



Date : 7th Dec 2023

Quantitative Aptitude – Ratio and Proportion

English

Q:1 What is the fourth proportion of 13, 23, and 871?

1. 1151
2. 1341
3. 1481
4. 1541

Q:2 A certain amount of money is to be distributed among three friends Ajay, Vijay, and Anuj in the ratio 40 : 29 : 39. The difference between the amount of Ajay and Vijay is Rs.4950. Find the total amount of money to be distributed among three of his friends.

1. Rs.45600
2. Rs.54800
3. Rs.48600
4. Rs.54500

Q:3 There is a total of 468 chocolates distributed among Bittu, Bitti, and Bharat. The ratio in which the chocolates are distributed is 29 : 37 : 51 respectively. Bharat gives a few chocolates to Bitti so that they both have an equal number of chocolates. How many chocolates Bharat gave to Bitti?

1. 22
2. 28
3. 88
4. 11

Q:4 If the ratio of two numbers a and b is 3 : 5, such that $a, b > 0$, find the value of $\left| \frac{(a+b)}{(a-b)} \right|$.

1. 7 : 3
2. 8 : 7
3. 11 : 6
4. 4 : 1

Q:5 Find the mean proportional of x and y, if $7 : 105 :: 13 : x$ and $14 : 168 :: 12 : y$.

1. $15\sqrt{122}$
2. $5\sqrt{21}$
3. $21\sqrt{51}$
4. $12\sqrt{195}$

Q:6 A, B and C invests Rs 6050, Rs 6600 and Rs 7150 in a business. The duration of investments of A, B and C are in the ratio 7 : 5 : 7. If the total profit obtained is Rs 35340, then what is the share of A?

1. Rs 11935
2. Rs 12705
3. Rs 12958
4. Rs 13485

Q:7 If $A : B = 11 : 13$, then what will be the value of the following expression?
 $(3A - 2B) / (2A + B)$

1. 7 : 13
2. 1 : 5
3. 1 : 7
4. 49 : 169

Q:8 Six years before, the ratio of ages of the father and his son was 2 : 1. If the difference in their ages 6 years ago was 28 years, find the ratio of age of the son and father 2 years from now.

1. 16 : 9
2. 9 : 16
3. 17 : 31
4. 15 : 29

Q:9 A mixture of alcohol and aloe vera in sanitizer is 3:2 and a mixture of same liquids in another sanitizer is 4:11. If these two mixture is added in an empty container, find the ratio of liquids in this container.

1. 17 : 13
2. 13 : 17
3. 7 : 13
4. 13 : 7

Q:10 If $a : b = 2 : 1$, $b : c = 2 : 5$, $c : d = 1 : 2$ find $a : d = ?$

1. 2 : 5
2. 2 : 3
3. 5 : 2
4. 5 : 6



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Answer Key

1. (4)	2. (3)	3. (2)	4. (4)	5. (4)
6. (1)	7. (2)	8. (2)	9. (2)	10. (1)

Answers and Solutions

Q:1 The correct answer is **option 4** i.e. **1541**.

Fourth proportional of a, b, and c = bc/a

\therefore Fourth proportional of 13, 23, 871 = $(871 \times 23)/13$

$\Rightarrow (67 \times 23) = 1541$

Q:2 The correct answer is **Option 3** i.e. **Rs.48600**.

The difference between the amounts of Ajay and Vijay is Rs.4950

$\Rightarrow 40x - 29x = 4950$

$\Rightarrow 11x = 4950$

$\Rightarrow x = 450$

The total amount of money to be distributed among three of his friends

A certain amount of money is to be distributed among three friends Ajay, Vijay, and Anuj in the ratio 40 : 29 : 39
 $= 40x + 29x + 39x = 108x$

$\Rightarrow 108 \times 450 = \text{Rs.}48600$

Total amount = Rs.48600

Q:3 The correct answer is **option 2** i.e. **28**.

Suppose the chocolates with Bittu, Bitti and Bharat are 29x, 37x, 51x respectively.

According to the question,

$\Rightarrow 29x + 37x + 51x = 468$

$\Rightarrow x = 4$

Bharat has chocolates = $51 \times 4 = 204$

Bitti has chocolates = $37 \times 4 = 148$

So, chocolates were given by Bharat to Bitti so that both have equal chocolates = $(204 - 148)/2 = 56/2 = 28$

Q:4 The correct answer is **Option 4** i.e. **4 : 1**

Given, $a/b = 3/5$

then, let $a = 3x$ and $b = 5x$

Hence, $\left| \frac{(a+b)}{(a-b)} \right| = \left| \frac{(3x+5x)}{(3x-5x)} \right| = \left| \frac{(8x)}{(-2x)} \right| = 4/1$ or $4 : 1$

Q:5 The correct answer is **Option 4** i.e. **12/195**.

From the first proportion = $x = 105 \times 13/7 = 15$

From the second proportion = $y = 168 \times 12/14 = 144$

Mean proportional of x and y = $\sqrt{(195 \times 144)} = 12\sqrt{195}$

Q:6 The correct answer is **option 1** i.e. **Rs 11935**

Investment of A : B : C = 6050 : 6600 : 7150

$\Rightarrow 121 : 132 : 143 = 11 : 12 : 13$

The profit \propto Investment \times Time of investment

Share of A = $\left[\frac{(11 \times 7)}{(11 \times 7 + 12 \times 5 + 13 \times 7)} \right] \times 35340$

$\Rightarrow 77/228 \times 35340 = \text{Rs } 11935$

Q:7 The correct answer is **option 2** i.e. **1 : 5**.

$A/B = 11/13$

$\Rightarrow A = 11, B = 13$

Now, $(3A - 2B)/(2A + B)$

$\Rightarrow (3 \times 11 - 2 \times 13)/(2 \times 11 + 13)$

$\Rightarrow (33 - 26)/(22 + 13)$

$\Rightarrow 7/35 = 1/5 = 1 : 5$

Q:8 The correct answer is **option 2** i.e. **9 : 16**.

Before 6 years,

Let the father's age = $2x$

Son's age = x

As the difference in ages was 28 years,

$\Rightarrow 2x - x = 28$

$\Rightarrow x = 28$

At present,

Father's age = $2 \times 28 + 6 = 62$ years

Son's age = $28 + 6 = 34$ years

Now, The ratio of age after 2 years from now will be =

$\frac{(34+2)}{(62+2)} = \frac{36}{64} = \frac{9}{16}$

Q:9 The correct answer is **option 2** i.e. **Rs 13 : 17**.

When two or more simple mixtures are mixed together, a compound mixture is formed.

The mixture of alcohol and aloe vera in sanitizer I = 3:2

The mixture of alcohol and aloe vera in sanitizer II = 4:11

In mixture I,

Let alcohol = $3x$ and aloe vera = $2x$

Total volume in the mixture I = $5x$

In mixture II,

Let alcohol = $4y$

and aloe vera = $11y$

Total volume in the mixture II = $15y$



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The ratio of alcohol and aloe vera in the final mixture is 13:17

ratio of alcohol and aloe vera in the final mixture = $\left[\frac{3}{5} + \frac{4}{15} \right] / \left[\frac{2}{5} + \frac{11}{15} \right] = 13/17$

Q:10 The correct answer is **option 1** i.e. **2 : 5**.

Trick:

Step 1 → a : b : c : d

2 : 1 : _ : _

_ : 2 : 5 : _

_ : _ : 1 : 2

Step 2 →

a : b : c : d

2 : 1 : 1 : 1

2 : 2 : 5 : 5

1 : 1 : 1 : 2

⇒ 4 : 2 : 5 : 10

a : d = 4 : 10

= 2 : 5

