Ratio and Proportion Questions for Bank Exams

Ratio and Proportion Quiz 4

Directions: Kindly Study the following questions carefully and choose the right answer:

1. Anmol had 10 paise, 25 paise and 50 paise coins in the ratio of 10 : 8 : 9 respectively. After giving Rs. 20 his mother he has Rs. 40. How many 50 paise coins did he have?

A. 72 B. 60 C. 54 D. 35 E. 21

2. Three numbers A, B and C are in the ratio of 12 : 15 : 25. If sum of these numbers is 312, ratio between the difference of B and A and the difference of C and B is –

A. 3 : 7 B. 10 : 3 C. 3 : 10 D. 5 : 7 E. None of these

3. The ratio of Nicotine to Heroine in four types of drugs of equal quantity is 2 : 3, 3 : 7, 4: 11 and 11 :9 respectively. The four drugs are mixed together. What is the ratio of Nicotine to Heroine after mixing?

A. 213 : 91 B. 418 : 189 C. 91 : 149 D. 149 : 81 E. None of these

4. Out of three positive numbers, the ratio of the first and the second numbers is 3 : 4 that of the second and the third numbers is 5 : 6 if the product of the second and the third numbers is 4320. What is the sum of three numbers?

A. 177 B. 165 C. 185 D. 160 E. None of these

5. The cost price of 2 shirts and 3 jeans is Rs. 2200 and the cost price of 2 jeans and 4 shirts is Rs. 2400. Find the ratio between the cost price of the jeans and the shirt.

A. 8 : 9 B. 10 : 7 C. 6 : 5 D. 11 : 10 E. None of these

6. Three numbers are in the ratio 5 : 6 : 7. If the sum of their squares is 990, then the numbers are

A. 10, 12 and 21 **B.** 25, 30 and 35 **C.** 15, 18 and 21 **D.** 20, 24 and 28 **E.** None of these

7. The ratio of Sita's, Riya's and Kunal's monthly income is 84 : 76 : 89. If Riya's annual income is Rs. 4,56,000, what is the sum of Sita's and Kunal's annual incomes? (In some cases monthly income is used while in other annual income is used.)

A. Rs. 11,95,000 B. Rs. 9,83,500 C. Rs. 1,13,000 D. Rs. 10,38,000

E. None of these

8. Two numbers are in ratio of 21 : 26. If 8 is added in each, the new numbers are in ratio of 5 : 6. Find the ratio of numbers, if 6 is subtracted from each number?

A. 18 : 23 B. 19 : 25 C. 6 : 7 D. 9 : 16 E. None of these

9. If A varies directly as B and inversely as C and A = 6, when B = 2 and C= 3, what is the value of A when B = 8 and C = 6?

A. 12 B. 6 C. 18 D. 24 E. None of these

10. The income of Asaram, Satpal and Rahim in the ratio of 12 : 9 : 7 and their spendings are in the ratio 15 : 9 : 8. If Asaram saves 25% of his income. What is the ratio of the savings of Asaram, Satpal and Rahim?

A. 15 : 18 : 11 B. 5 : 8 : 7 C. 23 : 18 : 11 D. 25 : 16 : 13 E. None of these

Correct Answers:

1	2	3	4	5	6	7	8	9	10
A	C	C	A	B	C	D	A	A	A

Explanations:

1.

Total money = 20 + 40 = 60

In this question the total money is given so we need to multiply the value of the coins in the ratio.

10 × 0.10 x + 8 × 0.25x + 9 × 0.50x = 60

x + 2x + 4.5x = 60

7.5 x = 60

x = 8

Number of 50 paise coins = 9 × 8 = 72

Hence, option A is correct.

2.

Let the number A, B and C be 12a , 15a and 25a respectively

Then from the question 12a + 15a + 25a = 312

$\Rightarrow a = \frac{312}{52} = 6$

$\Rightarrow$ required ratio = $\frac{15 \times 6 - 12 \times 6}{25 \times 6 - 15 \times 6}$

$= \frac{3}{10} = 3 : 10$

Hence, option C is correct.

3.

Let the quantity of each drugs be ‘a’

Then quantity of nicotine after mixing is

$\left(\frac{2}{5} + \frac{3}{10} + \frac{4}{5} + \frac{11}{20}\right)a$

$= \left(\frac{2 \times 12 + 3 \times 6 + 4 \times 4 + 11 \times 3}{60}\right)a$

$= \left(\frac{91}{60}\right)a$

and quantity of heroine after mixing is

$\left(\frac{3}{5} + \frac{7}{10} + \frac{11}{15} + \frac{9}{20}\right)$ a

$= \left(\frac{3 \times 12 + 7 \times 6 + 11 \times 4 + 9 \times 3}{60}\right)$ a

$= \left(\frac{149}{60}\right)$ a

⇒ required ratio of nicotine to heroine after mixing

$= \frac{\left(\frac{91}{60}\right)a}{\left(\frac{149}{60}\right)a}$ = 91 : 149

Hence, option (C) is correct.

4.

Ratio of 1st and 2nd numbers = 3 : 4

Ratio of 2nd and 3rd numbers = 5 : 6

Let the 2nd number = 5x, third number = 6x

Product of 2nd and 3rd numbers = 4320

5x × 6x = 4320

$x^2 = 144$

x = 12

2nd number = 60, 3rd number = 72,

1st number = $\frac{60}{4} \times 3 = 45$

Sum of three numbers = 60 + 72 + 45 = 177

Hence, option A is correct.

5.

Let the cost price of one shirt = x Rs., the cost price of one jeans = y Rs.

According to the question,

$2x + 3y = 2200$ 1

$2y + 4x = 2400$

$2x + y = 1200$ 2

After solving these 2 equation,

$x = 350$ Rs. , $y = 500$ Rs.

Ratio = 500 : 350 = 10 : 7

Hence, option B is correct.

6.

Approach I:

Let the Numbers be 5x, 6x and 7x

$\therefore (5x)^2 + (6x)^2 + (7x)^2 = 990$

$\Rightarrow 25x^2 + 36x^2 + 49x^2 = 990$

$\Rightarrow 110x^2 = 990$

$\Rightarrow x^2 = 9$

$\Rightarrow x = 3$

$\therefore$ Numbers = 15, 18 and 21.

Approach II: Pick each of the options. Add unit digits of the squares of unit digit of the numbers given in a particular option and match the resultant unit digit with the unit digit of the given total; 0 in 990.

Squares of the unit digits of the numbers (15, 18, 21) given in option C are 5, 4 and 1 which on addition give us 10 the unit digit of which is 0.

Hence, option C is the correct answer.

7.

Ratio of monthly income and ratio of annual income will be the same,

ie. 84 : 76 : 89

Applying the rule of proportion, we get

Riya's income in ratio : Riya's total income : : Sum of Sita's and Kunal's income in ratio : Sum of Sita's and Kunal's income in value

76 : 456000 : : (84 + 89) : x

∴ Sum of Sita's and Kunal's annual income in value

$= \frac{456000}{76} \times (84 + 89) =$ Rs. 1038000

Hence, option D is correct.

8.

Let the numbers be 21x and 26x.

$\frac{21x + 8}{26x + 8} = \frac{5}{6}$

6(21x + 8) = 5(26x + 8)

126x + 48 = 130x + 40

x = 2

So, numbers will be 42 and 52.

If 6 is subtracted, then numbers will be 36 and 46.

Required ratio = 36 : 46. i.e. 18 : 23

Hence, option A is correct.

9.

Let the constant be x,

so putting the first scenario in equation

$A = x \times \frac{B}{C}$, we get:

$6 = x \times \frac{2}{3}$ or x = 9

We can find out A in the second scenario by putting value of x as 9

$A = 9 \times \frac{8}{6}$ or A = 12

Hence, option A is correct.

10.

Income = Expenditure + Saving

Asaram: 12x = 15y + 3x (3x = 25% of 12x)

Satpal: 9x = 9y + (9x – 9y)

Rahim: 7x = 8y + (7x – 8y)

Therefore, 12x – 3x = 15y

$\Rightarrow \frac{x}{y} = \frac{5}{3}$

$\Rightarrow y = \frac{3x}{5}$

Therefore, savings = (income – expenditure)

Asaram = 12x – 9x = 3x

Satpal = $9x - 9y = 9x - \frac{27}{5}x = \frac{18}{5}x$

Rahim = $7x - 8y = 7x - \frac{24}{5}x = \frac{11}{5}x$

i.e., the ratio of savings of Asaram : Satpal : Rahim

= $3x : \frac{18}{5}x : \frac{11}{5}x$

= 15 : 18 : 11

Hence, option A is correct.