}(71+65)-15\frac{3}{4}\right]$

A. 12 ✓

B. 20

C. 18

D. 24

Q2 Mathematics

Find the square root of $\frac{a^2}{b^2}+\frac{b^2}{a^2}+2$.

A. $\frac{a}{b}-\frac{b}{a}$

B. $\frac{a-b}{2}$

C. $\frac{a}{2b}-\frac{b}{2a}$

D. $\frac{a}{b}+\frac{b}{a}$ ✓

Q3 Mathematics

Find the mean of the first 10 consecutive odd numbers.

A. 11

B. 13

C. 15

D. 10 ✓

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Q4 Mathematics

Find the ODD one out from the given options.

A. 38, 18

B. 36, 12 ✓

C. 83, 63

D. 35, 15

Q5 Mathematics

Simplify: 1/(cosec θ - cot θ)

A. cosec θ + cot θ ✓

B. cosec θ - cot θ

C. $\text{cosec}^2\,\theta + \cot^2\,\theta$

D. sin θ + cos θ

Q6 Mathematics

What is 1 Dioptre equal to?

A. $1\ m^{-1}$ ✓

B. $1\ mm^{-1}$

C. $1\ dm^{-1}$

D. $1\ cm^{-1}$

Q7 Mathematics

In a Δ ABC, $\angle B = 90°$, AB = 5 cm. Construction of Δ ABC is not possible if BC ~ AC = _____.

A. 4 cm

B. 4.8 cm

C. 6.5 cm ✓

D. 2.5 cm

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Q8 Mathematics

Complete the series.

5, 7, 25, 49, 125, (...)

A. 245

B. 346

C. 343 ✓

D. 625

Q9 Mathematics

A father has a 12 year old son. He was thrice his son's present age when the son was born. How old is the father now?

A. 40 years

B. 46 years

C. 48 years ✓

D. 60 years

Q10 Mathematics

A pipe P can drain out water from a tank in 20 hours. Another pipe Q can drain 20 litres per hour. If both drains are opened, the tank is emptied in 12 hours. What is the capacity of the tank?

A. 800 litres

B. 600 litres ✓

C. 400 litres

D. 650 litres

Blackbook

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Q11 Mathematics

$(2^{25} + 2^{26} + 2^{27} + 2^{28})$ is a multiple of which of the following numbers?

A. 7

B. 15 ✓

C. 11

D. 9

Q12 Mathematics

If D = 4 and COVER = 63, then BASIS = ?

A. 40

B. 60

C. 50 ✓

D. 30

Q13 Mathematics

If 12 men and 6 boys can do a work in 4 days and 4 men and 14 boys can do the same work in 8 days, find the ratio of efficiency of a man to that of a boy.

A. 2 : 11

B. 2 : 5

C. 3 : 7

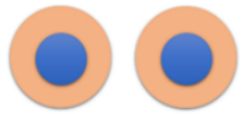
D. 11 : 2 ✓

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Q14 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Keyboard, Monitor, Mouse, Scanner

A. 

B. 

C.  ✓

D. 

Q15 Mathematics

A sum of money lent out at a certain rate of Compound Interest, compounded annually, amounts to Rs.1460 in 2 years and to Rs.1606 in 3 years. Find the rate of interest.

A. 10% ✓

B. 12%

C. 11%

D. 8%

Q16 Mathematics

D, E, F are midpoints of the sides BC, CA, AB of a ΔABC. If area of ΔABC is 20 cm², then find area of the trapezium FBCE.

A. 12 cm²

B. 15 cm² ✓

C. 10 cm²

D. 5 cm²

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Q17 Mathematics

Which least number when divided by 12, 15, 20 and 54 leaves a remainder 8 in each case?

A. 532

B. 556

C. 548 ✓

D. 540

Q18 Mathematics

A grandfather and his granddaughter have their ages in the ratio 9 : 2. Sum of their ages is a prefect square. The difference in their ages is a multiple of 11. What are their ages?

A. 99, 22 ✓

B. 72, 16

C. 90, 20

D. 95, 25

Q19 Mathematics

Complete the series.

2 , 5, 10, 17, (...)

A. 26 ✓

B. 29

C. 27

D. 21

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Q20 Mathematics

Pipe P is twice as fast as Q, and Q is twice as fast as R. Find the ratio of the time taken by P, Q and R to fill a cistern.

Top

A. 4 : 2 : 1

B. 2 : 1 : 4

C. 4 : 1 : 2

D. 1 : 2 : 4 ✓

Q21 Mathematics

Two varieties of tomatoes are bought in the ratio 2 : 3, where the price of first variety is twice that of the second. The varieties are mixed and sold at Rs.17.50 per kg, resulting in a profit of 25%. Find the costs of the two varieties before selling.

A. Rs.22, Rs.11

B. Rs.20, Rs.10 ✓

C. Rs.24, Rs.12

D. Rs.12, Rs.6

Q22 Mathematics

If the volume of a sphere is divided by its surface area, the result is 27 cm. Find the radius of the sphere.

Top

A. 81 cm ✓

B. 9 cm

C. 243 cm

D. 27 cm

Q23 Mathematics

If 0.034 = x/10, find the value of 'x'.

A. 340

B. 34

C. 3.4

D. 0.34 ✓

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Q24 Mathematics

Complete the series.

20, 32, 45, 59, 74, (...)

A. 90 ✓

B. 79

C. 95

D. 85

Q25 Mathematics

If Rs.750 amounts to Rs.1000 in 5 years, then what will it amount to in 10 years at Simple Interest?

A. Rs.1500

B. Rs.1250 ✓

C. Rs.1750

D. Rs.2000

Q26 Mathematics

A and B take part in a 100 m race. A runs at 5 km/hr. A gives B a start of 8 m and still beats him by 8 seconds. Find the speed of B.

A. 4.14 km/hr ✓

B. 4.20 km/hr

C. 5.15 km/hr

D. 4.25 km/hr

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Q27 Mathematics

Two successive discounts on the labelled price of Rs.6000 reduces the sale price to _____ , if the discounts are 10% and 20% successively.

A. Rs.4230

B. Rs.4000

C. Rs.4320 ✓

D. Rs.4200

Q28 Mathematics

On selling 17 balls at Rs.720, there is a loss equal to the cost of 5 balls. What is the cost price of a ball?

A. Rs.40

B. Rs.45

C. Rs.55

D. Rs.60 ✓

Q29 Mathematics

Find the largest number that will divide exactly the product of four consecutive integers.

A. 24 ✓

B. 12

C. 6

D. 8

Q30 Mathematics

If the numerator of a fraction is increased by 100% and the denominator is increased by 150%, then the fraction becomes 16/25. What is the original fraction?

A. 5/6

B. 5/12

C. 4/5 ✓

D. 7/12

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

If the midvalue of a class is 20 and the width of the class is 5, find the lower and upper limits of the class.

A. 17 - 23

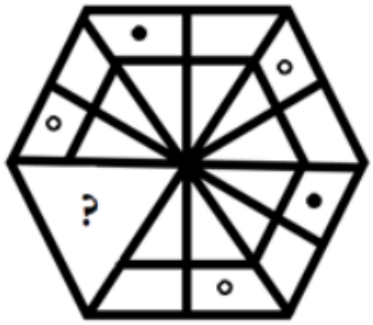
B. 17 - 22

C. 17.5 - 22.5 ✓

D. 18 - 22

Q2 Mathematics

Choose from the alternatives the figure that best completes the pattern given below.



A. 

B. 

C.  ✓

D. 

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Q3 Mathematics

The angle of elevation of the top of a chimney from the top of a tower is 60° and the angle of depression of foot of the chimney from the top of the tower is 30°. If the height of the tower is 40 m, then find the height of the chimney.

A. 160 m ✓

B. 220 m

C. 175 m

D. 192 m

Q4 Mathematics

Simplify: $10 \times 4 - 2 \times (4^2 \div 4) \div 2 \div (1/2) + 9$

A. 41 ✓

B. 35

C. 40

D. 31

Q5 Mathematics

The capacity of a cylindrical tank is 3080 m^3. If the radius of its base is 7 m, find the depth of the tank.

A. 15 m

B. 10 m

C. 25 m

D. 20 m ✓

Q6 Mathematics

Find the number of carpets required to spread along the floor of a room of dimensions 40 m x 24 m, if each carpet measures 6 m x 4 m.

A. 15

B. 12

C. 40 ✓

D. 18

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Q7 Mathematics

Choose the figure that best represents the relationship among the classes given below.
Adult, Singer, Children

A. 

B. 

C. 

D.  ✓

Q8 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

6	9	7
3	5	2
10	7	?
30	28	25

A. 4

B. 5 ✓

C. 6

D. 3

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Q9 Mathematics

The sum of two numbers is 232. Their HCF is 29. Which of these pairs give the possible values of the numbers?

A. 55, 177

B. 22, 137

C. 58, 174

D. 29, 203 ✓

Q10 Mathematics

Find the equation whose roots are $\left(a+\sqrt{b}\right)$ and $\left(a-\sqrt{b}\right)$.

A. $x^2 + 2ax - (a^2 - b) = 0$

B. $x^2 - ax + a^2 - b^2 = 0$

C. $x^2 - 2ax + (a^2 - b) = 0$ ✓

D. $x^2 + ax + a^2 - b^2 = 0$

Q11 Mathematics

Choose the number that is divisible by 11.

A. 1341

B. 3178

C. 325182 ✓

D. 16461

Q12 Mathematics

Two numbers in the ratio 15 : 11 have their HCF to be 13. What is their LCM?

A. 27885

B. 2145 ✓

C. 4290

D. 165

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Q13 Mathematics

A boat takes 12 hours to go downstream and 24 hours to return while covering a certain distance. What is the time taken by the boat to cover the same distance in still water?

A. 16 hours ✓

B. 18 hours

C. 10 hours

D. 15 hours

Q14 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.

2	4	3
3	6	8
6	7	5
20	46	?

A. 45

B. 48

C. 40

D. 43 ✓

Q15 Mathematics

Find the difference between the Simple Interest and Compound Interest on Rs.10000 for 3 years at the rate of 3% per annum.

A. Rs.27.27 ✓

B. Rs.17.82

C. Rs.21.54

D. Rs.16.25

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Q16 Mathematics

Find the value of $\cos 20° \cos 35° \cos 45° \operatorname{cosec} 55° \operatorname{cosec} 70°$.

A. 1

B. $\sqrt{2}$

C. $1/2$

D. $\frac{1}{\sqrt{2}}$ ✓

Q17 Mathematics

What percentage of 5% is 3%?

A. 50%

B. 15%

C. 30%

D. 60% ✓

Q18 Mathematics

Two pipes can fill a tank in 5 and 6 hours respectively. A third pipe will empty it in 12 hours. If all the pipes are opened, then find the time taken to either fill or empty the tank.

A. Filled in 30/17 hours

B. Filled in 60/17 hours ✓

C. Filled in 30/11 hours

D. Emptied in 9/2 hours

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Q19 Mathematics

If $[x^4 + px^3 + qx^2 + rx + s]$ is divisible by $(x^2 - 1)$, $(x - 2)$ and $(x - 3)$, values of p and s are respectively:

A. 5, -6

B. -5, 6

C. -5, -5

D. -5, -6 ✓

Q20 Mathematics

A man bought apples at the rate of 8 apples for Rs.34 and sold them at the rate of 12 apples for Rs.57. How many apples should be sold to earn a net profit of Rs.45?

A. 90 ✓

B. 150

C. 135

D. 100

Q21 Mathematics

What is the ratio of selling price to the cost price of an article, if there is a profit of 12%?

A. 14 : 10

B. 12 : 5

C. 32 : 25

D. 28 : 25 ✓

Q22 Mathematics

Express 603% as a decimal.

A. 6.03 ✓

B. 0.0603

C. 60.3

D. 0.603

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Q23 Mathematics

Find the smallest fraction.

A. 15/19 ✓

B. 7/8

C. 13/16

D. 17/21

Q24 Mathematics

Present ages of P and Q are in the ratio 6 : 7. Q is 4 years elder to P. What is the ratio of their ages after 4 years?

Top

A. 7 : 9

B. 5 : 8

C. 8 : 3

D. 7 : 8 ✓

Q25 Mathematics

Evaluate: $\left(\sqrt{3}-\frac{1}{\sqrt{3}}\right)^2$

A. $2\sqrt{3}$ ✓

B. $3/4$

C. $\frac{4}{\sqrt{3}}$

D. $4/3$

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Q26 Mathematics

The ratio of the number of boys and girls in a school is 3 : 2. If 20% of the boys and 25% of the girls are scholarship holders, what percentage of the students do NOT get scholarship?

A. 70%

B. 78% ✓

C. 56%

D. 80%

Q27 Mathematics

When a positive number is decreased by 4, it is equal to 21 times the reciprocal of the number. Find the number.

A. 9

B. 4

C. 7 ✓

D. 5

Q28 Mathematics

Two pipes P and Q can individually fill a tank in 60 minutes and 40 minutes. If pipe Q alone is open for the first half an hour and then pipe P is also turned on, in how many minutes more will the tank get filled up?

A. 4 minutes

B. 8 minutes

C. 6 minutes ✓

D. 10 minutes

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Q29 Mathematics

Find the missing number in the following series.

71, 65, 59, (...), 47, 41

A. 50

B. 51

C. 53 ✓

D. 52

Q30 Mathematics

P and Q working individually can finish a job in x and y days respectively. P starts the work and they both work on alternate days and the job is finished in 7 days. If Q starts the work and with P working on alternate days, the work gets over in $6\frac{3}{4}$ days. Compare the efficiencies of P and Q.

A. Q's efficiency = 75% of P's efficiency

B. P's efficiency = 75% of Q's efficiency ✓

C. P's efficiency = 55% of Q's efficiency

D. P's efficiency : Q's efficiency = 2 : 3

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

Simplify: $\frac{3}{4}\left[1\frac{1}{6}-\left(1\frac{1}{2}-\frac{1}{3}\right)\right]$

A. 3/14

B. 5/12

C. 7/12

D. 0 ✓

Q2 Mathematics

If two-thirds of one quarter of a number is 32, then find the number.

A. 198

B. 192 ✓

C. 196

D. 202

Q3 Mathematics

A train 360 m long is running at a speed of 45 km/h. In what time will it pass a bridge of 140 m long?

A. 45 seconds

B. 40 seconds ✓

C. 48 seconds

D. 42 seconds

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Q4 Mathematics

Two friends start at the same time from cities P and Q towards cities Q and P respectively. After meeting at some point between P and Q, they reach their destinations in 54 and 24 minutes respectively. In what time did the one who moved from Q to P complete his journey?

A. 36 minutes

B. 72 minutes

C. 60 minutes ✓

D. 48 minutes

Q5 Mathematics

Three pipes P, Q and R can fill a tank in 10, 15 and 20 hours separately. P was opened at 7 AM, Q at 8 AM and R at 9 AM. At what time was the tank completely filled if R can work for only 3 hours at a stretch and needs a 1 hour break?

A. 12:00 PM

B. 12:30 PM ✓

C. 12:12 PM

D. 1:00 PM

Q6 Mathematics

If $\frac{x+a}{x+b} = \frac{x+3a}{x+a+b}$, find the value of 'x'.

A. $a - b$

B. $a + b$

C. $a + 2b$

D. $a - 2b$ ✓

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Q7 Mathematics

A tent is in the form a cylinder and is surmounted by a cone; radius and height of the cylindrical portion are 10 m and 25 m respectively. For the conical part, radius is 10 m and slant height is 15 m. Calculate the amount of canvas required to build the tent allowing 20% extra for folding, stitching etc.

A. 3783.26 m^2

B. 4714.43 m^2

C. 3772.14 m^2

D. 2451.40 m^2 ✓

Q8 Mathematics

The sum and difference of the ages of two brothers are in the ratio 5 : 1. If the product of their ages is 96, then what are their ages?

A. 6, 10

B. 24, 4

C. 6, 16

D. 8, 12 ✓

Q9 Mathematics

Father's age at the time of the birth of his son was the son's present age. If the son's age is 20 years, then find the father's present age.

A. 40 years ✓

B. 39 years

C. 30 years

D. 60 years

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Q10 Mathematics

An article costing Rs.1000 is sold at 5% loss and another article purchased with the money got was again sold at 5% gain. Was there a loss or gain and how much?

A. 2.5% gain

B. Rs.2.5 loss ✓

C. 2% loss

D. Rs.2 gain

Q11 Mathematics

Find the largest number of four digits that is exactly divisible by 27, 18, 15 and 12.

A. 9720 ✓

B. 9700

C. 9710

D. 9730

Q12 Mathematics

Simplify: 7.2 - [3 + 0.5 of (3.1 - 2.3 × 1.02)]

A. 4.223

B. 4.233

C. 3.432

D. 3.823 ✓

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Q13 Mathematics

Find the LCM of set of prime numbers a, b and c.

A. abc ✓

B. $a^2b^2c^2$

C. (1/3) abc

D. a + b + c

Q14 Mathematics

Three times the first of three consecutive odd integers is 3 more than two times the third. Find the third integer.

A. 15 ✓

B. 9

C. 13

D. 11

Q15 Mathematics

Ajay and Vijay can do a piece of work in 70 and 60 days respectively. They start the work together; and after sometime, Ajay leaves. Vijay finished the remaining work in 47 days. When did Ajay quit the work?

A. After 14 days

B. After 10 days

C. After 7 days ✓

D. After 8 days

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Q16 Mathematics

Two pipes can fill a cistern in 12 minutes and 15 minutes. A third pipe can empty it in 6 minutes. The first two are open for 6 minutes and after that the third pipe is also opened. In what time will the cistern be emptied?

A. 57 minutes

B. 48 minutes

C. 42 minutes

D. 54 minutes ✓

Q17 Mathematics

The two hands of a clock will be together between 7 AM and 8 AM at:

A. 40 minutes past 7 AM

B. $38\frac{2}{11}$ minutes past 7 AM ✓

C. 7:45 AM

D. $38\frac{9}{11}$ minutes past 7 AM

Q18 Mathematics

If cost price of 12 books is equal to the selling price of 10 books, then what is the profit percent?

A. 10%

B. 18%

C. 25%

D. 20% ✓

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Q19 Mathematics

Find the number of factors of any prime number.

A. 2 ✓

B. 1

C. 3

D. 0

Q20 Mathematics

One pipe works three times as fast as another. The two pipes together can fill a tank in 26 minutes. By working alone, how long will the slower pipe take to fill the tank?

A. 54 minutes

B. 124 minutes

C. 78 minutes

D. 104 minutes ✓

Q21 Mathematics

Complete the series.

1, 6, 15, 28, 45, (...)

A. 56

B. 57

C. 63

D. 66 ✓

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Q22 Mathematics

Find the missing number in the following series.

81, 63, 49, 35, (...), 15

- A. 25 ✓
- B. 18
- C. 24
- D. 39

Q23 Mathematics

Find the Simple Interest on Rs.5000 at 6.25% per annum from 5th February 2017 to 19th April 2017.

- A. Rs.64
- B. Rs.80
- C. Rs.48.50
- D. Rs.62.50 ✓

Q24 Mathematics

Out of 40 students, 15 are boys. In a test, the mean marks of the class is 75 and the average marks of the girls is 72. What is the average marks of boys?

- A. 82
- B. 74
- C. 76
- D. 80 ✓

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Q25 Mathematics

If (0.29 + 0.25 + 0.01)/0.005 = a%, then find the value of 'a'.

A. 500

B. 11000 ✓

C. 5000

D. 110

Q26 Mathematics

If A and B are complementary angles, then find the value of cos A cos B - sin A sin B.

A. 1

B. 0 ✓

C. 1/2

D. -1

Q27 Mathematics

What is Compound Interest on Rs.32000 at 25% for 2 years?

A. Rs.18000 ✓

B. Rs.15625

C. Rs.12625

D. Rs.16000

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Q28 Mathematics

Find the value of $(100)^{\frac{1}{2}} \times (0.001)^{\frac{1}{3}} - (0.0016)^{\frac{1}{4}}$

A. 4/5 ✓

B. 1/5

C. 2/5

D. 3/80

Q29 Mathematics

Find the missing number in the following series.

3, 6, 11, (...), 27, 38

A. 16

B. 18 ✓

C. 20

D. 22

Q30 Mathematics

Complete the series.

885, 870, 855, 840,(...)

A. 855

B. 835

C. 815

D. 825 ✓

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Mathematics

30 Questions • Answer Key

Q1 Mathematics

Divide Rs.3364 between A and B so that the share of A after 5 years may be equal to the share of B after 7 years at 5% rate compounded annually. Find the share of A.

A. Rs.1564

B. Rs.1864

C. Rs.1764 ✓

D. Rs.1600

Q2 Mathematics

Ten years ago, the ratio of ages of P, Q and R is 1 : 2 : 3. The total age at present is 90. How old is Q now?

A. 25

B. 30 ✓

C. 40

D. 20

Q3 Mathematics

What is the value of 'K', if K, 2K + 1, 2K + 5, 2K + 9 have 30 as the mean?

A. 5

B. 12

C. 20

D. 15 ✓

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Q4 Mathematics

Complete the series.

64, 144, 256, 400, (...)

A. 529

B. 576 ✓

C. 676

D. 484

Q5 Mathematics

Find the value of (1-1/2)(1-1/3)(1-1/4)...(1-1/50).

A. 1/50 ✓

B. 2/49

C. 1/25

D. 1/49

Q6 Mathematics

The cost of rice increases to Rs.30 per kg from Rs.25 per kg. By how much percentage the consumption is reduced to maintain the same expenditure?

Top

A. 16%

B. 10%

C. $8\frac{1}{3}\%$

D. $16\frac{2}{3}\%$ ✓

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Q7 Mathematics

Sum of the angles of a regular polygon is 2160°. How many sides does the polygon have?

A. 18

B. 14 ✓

C. 16

D. 12

Q8 Mathematics

Complete the series.

7, 9, 12, 14, 17, 19, (...)

A. 21

B. 22 ✓

C. 20

D. 18

Q9 Mathematics

Choose the alternative that best replaces the question mark(?) in the given figure.



A. 82

B. 98

C. 110 ✓

D. 71

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Q10 Mathematics

8 men and 12 boys can complete a work in 12 days. In what time will 40 men and 45 boys complete another work three times as much, if 16 men can do as much work in 8 hours as 12 boys can do in 24 hours?

A. 12 days

B. 15 days

C. 10 days

D. 8 days ✓

Q11 Mathematics

Complete the series.

6, 11, 21, 36, 56, (...)

A. 42

B. 51

C. 81 ✓

D. 91

Q12 Mathematics

Find the missing number in the following series.

3, 12, 52, (...), 1596, 11179

A. 265 ✓

B. 234

C. 244

D. 256

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Q13 Mathematics

Difference between 52% and 24% of a number is 112. What is 12.5% of the number?

A. 50 ✓

B. 60

C. 40

D. 65

Q14 Mathematics

If a*b = (a + b) + ab, then find the value of 3*5 - 2*3.

A. 24

B. 12 ✓

C. 10

D. 13

Q15 Mathematics

If 2805 ÷ 2.55 = 1100, then find the value of 280.5 ÷ 25.5.

A. 21

B. 31

C. 11 ✓

D. 41

Q16 Mathematics

What is the age of retirement of a Judge of the Supreme Court?

A. 65 ✓

B. 70

C. 67

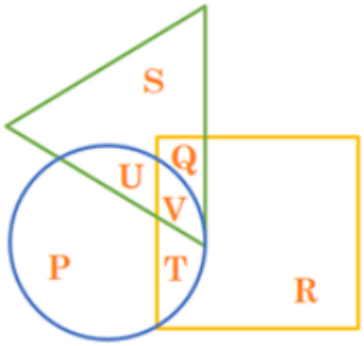
D. 62

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Q17 Mathematics

In the given figure, the circle represents dancers, triangle represents actors, and square represents singers. What does T represent?



A. Dancers who are not singers

B. Dancers who are singers but not actors ✓

C. Dancers who are both singers and actors

D. Dancers who are actors only

Q18 Mathematics

Simplify: $\sin\theta/(1+\cos\theta)$

A. $\sec\theta + \tan\theta$

B. $\operatorname{cosec}\theta + \cot\theta$

C. $\operatorname{cosec}\theta - \cot\theta$ ✓

D. $\sec\theta - \tan\theta$

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Q19 Mathematics

What is the LCM of $(a^3 - b^3)$, $(a^2 - b^2)$, $(a - b)$?

A. $(a^3 - b^3)$

B. $(a - b)$

C. $(a^3 - b^3)(a + b)$ ✓

D. $(a^3 - b^3)(a^2 - b^2)$

Q20 Mathematics

In what time will Rs.1000 become Rs.1331 at 10% per annum compounded annually?

A. 3 years ✓

B. 4 years

C. 2 years

D. 5 years

Q21 Mathematics

If the loss is 15%, then what is the ratio of cost price to the selling price?

A. 20 : 17 ✓

B. 17 : 20

C. 10 : 9

D. 15 : 17

Q22 Mathematics

Find the smallest 3 digit number that is exactly divisible by 12, 15 and 20.

A. 120 ✓

B. 180

C. 240

D. 115

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Q23 Mathematics

Simplify: [5.605 + 0.65 + 0.5] ÷ 5

A. 13.5

B. 2.53

C. 1.351 ✓

D. 1.457

Q24 Mathematics

Find the greatest number that will divide the numbers 400, 435 and 541 leaving remainders 9, 10 and 14 respectively.

A. 19

B. 15

C. 17 ✓

D. 13

Q25 Mathematics

A rectangular sheet has its length equal to twice the breadth. If V_1, V_2 are the volumes of the cylinders formed by folding the sheet along its length and along its breadth, then find the ratio of V_1 to V_2.

A. 1 : 1

B. 2 : 3

C. 2 : 1 ✓

D. 1 : 3

Top

Q26 Mathematics

A train crosses a platform 100 m long in 60 seconds at a speed of 45 km/h. Find the time taken by the train to cross an electric pole.

A. 8 seconds

B. 2 minutes

C. 52 seconds ✓

D. 1 minute

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Q27 Mathematics

There is a leak in a tank that can empty it in 8 hours. There is also a pipe fitted to the tank that can admit 6 litres of water per hour. The pipe is opened, but due to leak, the tank gets emptied in 12 hours. What is the capacity of the tank?

A. 144 litres ✓

B. 120 litres

C. 80 litres

D. 78 litres

Q28 Mathematics

What is the mode for this distribution?

Class interval	1–10	10–20	20–30	30–40	40–50	50–60
Frequency	3	16	26	31	16	8

A. 32.5 ✓

B. 34.5

C. 35

D. 42

Q29 Mathematics

Three pipes A, B and C together can fill a tank in 6 hours. They are open for 2 hours at first. Then C is closed and A and B fill the remaining part in 7 hours. In what time can C alone fill the tank?

A. 11 hours

B. 10 hours

C. 14 hours ✓

D. 12 hours

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Q30 Mathematics

A cart runs at the rate of 4 km/h for the first 10 km and at 2 km/h for the second 10 km. Find the average speed of the cart in km/h.

Top

A. 2.67 km/h ✓

B. 3.33 km/h

C. 2 km/h

D. 5.54 km/h

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Mathematics 30 Questions • Answer Key

Q1 Mathematics

What is the human ear's normal audible range?

A. 20 Hz to 20 kHz ✓

B. 25 Hz to 1500 Hz

C. 40 Hz to 4000 Hz

D. 35 Hz to 3400 Hz

Q2 Mathematics

If two numbers with HCF 9 are in the ratio 5 : 7, what is their difference?

A. 24

B. 8

C. 18 ✓

D. 12

Q3 Mathematics

Find the volume of a cylinder whose radius is one-third the radius of a circle of area 1386 cm^2, and height is twice its radius.

A. 3562 cm^3

B. 3246 cm^3

C. 2156 cm^3 ✓

D. 2584 cm^3

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Q4 Mathematics

Find the ODD one out from the given options.

A. 25 - 81

B. 36 - 100

C. 16 - 64

D. 49 - 169 ✓

Q5 Mathematics

Simplify: 0.05 × 0.02 × 10

A. 0.001

B. 0.01 ✓

C. 1.01

D. 1.1

Q6 Mathematics

Two trains one from station P to Q, the other from station Q to P start simultaneously with speeds 80 km/h and 95 km/h. If they meet after 12 hours, what is the difference between the distances covered by them?

A. 15 km

B. 2100 km

C. 180 km ✓

D. 200 km

Q7 Mathematics

If the sum of two numbers is 13 and the sum of their squares is 97, what is their product?

A. 72

B. 84

C. 110

D. 36 ✓

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Q8 Mathematics

Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. Tap A is open all the time and taps B and C are open for one hour each alternately. In how many hours will the tank be full?

A. 7 hours ✓

B. 6 hours

C. 7.5 hours

D. 8 hours

Q9 Mathematics

Two pipes P and Q can fill a cistern in 18 and 24 minutes respectively. Both pipes are opened, but after some time, the slower pipe is closed. The cistern gets filled in 12 minutes from the start. When is the slower pipe closed?

A. After 9 minutes

B. After 8 minutes ✓

C. After 10 minutes

D. After 6 minutes

Q10 Mathematics

The sum of three consecutive odd numbers is 20 more than the first of these numbers. Find the largest of these numbers.

A. 9

B. 11 ✓

C. 7

D. 13

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Q11 Mathematics

Three pipes P, Q and R can fill a tank in 30 minutes, 20 minutes and 10 minutes. When the tank is empty, all three pipes are opened while they discharge three chemical solutions S, T and U respectively. What is the proportion of solution U in the contents in the tank after 3 minutes?

A. 6/11 ✓

B. 4/11

C. 5/11

D. 7/11

Q12 Mathematics

Complete the series.

4, 7, 12, 19, (...)

A. 26

B. 27

C. 28 ✓

D. 29

Q13 Mathematics

If a chord of length 24 cm is at a distance of 5 cm from centre, then find the radius of the circle.

A. 17 cm

B. 15 cm

C. 25 cm

D. 13 cm ✓

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Q14 Mathematics

Complete the series.

10, 20, 10, 9, 21, 11, 8, 22, 12, (...)

A. 8

B. 11

C. 5

D. 7 ✓

Q15 Mathematics

After deducting a commission of 5%, a television set costs Rs.9595. Find its marked price.

A. Rs.10100 ✓

B. Rs.10000

C. Rs.10500

D. Rs.10075

Q16 Mathematics

Find the number which is as much greater than 55 as it is smaller than 95.

A. 70

B. 75 ✓

C. 45

D. 65

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Q17 Mathematics

Find the angle between the hands at 3:30 p.m.

A. 120°

B. 75° ✓

C. 90°

D. 105°

Q18 Mathematics

The Simple Interest on Rs.'x' for 3 years at 8% equals half the Compound Interest on Rs.4000 at 10% for 2 years. Find 'x'.

A. Rs.1750 ✓

B. Rs.6000

C. Rs.1520

D. Rs.1400

Q19 Mathematics

A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B ?

A. 9

B. 7

C. 10 ✓

D. 8

Q20 Mathematics

Two trains are running in opposite directions with the same speed. If the length of each train is 120 m, and they cross each other in 12 seconds, then find the speed of each train.

A. 18 km/h

B. 72 km/h

C. 36 km/h ✓

D. 10 km/h

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Q21 Mathematics

Simplify: (0.3 × 0.3 + 0.01) × (0.1 × 0.1 + 0.09)

A. 9

B. 1/10

C. 1/100 ✓

D. 1

Q22 Mathematics

If the selling price is Rs.1680 there is a loss of 16%, what should be the marked price on this product, if after allowing discount of 8% there is a profit of 15%?

A. Rs.2000

B. Rs.2500 ✓

C. Rs.2600

D. Rs.2200

Q23 Mathematics

The mean of x , x + 3, x + 5, x + 7, x + 10 is 9. What is the mean of the first 3 observations?

A. 7

B. 6.66 ✓

C. 7.8

D. 7.3

Q24 Mathematics

A sum of Rs.800 becomes Rs.956 in 3 years at some rate of Simple Interest. If the rate is increased by 4%, then what will be the gain in the investment?

A. Rs.1052

B. Rs.96 ✓

C. Rs.72

D. Rs.108

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Q25 Mathematics

If the cost price of 24 pens is equal to the selling price of 18 pens, find the profit per cent.

A. 25%

B. 50%

C. 30%

D. 33.33% ✓

Q26 Mathematics

Simplify: $(\sin^2\theta/\cos\theta) + (\cos^2\theta/\cos\theta)$

A. cosec θ

B. sec θ ✓

C. tan θ

D. cot θ

Q27 Mathematics

The sum of two numbers is 35. Their product is 150. Find the HCF of the sum of their reciprocals and the difference of the reciprocals.

A. 7/30

B. 7/15

C. 5/30

D. 1/30 ✓

Q28 Mathematics

A man, a woman and a boy can do a work individually in 3, 4 and 12 days respectively. How many boys are to be employed to help 3 men and 4 women to finish the work in 1/4 of a day?

A. 12

B. 20

C. 24 ✓

D. 28

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Q29 Mathematics

Complete the series.

2, 5, 9, 19, 37, (...)

A. 76

B. 75 ✓

C. 72

D. 74

Q30 Mathematics

The total age of A and B is 12 years more than the total age of B and C. Who is younger among A and C, and by how many years?

A. A, by 6 years

B. C, by 12 years ✓

C. A, by 12 years

D. C, by 6 years

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