



Ratio and Proportion Questions for IBPS-SO PDF

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Instructions

For the following questions answer them individually

Question 1

Six years ago Jagannath was twice as old as Badri if the ratio of their present age is 9:5 respectively .What is the difference between their present ages?

- A 24
- B 30
- C 50
- D Cannot determined
- E None of these

Answer: A

Explanation:

Let present age of Jagannath = $9x$ years

=> Badri's present age = $5x$ years

According to ques, => $(9x - 6) = 2 \times (5x - 6)$

=> $9x - 6 = 10x - 12$

=> $10x - 9x = 12 - 6$

=> $x = 6$

∴ Difference between their present ages = $9x - 5x = 4x$

= $4 \times 6 = 24$

=> Ans - (A)

Question 2

An amount of Rs 1,25,000 is to be distributed among the Sudhir,Soni,Shakunthala in the respective ratio of 2 : 3 : 5.What will be the difference between Soni's and Sudhir's Share?

- A 25000
- B 12500
- C 18750
- D 2500
- E None of these

Answer: B

Explanation:

Let amount received by Sudhir,Soni and Shakunthala be $2x$, $3x$ and $5x$ respectively.

=> Total amount = $(2x + 3x + 5x) = 125,000$

=> $10x = 125,000$

=> $x = \frac{125,000}{10} = 12500$

∴ Difference between Soni's and Sudhir's Share = $3x - 2x = x = Rs. 12,500$

=> Ans - (B)

Question 3

An amount of Rs 1,25,000 is to be distributed among the Sudhir, Soni, Shakunthala in the respective ratio of 2 : 3 : 5. What will be the difference between Soni's and Sudhir's Share?

- A 25000
- B 12500
- C 18750
- D 2500
- E None of these

Answer: B

Explanation:

Let amount received by Sudhir, Soni and Shakunthala be $2x$, $3x$ and $5x$ respectively.

$$\Rightarrow \text{Total amount} = (2x + 3x + 5x) = 125,000$$

$$\Rightarrow 10x = 125,000$$

$$\Rightarrow x = \frac{125,000}{10} = 12500$$

$$\therefore \text{Difference between Soni's and Sudhir's Share} = 3x - 2x = x = \text{Rs. } 12,500$$

\Rightarrow Ans - (B)

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Question 4

The perimeter of a rectangular field is 240 metre. The ratio between the length and breadth of the field is 8:7. Find the area of the field.

- A 3854 sq. m.
- B 3584 sq. m.
- C 3684 sq. m.
- D 3666 sq. m.
- E None of these

Answer: B

Explanation:

Let the length and breadth of the rectangular field be $8x$ m and $7x$ m respectively.

$$\text{Perimeter} = 2(8x + 7x) = 240$$

$$\Rightarrow 15x = \frac{240}{2} = 120$$

$$\Rightarrow x = \frac{120}{15} = 8$$

$$\therefore \text{Area of field} = 8x \times 7x = 56x^2$$

$$= 56 \times (8)^2 = 3584m^2$$

Question 5

The respective ratio between the monthly salaries of Rene and Som is 5 : 3. Out of her monthly salary Rene gives $\frac{1}{6}$ th as rent, $\frac{1}{5}$ th to her mother, 30% as her education loan and keeps 25% aside for miscellaneous expenditure. Remaining Rs. 5000 she keeps as savings. What is Som's monthly salary?

- A Rs. 21000
- B Rs. 24000
- C Rs. 27000
- D Rs. 36000
- E Rs. 18000

Answer: D

Explanation:

Let monthly salary of Rene = $Rs.1500x$

=> Monthly salary of Som = $Rs.900x$

Amount given as rent by Rene = $\frac{1}{6} \times 1500x = 250x$

Amount given by Rene to her mother = $\frac{1}{5} \times 1500x = 300x$

Amount for loan = $\frac{30}{100} \times 1500x = 450x$

Amount kept aside = $\frac{25}{100} \times 1500x = 375x$

=> Amount left = $1500x - (250x + 300x + 450x + 375x) = 5000$

=> $1500x - 1375x = 125x = 5000$

=> $x = \frac{5000}{125} = 40$

∴ Som's salary = $900 \times 40 = Rs.36,000$

Question 6

A and B started a business with initial investments in the respective ratio of 18 : 7. After four months from the start of the business, A invested Rs. 2000 more and B invested Rs. 7000 more. At the end of one year, if the profit was distributed among them in the ratio of 2 : 1 respectively, what was the total initial investment with which A and B started the business?

- A Rs. 50,000
- B Rs. 25,000
- C Rs. 1,50,000
- D Rs. 75,000
- E Rs. 1,25,000

Answer: A

Explanation:

Let amount invested by A = $Rs.18x$

=> Amount invested by B = $Rs.7x$

After four months from the start of the business, A invested Rs. 2000 more and B invested Rs. 7000 more

Thus, ratio of profit received by A : B

$$= [(18x \times 4) + (18x + 2000) \times 8] : [(7x \times 4) + (7x + 7000) \times 8]$$

$$= (72x + 144x + 16000) : (28x + 56x + 56000)$$

$$= (216x + 16000) : (84x + 56000) = (54x + 4000) : (21x + 14000)$$

$$\text{Acc. to ques, } \Rightarrow \frac{54x+4000}{21x+14000} = \frac{2}{1}$$

$$\Rightarrow 54x + 4000 = 42x + 28000$$

$$\Rightarrow 54x - 42x = 12x = 28000 - 4000 = 24000$$

$$\Rightarrow x = \frac{24000}{12} = 2000$$

$$\therefore \text{Total initial investment} = 18x + 7x = 25x$$

$$= 25 \times 2000 = \text{Rs.}50,000$$

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Question 7

A vessel contains 100 litres mixture of milk and water in the respective ratio of 22 : 3. 40 litres of the mixture is taken out from the vessel and 4.8 litres of pure milk and pure water each is added to the mixture. By what percent is the quantity of water in the final mixture less than the quantity of milk?

A $78\frac{1}{2}$

B $79\frac{1}{6}$

C $72\frac{5}{6}$

D 76

E $77\frac{1}{2}$

Answer: B

Explanation:

$$\text{Quantity of milk in vessel} = \frac{22}{25} \times 100 = 88 \text{ litres}$$

$$\Rightarrow \text{Quantity of water} = 100 - 88 = 12 \text{ litres}$$

$$40 \text{ litres of the mixture is taken out, i.e., } \frac{40}{100} = \left(\frac{2}{5}\right)^{\text{th}}$$

$$\Rightarrow \text{Milk left} = 88 - \frac{2}{5} \times 88 = 52.8 \text{ litres}$$

$$\text{Water left} = 12 - \frac{2}{5} \times 12 = 7.2 \text{ litres}$$

Now, 4.8 litres of milk and water are added.

$$\Rightarrow \text{Quantity of milk in the vessel} = 52.8 + 4.8 = 57.6 \text{ litres}$$

$$\text{Quantity of water in the vessel} = 7.2 + 4.8 = 12 \text{ litres}$$

$$\therefore \text{Required \%} = \frac{57.6-12}{57.6} \times 100$$

$$= \frac{45.6}{57.6} = 79\frac{1}{6}\%$$

Question 8

Jar A has 60 litres of mixture of milk and water in the respective ratio of 2 : 1. Jar B which had 40 litres of mixture of milk and water was emptied into jar A, as a result in jar A, the respective ratio of milk and water became 13 : 7. What was the quantity of water in jar B?

A 8 litres

- B 15 litres
- C 22 litres
- D 7 litres
- E 1 litre

Answer: B

Explanation:

Jar A has 60 litres of mixture of milk and water in the respective ratio of 2 : 1

$$\Rightarrow \text{Quantity of milk in Jar A} = \frac{2}{3} \times 60 = 40 \text{ litres}$$

$$\text{Quantity of water in Jar A} = 60 - 40 = 20 \text{ litres}$$

Let quantity of water in Jar B = x litres

$$\Rightarrow \text{Quantity of milk in Jar B} = (40 - x) \text{ litres}$$

$$\text{Acc. to ques, } \Rightarrow \frac{40 + (40 - x)}{20 + x} = \frac{13}{7}$$

$$\Rightarrow 560 - 7x = 260 + 13x$$

$$\Rightarrow 13x + 7x = 560 - 260$$

$$\Rightarrow 20x = 300$$

$$\Rightarrow x = \frac{300}{20} = 15 \text{ litres}$$

Question 9

In a class, the respective ratio between the number of boys and the number of girls is 3:1. A test was conducted, wherein the average score of the boys was 73, while that of the entire class was 71. What was the average score of the girls?

- A 68
- B 71
- C 67
- D 65
- E 63

Answer: D

Explanation:

Let number of boys = $3x$

$$\Rightarrow \text{Number of girls} = x$$

Let average score of girls = y

Acc. to ques,

$$\Rightarrow \frac{(73 \times 3x) + (y \times x)}{3x + x} = 71$$

$$\Rightarrow \frac{x(219 + y)}{4x} = 71$$

$$\Rightarrow 219 + y = 71 \times 4 = 284$$

$$\Rightarrow y = 284 - 219 = 65$$

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Question 10

Jar A contains 78 litres of milk and water in the respective ratio of 6 : 7. 26 litres of the mixture was taken out from Jar A. What quantity of milk should be added to jar A, so that water constitutes 40% of the resultant mixture in jar A?

- A 8 litres
- B 36 litres
- C 12 litres
- D 14 litres
- E 18 litres

Answer: E

Explanation:

Jar A has 78 litres of mixture of milk and water in the respective ratio of 6 : 7

$$\Rightarrow \text{Quantity of milk in Jar A} = \frac{6}{13} \times 78 = 36 \text{ litres}$$

$$\text{Quantity of water in Jar A} = 78 - 36 = 42 \text{ litres}$$

26 litres of the mixture was taken out from Jar A, i.e., $\frac{26}{78} = \left(\frac{1}{3}\right)^{rd}$

$$\Rightarrow \text{Milk left} = 36 - \frac{1}{3} \times 36 = 24$$

$$\text{Water left} = 42 - \frac{1}{3} \times 42 = 28$$

Let milk added to jar A = x litres

$$\text{Acc. to ques, } \Rightarrow \frac{24+x}{28} = \frac{60}{40}$$

$$\Rightarrow \frac{24+x}{28} = \frac{3}{2}$$

$$\Rightarrow 48 + 2x = 84$$

$$\Rightarrow 2x = 84 - 48 = 36$$

$$\Rightarrow x = \frac{36}{2} = 18 \text{ litres}$$

Question 11

Of the two numbers, 48 per cent of first number is 60 per cent of the second number. What is the respective ratio of the first number to the second number ?

- A 4 : 7
- B 3 : 4
- C 5 : 4
- D Cannot be determined
- E None of these

Answer: C

Explanation:

Let the numbers be $100x$ and $100y$

$$\text{We need to find } = \frac{100x}{100y} = \frac{x}{y} = ?$$

Acc to ques,

$$\Rightarrow \frac{48}{100} * 100x = \frac{60}{100} * 100y$$

$$\Rightarrow 48x = 60y$$

$$\Rightarrow \frac{x}{y} = \frac{60}{48} = \frac{5}{4}$$

$$\Rightarrow x : y = 5 : 4$$

Question 12

A sum of money is divided among A, B, C and D in the ratio of 4 : 5 : 7 : 11 respectively. If the share of C is Rs. 1,351/- then what is the total amount of money of A and D together?

- A Rs. 2,123/-
- B Rs. 2,316/-
- C Rs. 2,565/-
- D Rs. 2,895/-
- E None of these

Answer: D

Explanation:

Let the total amount to be divided = $27x$

$$A : B : C : D = 4 : 5 : 7 : 11$$

$$\Rightarrow \text{Share of C} = \frac{7}{27} * 27x = 1351$$

$$\Rightarrow x = \frac{1351}{7} = 193$$

Now, total amount of money with A & D together

$$= \frac{4+11}{27} * 27x$$

$$= 15 * 193 = \text{Rs. } 2,895$$

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Question 13

38 per cent of first number is 52 per cent of the second number. What is the respective ratio of the first number to the second number?

- A 5 : 4
- B 16 : 9
- C 26 : 19
- D Cannot be determined
- E None of these

Answer: C

Explanation:

Let the numbers be $100x$ and $100y$

$$\text{We need to find} = \frac{100x}{100y} = \frac{x}{y} = ?$$

Acc to ques,

$$\Rightarrow \frac{38}{100} * 100x = \frac{52}{100} * 100y$$

$$\Rightarrow 38x = 52y$$

$$\Rightarrow \frac{x}{y} = \frac{52}{38} = \frac{26}{19}$$

$$\Rightarrow x : y = 26 : 19$$

Question 14

A, B, and C divide an amount of Rs. 4,200 amongst themselves in the ratio of 7 : 8 : 6 respectively. If an amount of Rs. 200 is added to each of their shares, what will be the new respective ratio of their shares of amount?

- A 8 : 9 : 6
- B 7 : 9 : 5
- C 7 : 8 : 6
- D 8 : 9 : 7
- E None of these

Answer: D

Explanation:

Ratio of amounts received by A, B and C = 7 : 8 : 6

Sum of ratios = 7 + 8 + 6 = 21

\Rightarrow Sum received by :

$$A = \frac{7}{21} \times 4200 = \text{Rs. } 1400$$

$$B = \frac{8}{21} \times 4200 = \text{Rs. } 1600$$

$$C = \frac{6}{21} \times 4200 = \text{Rs. } 1200$$

On adding Rs. 200 to the share of each one, the required ratio

$$= 1600 : 1800 : 1400$$

$$= \mathbf{8 : 9 : 7}$$

Question 15

The number of employees in companies A, B and C are in a ratio of 3 : 2 : 4 respectively. If the number of employees in the three companies is increased by 20%, 30% and 15% respectively, what will be the new ratio of employees working in companies A, B and C respectively ?

- A 18 : 13 : 24
- B 13 : 18 : 23
- C 17 : 3 : 23
- D 18 : 11 : 23
- E None of these

Answer: E

Explanation:

Let the no. of employees in companies A, B and C in respectively be $3x$, $2x$ and $4x$

After respective increase in the number of employees :

$$A = \frac{120}{100} \times 3x = 3.6x$$

$$B = \frac{130}{100} \times 2x = 2.6x$$

$$C = \frac{115}{100} \times 4x = 4.6x$$

=> Required ratio = 3.6 : 2.6 : 4.6

= 18 : 13 : 23

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