

• Question No. 1

Let $0 < x < 1$, Then the correct inequality is

Options :

1. $x < \sqrt{x} < x^2$
2. $\sqrt{x} < x < x^2$
3. $x^2 < x < \sqrt{x}$
4. $\sqrt{x} < x^2 < x$
- 5.

Answer : $x^2 < x < \sqrt{x}$

• Question No. 2

Three bells ring at interval of 36 seconds, 40 seconds and 48 seconds respectively. They start ringing together at a particular time. They will ring together after every

Options :

1. 6 minutes
2. 12 minutes
3. 18 minutes
4. 24 minutes
- 5.

Answer : 12 minutes

• Question No. 3

If the sum of the digits of a three digit number is subtracted from that number, then it will always be divisible by

Options :

1. 3 only

2. 9 only
3. Both 3 and 9
4. All of 3, 6 and 9
- 5.

Answer : Both 3 and 9

• Question No. 4

Which of the following is the correct order?

Options :

1. $2/3 < 3/5 < 11/5$
2. $3/5 < 2/3 < 11/5$
3. $11/5 < 3/5 < 2/3$
4. $3/5 < 11/15 < 2/3$
- 5.

Answer : $3/5 < 2/3 < 11/5$

• Question No. 5

The greater of the two numbers whose product is 900 and sum exceeds their difference by 30 is

Options :

1. 60
2. 75
3. 90
4. 100
- 5.

Answer : 60

• Question No. 6

The smallest fraction, which should be added to the sum of $2\frac{1}{2}$, $3\frac{1}{3}$, $4\frac{1}{4}$ and $5\frac{1}{5}$ to make the result a whole number, is

Options :

1. $\frac{13}{60}$
2. $\frac{1}{4}$
3. $\frac{17}{60}$
4. $\frac{43}{60}$
- 5.

Answer : $\frac{43}{60}$

- Question No. 7

Find the cube root of (-13824)

OR

Find the value of $\sqrt[3]{-13824}$

Options :

1. 38
2. - 38
3. 24
4. - 24
- 5.

Answer : - 24

- Question No. 8

The sum of three positive numbers is 18 and their product is 162. If the sum of two numbers is equal to the third then the sum of squares of the numbers is

Options :

1. 120
2. 126
3. 132
4. 138
- 5.

Answer : 126

• Question No. 9

The sum of three consecutive even numbers is 28 more than the average of these three numbers. Then the smallest of these three numbers is

Options :

1. 6
2. 12
3. 14
4. 16
- 5.

Answer : 12

• Question No. 10

In a division sum, the divisor 'd' is 10 times the quotient 'q' and 5 times the remainder 'r'. If $r = 46$, the dividend will be

Options :

1. 5042
2. 5348
3. 5336
4. 4276
- 5.

Answer : 5336

• Question No. 11

A man can do a piece of work in 30 hours. If he works with his son then the same piece of work is finished in 20 hours. If the son works alone he can do the work in

Options :

1. 60 hours
2. 50 hours
3. 25 hours
4. 10 hours
- 5.

Answer : 60 hours

• Question No. 12

A water tap fills a tub in 'p' hours and a sink at the bottom empties it in 'q' hours. If $p < q$ and both tap and sink are open, the tank is filled in 'r' hours; then

A $\frac{1}{r} = \frac{1}{p} + \frac{1}{q}$

B $\frac{1}{r} = \frac{1}{p} - \frac{1}{q}$

C $r = p + q$

D $r = p - q$

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : B

• Question No. 13

John does $\frac{1}{2}$ piece of work in 3 hours, Joe does $\frac{1}{4}$ of the remaining work in 1 hour and George finishes remaining work in 5 hours. How long would it have taken the three working together to do the work?

- A $2\frac{1}{7}$ hours
- B $3\frac{1}{7}$ hours
- C $3\frac{8}{11}$ hours
- D $2\frac{8}{11}$ hours

Options :

- 1. A
- 2. B
- 3. C
- 4. D
- 5.

Answer : D

• Question No. 14

A does $\frac{2}{5}$ of a work in 9 days. Then B joined him and they together completed the remaining work in 6 days. B alone can finish the whole work in

- A $6\frac{12}{13}$ days
- B $8\frac{2}{11}$ days
- C 10 days
- D 18 days

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : D

• Question No. 15

The daily wages of A and B respectively are Rs.3.50 and 2.50. When A finishes a certain work, he gets a total wage of Rs. 63. When B does the same work, he gets a total wage Rs.75. If both of them do it together what is the cost of the work?

Options :

1. Rs. 67.50
2. Rs. 27.50
3. Rs. 60.50
4. Rs. 60.50
- 5.

Answer : Rs. 67.50

• Question No. 16

A man does double the work done by a boy in the same time. The number of days that 3 men and 4 boys will take to finish a work which can be done by 10 men in 8 days is

Options :

1. 4
2. 16
3. $\frac{3}{11}$

4. 4/5

5.

Answer : 16

• Question No. 17

The marked price of an article is 30% higher than the cost price. If a trader sells the articles allowing 10% discount to customer, then the gain percent will be

Options :

1. 17

2. 20

3. 19

4. 15

5.

Answer : 17

• Question No. 18

A merchant marked the price of an article by increasing its production cost by 40%. Now he allows 20% discount and gets a profit of Rs. 48 after selling it. The production cost is

Options :

1. Rs. 320

2. Rs. 360

3. Rs. 400

4. Rs. 440

5.

Answer : Rs. 400

• Question No. 19

A watch dealer pays 10% customs duty on a watch which costs Rs.500 abroad. He desires to make a profit of 20% after giving a discount of 25% to the buyer, The marked price should be

Options :

1. Rs. 950
2. Rs. 800
3. Rs. 880
4. Rs. 660
- 5.

Answer : Rs. 880

- Question No. 20

A shopkeeper allows 20% discount on his advertised price and to make a profit of 25% on his outlay. What is the advertised price (in Rs.) on which he gains Rs.6000?

Options :

1. 36000
2. 37500
3. 39000
4. 42500
- 5.

Answer : 37500

- Question No. 21

Rs.2420 were divided among A, B, C so that A: B=5 : 4 and B : C = 9 : 10 then C gets

Options :

1. 680
2. 800
3. 900

4. 950

5.

Answer : 800

• Question No. 22

49 Kg of blended tea contain Assam and Darjeeling tea in the ratio 5 : 2. Then the quantity of Darjeeling tea is to be added to the mixture to make the ratio of Assam to Darjeeling tea 2 : 1 is

Options :

1. 4.5 kg

2. 3.5 kg

3. 5 kg

4. 6 kg

5.

Answer : 3.5 kg

• Question No. 23

Among 132 examinees of a certain school, the ratio of successful to unsuccessful students is 9 : 2, Had 4 more students passed, then the ratio of successful to unsuccessful students will be

Options :

1. 14:3

2. 14:5

3. 28:3

4. 28:5

5.

Answer : 28:5

• Question No. 24

In a regiment the ratio between the number of officers to soldiers was 3 : 31 before battle. In a battle 6 officers and 22 soldiers were killed and the ratio became 1 : 13, the number of officers in the regiment before battle was

Options :

1. 31
2. 38
3. 21
4. 28
- 5.

Answer : 21

- Question No. 25

Three containers have their volumes in the ratio 3 : 4 : 5. They are full of mixtures of milk and water. The mixtures contain milk and water in the ratio of (4:1), (3 : 1) and (5 : 2) respectively. The contents of all these three containers are poured into a fourth container. The ratio of milk and water in the fourth container is

Options :

1. 4:1
2. 151:48
3. 157:53
4. 5:2
- 5.

Answer : 157:53

- Question No. 26

In what proportion must a grocer mix sugar at Rs.12 a kg and Rs.7 a kg so as to make a mixture worth Rs.8 a kg ?

Options :

1. 7:12
2. 1:4

- 3. 2:3
- 4. 12:7
- 5.

Answer : 1:4

• Question No. 27

Fifteen movie theatres average 600 customers per theatre per day. If six of the theatres close down but the total theatre attendance stays the same, then the average daily attendance per theatre among the remaining theatres is

Options :

- 1. 900
- 2. 1000
- 3. 1100
- 4. 1200
- 5.

Answer : 1000

• Question No. 28

The average weight of A, B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is :

Options :

- 1. 31 kg
- 2. 32 kg
- 3. 29.5kg
- 4. 35 kg
- 5.

Answer : 31 kg

- Question No. 29

The batting average for 40 innings of a cricket player is 50 runs. His highest score exceeds his lowest score by 172 runs, If these two innings are excluded, the average of the remaining 38 innings is 48 runs. The highest score of the player is

Options :

1. 165
2. 170
3. 172
4. 174
- 5.

Answer : 174

- Question No. 30

The average of 7 consecutive numbers is 20. The largest of these numbers is

Options :

1. 20
2. 23
3. 24
4. 26
- 5.

Answer : 23

- Question No. 31

Mukesh has twice as much money as Soham, Soham has 50% more money than Pankaj. If the average money with them is Rs.110, then Mukesh has

Options :

1. 155
2. 160
3. 180
4. 175
- 5.

Answer : 180

• Question No. 32

The average daily income of 7 men, 11 women and 2 boys is Rs.257.50. If the average daily income of the men is Rs.10 more than that of women and the average daily income of the women is Rs.10 more than that of boys, the average daily income of a man is

Options :

1. Rs.277.5
2. Rs.250
3. Rs.265
4. Rs.257
- 5.

Answer : Rs.265

• Question No. 33

The profit on selling an article for Rs.425 is the same as the loss on selling it for Rs.355, then the cost price of the article is

Options :

1. 410
2. 380
3. 400
4. 390
- 5.

Answer : 390

• Question No. 34

A & B jointly made a profit of Rs.1650 and they decided to share it such that $\frac{1}{3}$ of A's profit is equal to $\frac{2}{5}$ of B's profit. Then profit of B is

Options :

1. Rs.700
2. Rs.750
3. Rs.850
4. Rs.800
- 5.

Answer : Rs.750

• Question No. 35

4% of the selling price of an article is equal to 5% of its cost price. Again 20% of the selling price is Rs.120 more than 22% of its cost price. The ratio of cost price & selling price is

Options :

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

Answer : 4:5

• Question No. 36

Due to 25% fall in the rate of eggs, one can buy 2 dozen eggs more than before by investing Rs.162. Then the original rate per dozen of the eggs is

Options :

1. Rs. 22
2. Rs. 24
3. Rs. 27
4. Rs. 30
- 5.

Answer : Rs. 27

• Question No. 37

Last year Mr. A bought two paintings. This year he sold them for Rs, 20,000 each. On one, he made a 25% profit and on the other he had a 25% loss. Then his net profit or loss is

Options :

1. He lost more than Rs.2000
2. He lost less than Rs, 2000
3. He earned more than than Rs, 2000
4. He earned less than Rs.2000
- 5.

Answer : He lost more than Rs.2000

• Question No. 38

A shopkeeper sells rice at 10% profit and uses weight 30% less than the actual measure. His gain percent is

- A $57\frac{2}{3}$ %
- B $57\frac{1}{7}$ %
- C $57\frac{2}{5}$ %
- D $57\frac{3}{7}$ %

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : B

- Question No. 39

What % of a day is 30 minutes ?

Options :

1. 2.83
2. 2.083
3. 2.09
4. 2.075
- 5.

Answer : 2.083

- Question No. 40

A businessman's earning increase by 25% in one year but decreases by 4% in the next. Going by this pattern, after 5 years, his total earnings would be Rs.72000. What is his present earning?

Options :

1. Rs.10000
2. Rs.80000
3. Rs.40000
4. Rs.54000
- 5.

Answer : Rs.40000

• Question No. 41

In an examination 73% of the candidates passed in quantitative aptitude test, 70% passed in General awareness and 64% passed in both. If 6300 failed in both subjects the total number of examinees were

Options :

1. 60000
2. 50000
3. 30000
4. 25000
- 5.

Answer : 30000

• Question No. 42

A man spends 75% of his income. His income increases by 20% and his expenditure also increases by 10%. Find the percentage increase in his savings.

Options :

1. 25%
2. 50%
3. 15%
4. 10%
- 5.

Answer : 50%

• Question No. 43

On river, Q is the mid-point between two points P and R on the same bank of the river. A boat can go from P to Q and back in 12 hours and from P to R in 16 hours 40 min. How long would it take to go from R to P?

Options :

1. $3\frac{1}{3}$ hr
2. 5hr
3. $6\frac{2}{3}$ hr
4. $7\frac{1}{3}$ hr
- 5.

Answer : $7\frac{1}{3}$ hr

• Question No. 44

A car can finish a certain journey in 10 hours at a speed of 42 kmph. In order to cover the same distance in 7 hours, the speed of the car (km/h) must be increased by

Options :

1. 12
2. 15
3. 18
4. 24
- 5.

Answer : 18

• Question No. 45

A man travels 450 km to his home partly by train and partly by car. He takes 8 hrs 40 minutes if he travels 240 km by train and rest by car. He takes 20 minutes more if he travels 180 km by train and the rest by car. The speed of the car in km/hr is

Options :

1. 45
2. 50
3. 60
4. 48
- 5.

Answer : 45

• Question No. 46

A train 'B' speeding with 100 kmph crosses another train C, running in the same direction, in 2 mins. If the length of the train B and C be 150m and 250m respectively, what is the speed of the train C (in km/ph) ?

Options :

1. 75
2. 88
3. 95
4. 110
- 5.

Answer : 88

• Question No. 47

The compound interest on Rs. 30,000 at 7%per annum for n years is Rs. 4347. The value of n is

Options :

1. 3
2. 2
3. 4
4. 5
- 5.

Answer : 2

• Question No. 48

If A borrowed Rs. P at x% and B borrowed Rs. Q (>P) at y% per annum at simple interest at the same time, then the amount of their debts will be equal after

- A $100 \left(\frac{Q-P}{Px-Qy} \right) \text{ years}$
- B $100 \left(\frac{Px-Qy}{Q-P} \right) \text{ years}$
- C $100 \left(\frac{Px-Qy}{P-Q} \right) \text{ years}$
- D $100 \left(\frac{P-Q}{Px-Qy} \right) \text{ years}$

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : A

- Question No. 49

A man invested a sum of money at compound interest. It amounted to Rs. 2420 in 2 years and to Rs. 2662 in 3 years.

Find the sum.

Options :

1. RS.1000
2. RS.2000
3. RS.5080
4. RS.3000
- 5.

Answer : RS.2000

- Question No. 50

If a sum of money becomes 4000 in 2 yrs and 5500 in 4 yrs 6 months at the same rate of simple interest per annum.

Then the rate of simple interest is

- A $21\frac{3}{7}\%$
- B $21\frac{2}{7}\%$
- C $21\frac{1}{7}\%$
- D $21\frac{5}{7}\%$

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : A

• Question No. 51

A hollow cylindrical tube 20 cm long is made of iron and its external and internal diameters are 8 cm and 6 cm respectively. The volume (in cubic cm) of iron used in making the tube is (Take $\pi = \frac{22}{7}$)

Options :

1. 1760
2. 440
3. 220
4. 880
- 5.

Answer : 440

• Question No. 52

If the areas of three adjacent faces of a rectangular box which meet in a corner are 12cm^2 , 15cm^2 and 20cm^2 respectively. Then the volume of the box is

Options :

1. 3600 cm^3
2. 300 cm^3
3. 60 cm^3
4. 180 cm^3
- 5.

Answer : 60 cm^3

• Question No. 53

The ratio between the length and the breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/hour completes one round in 8 minutes, then the area of the park is

Options :

1. 153650 m^2
2. 135600 m^2
3. 153600 m^2
4. 156300 m^2
- 5.

Answer : 153600 m^2

• Question No. 54

If the radius of a right circular cylinder open at both the ends, is decreased by 25% and the height of the cylinder is increased by 25%. Then the curved surface area of the cylinder thus formed

Options :

1. remains unaltered
2. is increased by 25%
3. is increased by 6.25%
4. is decreased by 6.25%

5.

Answer : is decreased by 6.25%

• Question No. 55

A cylindrical pencil of diameter 1.2 cm has one of its end sharpened into a conical shape of height 1.4 cm. The volume of the material removed is

Options :

1. 1.056 cm³
2. 4.224 cm³
3. 10.56 cm³
4. 42.24 cm³
- 5.

Answer : 1.056 cm³

• Question No. 56

A rectangular park 60 m long and 40 m wide has two concrete crossroads running in the middle of the park and rest of the park has been used as a lawn. If the area of the lawn is 2019 then the width of the road is

Options :

1. 3m
2. 5m
3. 6m
4. 2m
- 5.

Answer : 3m

• Question No. 57

Four circles of equal radii are described about the four corners of a square so that each touches two of the other circles. If each side of the square is 140 cm then area of the space enclosed between the circumference of the circle is (take $\pi = 22/7$)

Options :

1. 4200 cm²
2. 2100 cm²
3. 7000 cm²
4. 2800 cm²
- 5.

Answer : 4200 cm²

- Question No. 58

The amount of concrete required to build a concrete cylindrical pillar whose base has a perimeter 8.8 metre and curved surface area 17.6 sq. metre, is (Take $\pi = 22/7$)

Options :

1. 8.325 m³
2. 9.725 m³
3. 10.5 m³
4. 12.32 m³
- 5.

Answer : 12.32 m³

- Question No. 59

A hemispherical bowl of internal radius 9 cm, contains a liquid. This liquid is to be filled into small cylindrical bottles of diameter 3 cm and height 4 cm. Then the number of bottles necessary to empty the bowl is

Options :

1. 18

- 2. 45
- 3. 27
- 4. 54
- 5.

Answer : 54

• Question No. 60

A rectangular water tank is $80\text{ m} \times 40\text{ m}$. Water flows into it through a pipe of 40 sq.cm at the opening at a speed of 10 km/hr . The water level will rise in the tank in half an hour is

Options :

- 1. $3/2\text{ cm}$
- 2. $4/9\text{ cm}$
- 3. $5/9\text{ cm}$
- 4. $5/8\text{ cm}$
- 5.

Answer : $5/8\text{ cm}$

• Question No. 61

A square and a regular hexagon are drawn such that all the vertices of the square and the hexagon are on circle of radius $r\text{ cm}$. The ratio of area of the square and the hexagon is

Options :

- 1. $3 : 4$
- 2. $4 : 3\sqrt{3}$
- 3. $\sqrt{2} : \sqrt{3}$
- 4. $1 : \sqrt{2}$
- 5.

Answer : $4 : 3\sqrt{3}$

• Question No. 62

A solid cylinder has the total surface area 231 sq.cm. If its curved surface area is of the total surface area, then the volume of the cylinder is

Options :

1. 154 cu.cm
2. 208 cu.cm
3. 269.5 cu.cm
4. 108.5 cu.cm
- 5.

Answer : 269.5 cu.cm

• Question No. 63

The lateral surface area of frustum of a right circular cone, if the area of its base is and the diameter of circular upper surface is 4 cm and slant height 6 cm, will be

Options :

1. 30π cm²
2. 48π cm²
3. 36π cm²
4. 60π cm²
- 5.

Answer : 36π cm²

• Question No. 64

The diameter of a sphere is twice the diameter of another sphere, The surface area of the first sphere is equal to the volume of the second sphere, The magnitude of the radius of the first sphere is

Options :

1. 17
2. 24
3. 16
4. 48
- 5.

Answer : 24

• Question No. 65

A right circular cylinder having diameter 21 cm & height 38 cm is full of ice cream. The ice cream is to be filled in cones of height 12 cm and diameter 7 cm having a hemispherical shape on the top. The number of such cones to be filled with ice cream is

Options :

1. 54
2. 44
3. 36
4. 24
- 5.

Answer : 54

• Question No. 66

The Simplified value of $\left(1 - \frac{2xy}{x^2+y^2}\right) \div \left(\frac{x^2-y^2}{x-y} - 3xy\right)$ is

- A** $\frac{1}{x^2-y^2}$
- B** $\frac{1}{x^2+y^2}$
- C** $\frac{1}{x-y}$
- D** $\frac{1}{x+y}$

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : B

- Question No. 67

If $a + b + c = 0$ then the value of $(1/(a+b)(b+c)) + (1/(b+c)(c+a)) + (1/(c+a)(a+b))$ is

Options :

1. 0
2. 1
3. 3
4. 2
- 5.

Answer : 0

- Question No. 68

If $x^2 + y^2 + 2x + 1 = 0$, therefore the value of $x^{31} + y^{35}$ is

Options :

1. -1
2. 0
3. 1
4. 2
- 5.

Answer : -1

- Question No. 69

If $X = (\sqrt{5} + 1) / (\sqrt{5} - 1)$ and $y = (\sqrt{5} - 1) / (\sqrt{5} + 1)$ then the value of $(x^2 + xy + y^2) / (x^2 - xy + y^2)$ is

Options :

1. $3/4$
2. $4/3$
3. $3/5$
4. $5/3$
- 5.

Answer : $4/3$

- Question No. 70

If $(x - 1/x)^2 = 3$, then the value of $x^6 + 1/x^6$ equals

Options :

1. 90
2. 100
3. 110
4. 120
- 5.

Answer : 110

- Question No. 71

If $x^4 + 2x^3 + ax^2 + bx + 9$ is a perfect square, where a and b are positive real numbers, then the value of a and b are

Options :

1. $a = 5, b = 6$
2. $a = 6, b = 7$
3. $a = 7, b = 6$

4. $a = 7, b = 8$

5.

Answer : $a = 7, b = 6$

- Question No. 72

If $a + b^2 + c^2 = 16, x^2 + y^2 + z^2 = 25$ and $ax + by + cz = 20$, then the value of $(a+b+c)/(x+y+z)$

Options :

1. $3/5$

2. $5/3$

3. $4/5$

4. $5/4$

5.

Answer : $4/5$

- Question No. 73

The value of x which satisfies the equation $(x+a^2+2c^2)/(b+c) + (x+b^2+2a^2)/(c+a) + (x+c+2b^2)/(a+b) = 0$ is

A $(a^2 + b^2 + c^2)$

B $-(a^2 + b^2 + c^2)$

C $(a^2 + 2b^2 + c^2)$

D $-(a^2 + b^2 + 2c^2)$

Options :

1. A

2. B

3. C

4. D

5.

Answer : B

- Question No. 74

If $a^3 = 117 + b^3$ and $a = 3 + b$, then the value of $a + b$ is:

Options :

1. ± 7
2. ± 49
3. ± 13
4. 0
- 5.

Answer : ± 7

- Question No. 75

If $a + 1/a = -2$ then the value of $a^{1000} + a^{-1000}$ is

Options :

1. 2
2. 0
3. 1
4. $1/2$
- 5.

Answer : 2

- Question No. 76

ΔABC is similar to ΔDEF . If area of ΔABC is 9 sq.cm and area of ΔDEF is 16 sq.cm and $BC = 2.1$ cm. Then the length of EF will be

Options :

1. 5.6 cm
2. 2.8 cm
3. 3.7 cm
4. 1.4 cm
5. none of these

Answer : 2.8 cm

• Question No. 77

A chord of a circle is equal to its radius. The angle subtended by this chord at a point on the circumference is

Options :

1. 80°
2. 60°
3. 30°
4. 90°
- 5.

Answer : 30°

• Question No. 78

Let two chords AB and AC of the larger circle touch the smaller circle having same centre at X and Y. Then $XY = ?$

Options :

1. BC
2. $\frac{1}{2} BC$
3. $\frac{1}{3} BC$
4. $\frac{1}{4} BC$
- 5.

Answer : $\frac{1}{2} BC$

- Question No. 79

Let G be the centroid of the equilateral triangle ABC of perimeter 24 cm. Then the length of AG is

Options :

1. $2\sqrt{3}$ cm
2. $8/\sqrt{3}$ cm
3. $8\sqrt{3}$ cm
4. $4\sqrt{3}$ cm
- 5.

Answer : $8/\sqrt{3}$ cm

- Question No. 80

A and B are the centres of two circles with radii 11 cm and 6 cm respectively. A common tangent touches these circles at P & Q respectively. If AB = 13 cm, then the length of PQ is

Options :

1. 13 cm
2. 17 cm
3. 8.5 cm
4. 12 cm
- 5.

Answer : 12 cm

- Question No. 81

ABC is an isosceles triangle inscribed in a circle. If $AB = AC = 12\sqrt{5}$ and $BC = 24$ cm then radius of circle is

Options :

1. 10 cm
2. 15 cm

3. 12 cm

4. 14 cm

5.

Answer : 15 cm

• Question No. 82

ABC is an isosceles triangle where $AB = AC$ which is circumscribed about a circle. If P is the point where the circle touches the side BC, then which of the following is true?

Options :

1. $BP = PC$

2. $BP > PC$

3. $BP < PC$

4. $BP = 1/2PC$

5.

Answer : $BP = PC$

• Question No. 83

If D and E are the mid points of AB and AC respectively of ΔABC , then the ratio of the areas of ADE and BCED is ?

Options :

1. 1 : 2

2. 1 : 4

3. 2 : 3

4. 1 : 3

5.

Answer : 1 : 3

• Question No. 84

O is the circum centre of the isosceles ΔABC . Given that $AB = AC = 5$ cm and $BC = 6$ cm. The radius of the circle is

Options :

1. 3.015 cm
2. 3.205 cm
3. 3.025 cm
4. 3.125 cm
- 5.

Answer : 3.125 cm

- Question No. 85

B_1 is a point on the side AC of ΔABC and B_1B is joined. line is drawn through A parallel to B_1B meeting BC at A_1 and another line is drawn through C parallel to B_1B meeting AB produced at C_1 . Then

Options :

1. $1/CC_1 - 1/AA_1 = 1/BB_1$
2. $1/CC_1 + 1/AA_1 = 1/BB_1$
3. $1/BB_1 - 1/AA_1 = 1/CC_1$
4. $1/AA_1 - 1/CC_1 = 1/BB_1$
- 5.

Answer : $1/CC_1 + 1/AA_1 = 1/BB_1$

- Question No. 86

The value of the expression $(1 + \sec 22^\circ + \cot 68^\circ)(1 - \operatorname{cosec} 22^\circ + \tan 68^\circ)$ is

Options :

1. 0
2. 1
3. -1
4. 2

5.

Answer : 2

- Question No. 87

If $x \sin^3 \theta + y \cos^3 \theta = \sin \theta \cos \theta$ and $x \sin \theta - y \cos \theta = 0$, then the value of $\frac{y^2}{x^2}$ equals

Options :

1. 1
2. $\frac{1}{2}$
3. $\frac{3}{2}$
4. 2
- 5.

Answer : 1

- Question No. 88

If $\sec \theta + \tan \theta = m (> 1)$, then the value of $\sin \theta$ is (0°

Options :

1. $\frac{1}{\sqrt{3}}$
2. $\frac{1}{\sqrt{2}}$
3. $\sqrt{2}$
4. $2\sqrt{2}$
- 5.

Answer : $\frac{1}{\sqrt{2}}$

- Question No. 89

If $(a^2 - b^2)\sin \theta + 2ab \cos \theta = a^2 + b^2$, then $\tan \theta =$

Options :

1. $2ab / (a^2 - b^2)$
2. $(a^2 - b^2) / 2ab$
3. $ab / (a^2 - b^2)$
4. $(a^2 - b^2) / ab$
- 5.

Answer : $(a^2 - b^2) / 2ab$

• Question No. 90

A person from the top of a hill observes a vehicle moving towards him at a uniform speed. It takes 10 minutes for the angle of depression to change from 45° to 60° . After this the time required by the vehicle to reach the bottom of the hill is

Options :

1. 12 min 20 sec
2. 13 min
3. 13 min 40 sec
4. 13 min 40 sec
- 5.

Answer : 13 min 40 sec

• Question No. 91

If $2y \cos \theta = x \sin \theta$ and $2x \sec \theta - y \operatorname{cosec} \theta = 3$, then the value of $\frac{x^2}{y^2}$ is

Options :

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 4

- Question No. 92

From the top of a cliff 100 meter high, the angles of depression of the top and bottom of a tower are 45° and 60° respectively. The height of the tower is

- A** $\frac{100}{3} (3 - \sqrt{3})$ metre
- B** $\frac{100}{3} (\sqrt{3} - 1)$ metre
- C** $\frac{100}{3} (2\sqrt{3} - 1)$ metre
- D** $\frac{100}{3} (\sqrt{3} - \sqrt{2})$ metre

Options :

1. A
2. B
3. C
4. D
- 5.

Answer : A

- Question No. 93

A vertical tower stands on a horizontal plane and is surmounted by a vertical flag staff of height h . At a point on the plane, the angle of elevation of the bottom of the flag staff is α and that of the top of the flag staff is β . Then the height of the tower is

Options :

1. $h \tan \alpha$
2. $h \tan \alpha / (\tan \alpha - \tan \beta)$
3. $h \tan \beta / (\tan \alpha - \tan \beta)$
4. None of these

5.

Answer : $h \tan \theta / (\tan \theta - \tan \phi)$

• Question No. 94

A man on the top of a tower, standing on the sea-shore, finds that a boat coming towards him takes 10 minutes for the angle of depression to change from 30° to 60° . How soon the boat reach the sea-shore?

Options :

1. 5 minutes
2. 7 minutes
3. 10 minutes
4. 15 minutes
- 5.

Answer : 5 minutes

• Question No. 95

The expression of $(\cot \theta + \operatorname{cosec} \theta - 1) / (\cot \theta - \operatorname{cosec} \theta + 1)$ is equal to

- A** $\frac{1 + \cos \theta}{\sin \theta}$
- B** $\frac{1 - \cos \theta}{\sin \theta}$
- C** $\frac{\cot \theta + 1}{\operatorname{cosec} \theta}$
- D** $\frac{\cot \theta - 1}{\operatorname{cosec} \theta}$

Options :

1. A
2. B
3. C
4. D

5.

Answer : A

Direction:

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question



• Question No. 96

What is the total monthly income of the family ?

Options :

1. Rs. 8025
2. Rs. 8250
3. Rs. 8520
4. Rs. 8520
5. none of these

Answer : Rs. 8250

Direction:

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question



- Question No. 97

What percent of the total income does the family save

Options :

1. 15%
2. 50%
3. 20%
4. 25%
5. none of these

Answer : 15%

Direction:

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question



- Question No. 98

What is the ratio of expenses on food and miscellaneous ?

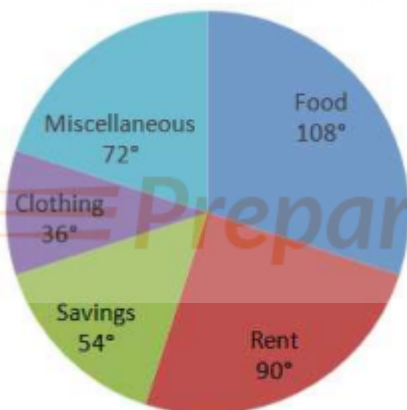
Options :

1. 3 : 4
2. 2 : 3
3. 3 : 2
4. 2 : 5
5. none of these

Answer : 3 : 2

Direction:

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question



- Question No. 99

What is the average of expense son clothing and rent?

Options :

1. Rs. 1443.75
2. Rs. 1344.57
3. Rs. 1574.34

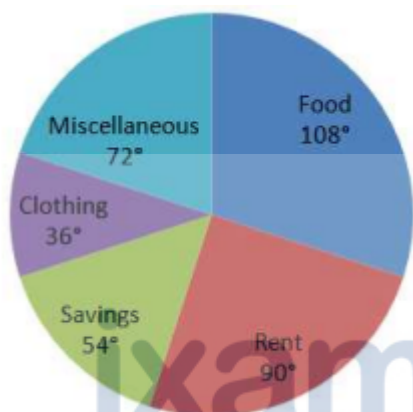
4. Rs. 1734.45

5. none of these

Answer : Rs. 1443.75

Direction:

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question



- Question No. 100

The ratio of average of expenses on food, clothing and miscellaneous items to the average of expenses on savings and rent is

Options :

1. 3 : 2

2. 1 : 3

3. 2 : 1

4. 1 : 1

5. none of these

Answer : 1 : 1

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