



Q.1 One dozen notebooks quoted at ₹125 are available at 20% discount. How many notebooks can be bought for ₹75?

- Ans
- 1. 6
  - 2. 9
  - 3. 8
  - 4. 10

Question ID : 6549789105  
Status : Answered  
Chosen Option : 2

Q.2 If  $\cos \theta = \frac{4x}{1+4x^2}$ , then what is the value of  $\sin \theta$ ?

- Ans
- 1.  $\frac{1 - 4x^2}{1 + 4x^2}$
  - 2.  $\frac{1 + 4x^2}{1 - 4x^2}$
  - 3.  $\frac{1 - 4x^2}{4x}$
  - 4.  $\frac{1 + 4x^2}{4x^2}$

Question ID : 6549789625  
Status : Answered  
Chosen Option : 1

Q.3 Using algebraic identities, simplify the following expression.

$$\frac{(x^4 + x^2 + 1)}{(x^2 + x + 1)}$$

- Ans
- 1.  $(x^2 + 2x + 1)$
  - 2.  $(x^2 + x + 1)$
  - 3.  $(x^2 - 2x + 1)$
  - 4.  $(x^2 - x + 1)$

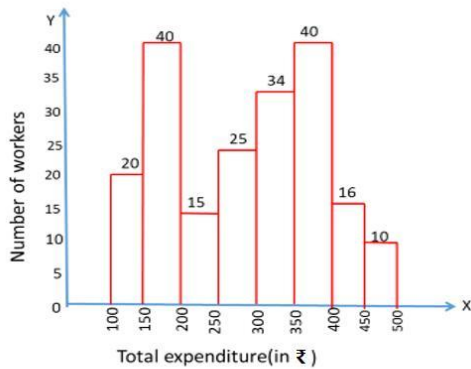
Question ID : 6549789116  
Status : Answered  
Chosen Option : 4

Q.4 The string of a kite is 158 m long and it makes an angle of  $30^\circ$  with the horizontal. What is the height (in m) of the kite?  
Assume there is no slack in the string.

- Ans
- 1. 99
  - 2. 79
  - 3. 100
  - 4. 80

Question ID : 6549789121  
Status : Answered  
Chosen Option : 2

Q.5 The following histogram represents the distribution of household expenditure (in ₹) of 200 manual workers in a city.



The ratio of the number of workers whose household expenditure is less than ₹200 to the number of workers whose household expenditure is ₹300 and above is:

- Ans
- 1. 3 : 5
  - 2. 2 : 5
  - 3. 4 : 5
  - 4. 3 : 4

Question ID : 6549789122  
Status : Answered  
Chosen Option : 1

Q.6 What is the perimeter (in cm) of an equilateral triangle whose height is 3.46 cm? Take  $\sqrt{3} = 1.73$ .

- Ans
- 1. 9
  - 2. 10.4
  - 3. 6
  - 4. 12

Question ID : 6549789617  
Status : Answered  
Chosen Option : 4

Q.7 If  $\left(x + \frac{1}{x}\right)^3 = 27$ , then what is the value of  $\left(x^2 + \frac{1}{x^2}\right)$ ? Given that  $x$  is real.

- Ans
- 1. 11
  - 2. 9
  - 3. 25
  - 4. 7

Question ID : 6549789619  
Status : Answered  
Chosen Option : 4

**Q.8** In a triangle ABC,  $\angle BAC = 90^\circ$  and AD is perpendicular to BC. If AD = 8.4 cm and BD = 4.8 cm, then the length of BC is:

- Ans
- 1. 18 cm
  - 2. 15 cm
  - 3. 18.5 cm
  - 4. 19.5 cm

Question ID : 6549789113  
Status : Answered  
Chosen Option : 4

**Q.9** If A : B = 11 : 7 and B : C = 5 : 19, then what is A : B : C?

- Ans
- 1. 35 : 133 : 55
  - 2. 35 : 55 : 133
  - 3. 55 : 35 : 133
  - 4. 55 : 133 : 35

Question ID : 6549789613  
Status : Answered  
Chosen Option : 3

**Q.10** The inner and outer radii of two concentric circles are 6.7 cm and 9.5 cm, respectively. What is the difference between their circumferences (in cm)? Take  $\pi = \frac{22}{7}$ .

- Ans
- 1. 6.5
  - 2. 17.6
  - 3. 10.4
  - 4. 20.5

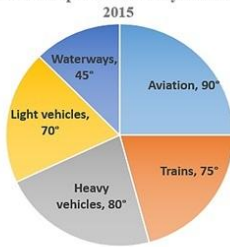
Question ID : 6549789615  
Status : Answered  
Chosen Option : 2

**Q.11** Study the given pie-chart and answer the question that follows.

The pie-chart represents the consumption of fuel (in million litres) by various modes of transport of a country X in the year 2015. The total consumption of fuel by various modes of transport of the country is 800 million litres.

(The data shown here is only for mathematical exercise. They do not represent the actual figures of the country.)

Consumption of fuel (in million litres) by various modes of transport of a country X in the year 2015



To obtain fuel, energy is required to run the machinery, which is to be produced by burning coal.

If 1 tonne of coal is burnt to produce 0.4 million litres of oil, then approximately what is the requirement of coal (in tonnes) for the Trains sector?

- Ans**
- 1. 415
  - 2. 420
  - 3. 418
  - 4. 417

Question ID : 6549789630  
Status : Answered  
Chosen Option : 4

**Q.12** If  $a + b = p$ ,  $ab = q$ , then  $(a^4 + b^4)$  is equal to:

- Ans**
- 1.  $p^4 - 4p^2q + q^2$
  - 2.  $p^4 - 4p^2q^2 + 2q^2$
  - 3.  $p^4 - 4p^2q + 2q^2$
  - 4.  $p^4 - 2p^2q^2 + q^2$

Question ID : 6549789115  
Status : Answered  
Chosen Option : 3

**Q.13** By selling an article for ₹1,170, Elisa suffers as much loss as she would have gained by selling it at a profit of 22%. If she sells it for ₹1,450, then her profit/loss per cent (correct up to one decimal place) is:

- Ans**
- 1. Loss, 3.3
  - 2. Profit, 3.3
  - 3. Profit, 26.2
  - 4. Loss, 26.2

Question ID : 6549789107  
Status : Answered  
Chosen Option : 3

**Q.14** A boat can travel with a speed of 19 km/h in still water. If the speed of the stream is 3 km/h, then what will be the total time (in hours) taken by the boat to go 88 km downstream and 24 km upstream?

- Ans
- 1. 4
  - 2. 5.5
  - 3. 5
  - 4. 4.5

Question ID : 6549789607  
Status : Answered  
Chosen Option : 2

**Q.15** What is the greatest five-digit number that is completely divisible by 8, 15, 16, 21 and 5?

- Ans
- 1. 98320
  - 2. 99120
  - 3. 95760
  - 4. 92680

Question ID : 6549789622  
Status : Answered  
Chosen Option : 2

**Q.16** The value of  $[(232 \div 29 \text{ of } 2) + 77 \times 10] \div 18] - \frac{18 \times 8 \div 4 \text{ of } 3 - 4}{2 \times (8 - 6) + 1 - 2 \times 3 \div 4 \text{ of } \frac{1}{2}}$  is:

- Ans
- 1. 39
  - 2. 47
  - 3. 44
  - 4. 33

Question ID : 6549789118  
Status : Answered  
Chosen Option : 1

**Q.17** If  $(\sin A - \cos A) = 0$ , then what is the value of  $\cot A$ ?

- Ans
- 1. 1
  - 2. 0
  - 3.  $\frac{\pi}{6}$
  - 4.  $\frac{\pi}{4}$

Question ID : 6549789119  
Status : Answered  
Chosen Option : 1

**Q.18** A man invests ₹7,000 at 8% per annum simple interest for 2 years and ₹10,000 at compound interest at the same rate for the same period, compounded annually. What will be the total interest and the total amount (in ₹) respectively, on maturity?

- Ans**
- 1. 19,784 and 2,784
  - 2. 19,748 and 2,874
  - 3. 2,784 and 19,784
  - 4. 2,748 and 19,784

Question ID : 6549789614  
Status : Answered  
Chosen Option : 3

**Q.19** Tap P can fill a cistern in 6 hours and tap Q can empty the full cistern in 10 hours. If both taps P and Q are kept open simultaneously, then in how many hours will the empty cistern be completely full?

- Ans**
- 1. 16
  - 2. 18
  - 3. 12
  - 4. 15

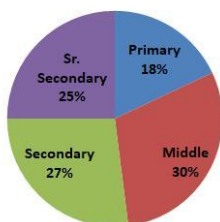
Question ID : 6549789101  
Status : Answered  
Chosen Option : 4

**Q.20** A is 150% of B and B is 40% of C. If  $A + B + C = 20$ , then the value of  $2B + 3C - 4A$  is equal to:

- Ans**
- 1. 16
  - 2. 15
  - 3. 20
  - 4. 14

Question ID : 6549789611  
Status : Answered  
Chosen Option : 4

**Q.21** Students of Primary, Middle, Secondary and Sr. Secondary classes collected donation for a Relief Fund as shown in the pie chart. If the donation collected from Middle classes was ₹6,750, then how much money was collected by the Primary classes?



- Ans**
- 1. ₹4,005
  - 2. ₹4,050
  - 3. ₹3,960
  - 4. ₹4,500

Question ID : 6549789427  
Status : Answered  
Chosen Option : 2

**Q.22** One-quarter of a circular pizza of diameter 28 cm was removed from the whole pizza. What is the perimeter (in cm) of the remaining pizza? (Take  $\pi = \frac{22}{7}$ .)

- Ans
- 1. 88
  - 2. 94
  - 3. 80
  - 4. 66

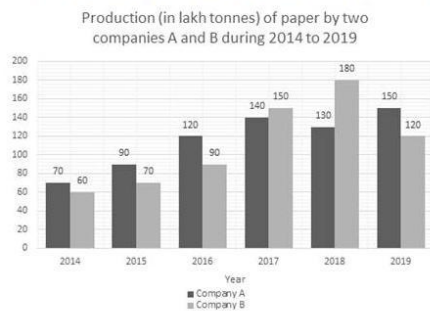
Question ID : 6549789111  
Status : Answered  
Chosen Option : 4

**Q.23** A solid metallic hemisphere of radius 6.3 cm is melted and recast into a right circular cylinder of radius 9 cm. What is the height (in cm, correct to one decimal place) of the cylinder?

- Ans
- 1. 2.5
  - 2. 1.9
  - 3. 2.1
  - 4. 2.7

Question ID : 6549789103  
Status : Answered  
Chosen Option : 3

**Q.24** Study the given graph and answer the question that follows.



The average production of paper by company B in 2014, 2017 and 2018 was  $13\frac{1}{3}\%$  less than the production of paper by company A in the year:

- Ans
- 1. 2016
  - 2. 2017
  - 3. 2019
  - 4. 2018

Question ID : 6549787911  
Status : Answered  
Chosen Option : 3

**Q.25** One-fifth of a journey is covered at a speed of 30 km/h, one-fourth of the journey at a speed of 25 km/h and the rest at 60 km/h. What is the average speed (in km/h, correct to one decimal place) for the whole journey?

- Ans
- 1. 40.5
  - 2. 30.6
  - 3. 38.7
  - 4. 25.4

Question ID : 6549789609  
Status : Answered  
Chosen Option : 3