



Ratio and Proportion Questions For SSC CGL Set-3 PDF

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Instructions

For the following questions answer them individually

Question 1

The sum of the series $(1 + 0.6 + 0.06 + 0.006 + 0.0006 + \dots)$ is

- A $1\frac{2}{3}$
- B $1\frac{1}{3}$
- C $2\frac{1}{3}$
- D $2\frac{2}{3}$

Answer: A

Explanation:

Given:

Summation of numbers $(1 + 0.6 + 0.06 + \dots)$

as we can see that the sequence 0.6, 0.06, 0.006 is making infinite g.p. with common ratio of 0.1

as we know summation of an infinite g.p. is $\frac{a}{1-r}$ (where a is first term and r is common ratio)

hence summation will be $\frac{0.6}{1-0.1} = \frac{2}{3}$

Now the total sum will be $1 + \frac{2}{3} = 1\frac{2}{3}$

Question 2

If the ratio of cost price and selling price of an article be as 10:11, the percentage of profit is

- A 8
- B 10
- C 11
- D 15

Answer: B

Explanation:

Let the cost price be $10x$ and selling price be $11x$

$$\text{Percentage Profit} = \frac{11x - 10x}{10x} \times 100 = 10$$

Question 3

A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book is

- A 45:56
- B 45:51
- C 47:56
- D 47:51

Answer: A

Explanation:

Given: Profit = 12%

Discount on printed price = 10%

Let's say cost price is x and printed price is y

hence sold price will be $x + \frac{12x}{100}$ and $y - \frac{10y}{100}$

Both should be equal:

$$\text{hence } x + \frac{12x}{100} = y - \frac{10y}{100}$$

$$x = \frac{45}{56}y$$

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Question 4

Two natural numbers are in the ratio 3:5 and their product is 2160. The smaller of the numbers is

- A 36
- B 24
- C 18
- D 12

Answer: A

Explanation:

Given:

Ratio of two numbers = 3:5

Hence we can say first number is $3x$ and second number is $5x$

Product of two numbers is = 2160

$$\text{or } 15x^2 = 2160$$

$$\text{or } x = 12$$

hence numbers will be 30 and 60

Question 5

$$\frac{\sqrt{3+x} + \sqrt{3-x}}{\sqrt{3+x} - \sqrt{3-x}} = 2 \text{ then } x \text{ is equal to}$$

- A 5/12
- B 12/5
- C 5/7
- D 7/5

Answer: B

Explanation:

Let's say $\sqrt{3+x} = a$

and $\sqrt{3-x} = b$

$$\text{hence } \frac{a+b}{a-b} = 2$$

Now let's say $\frac{a}{b} = y$

According to ratio proportionate rule $\frac{a+b}{a-b} = \frac{y+1}{y-1}$

After putting value and solving for y , its value will be 3

$$\text{hence } \frac{a}{b} = 3$$

now putting $a = \sqrt{3+x}$ and $\sqrt{3-x} = b$ and solving for x

$$\text{we will get } x = \frac{12}{5}$$

Question 6

If Rs. 1000 is divided between A and B in the ratio 3:2, then A will receive

- A Rs. 400
- B Rs. 500
- C Rs. 600
- D Rs. 800

Answer: C

Explanation:

Given: ratio of A and B is 3:2 and total money to be divided 1000

let's say A received $3x$ and B received $2x$

hence $3x + 2x = 1000$

or $x = 200$

hence A will receive 600

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Question 7

What must be added to each term of the ratio 7:11, so as to make it equal to 3:4 ?

- A 8
- B 7.5
- C 6.5
- D 5

Answer: D

Explanation:

Given: Terms are in ratio 7:11

let's say first term $7x$ and second term $11x$

adding y to each term, it will be $7x + y$ and $11x + y$

and its ratio will be 3:4

hence $7x + y : 11x + y = 3:4$

on solving above equation we get $5x = y$

hence adding number should be a multiple of 5.

answer will be (D)

Question 8

If the circumference of a circle is decreased by 50% then the percentage of decrease in its area is:

- A 25
- B 50
- C 60
- D 75

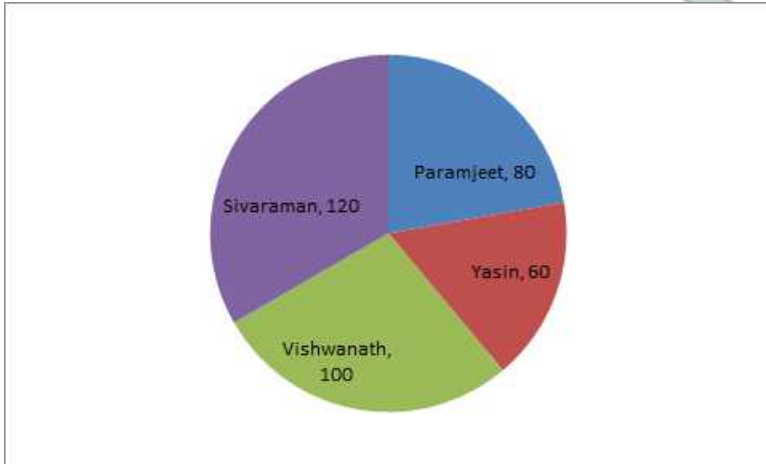
Answer: D

Explanation:

As we know circumference of a circle will be directly proportional to its radius r_1
hence when it got half its radius will also get half
now area of a circle is directly proportional to square of its radius
hence when its radius gets half its area gets $\frac{1}{4}$ th of its value
let us say area was A
after decrement it will be $\frac{A}{4}$
Decrement is of $\frac{3A}{4}$ which is 75% of its original value.

Instructions

Directions :The pie chart, given here, represents the number of valid votes obtained by four students who contested election for school leadership. The total number of valid votes polled was 720. Observe the chart and answer the questions based on it.



Number represented in pie-chart are in degrees.

Question 9

What was the minimum number of votes obtained by any candidate ?

- A 100
- B 110
- C 120
- D 130

Answer: C

Explanation:

Numbers of votes will be proportional to degree of angles in pie chart
hence minimum angle is representing the minimum distribution
so yasin will be having minimum number of votes which will be $\frac{60}{360} \times 720 = 120$

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Question 10

By how many votes did the winner defeat his nearest rival ?

- A 40
- B 45
- C 48
- D 50

Answer: A

Explanation:

As we know the number of votes will be directly proportional to the distribution
Shivaraman has the maximum no. of votes which will be $\frac{120}{360} \times 720 = 240$
and secondly viswanath has number of votes $\frac{100}{360} \times 720 = 200$
Hence difference will be 40

Instructions

For the following questions answer them individually

Question 11

Two number are in the ratio 7:11. If 7 is added to each of the numbers, the ratio becomes 2:3. The smaller number is

- A 39
- B 49
- C 66
- D 77

Answer: B

Explanation:

Let's say numbers are $7x$ and $11x$
adding 7 to each of them
hence $\frac{7x+7}{11x+7} = \frac{2}{3}$
or $x = 7$
smaller digit will be 49

Question 12

If an article is sold at 200% profit, then the ratio of its cost price to its selling price will be:

- A 1:2
- B 2:1
- C 1:3
- D 3:1

Answer: C

Explanation:

As we know cost price + profit = selling price
let's say cost price is x
as profit is 200% on cost price it will be $2x$
hence selling price will be $3x$ and ratio of cost price to selling price will be 1:3

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Question 13

The ratio of milk and water in mixtures of four containers are 5:3, 2:1, 3:2 and 7:4 respectively. In which container is the quantity of milk, relative to water, minimum?

- A First

- B Second
- C Third
- D Fourth

Answer: C

Explanation:

In first container quantity of milk relative to water is $\frac{5}{3} \times 100 = 166.65\%$

In second container quantity of milk relative to water is $\frac{2}{1} \times 100 = 200\%$

In third container quantity of milk relative to water is $\frac{2}{1} \times 100 = 150\%$

In fourth container quantity of milk relative to water is $\frac{7}{4} \times 100 = 175\%$

hence third container has least ratio

Question 14

Two numbers are in the ratio 1:3. If their sum is 240, then their difference is:

- A 120
- B 108
- C 100
- D 96

Answer: A

Explanation:

let's say one number is x and another is $3x$

summation will be $4x = 240$

$$x = 60$$

hence number will be 60 and 180

and difference will be 120.

Question 15

The ratio of income and expenditure of a person is 11:10. If he saves IRS. 9,000 per annum. his monthly income is:

- A Rs. 8,000
- B Rs. 8,800
- C Rs. 8,500
- D Rs. 8,250

Answer: D

Explanation:

let's say income is $11x$ and expenditure is $10x$ hence saving will be x

so when saving is x , annual income is $11x$

now when saving is 9000, annual income will be 99000

and monthly income will be 8,250

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