L7 : Ratio-Proportion_Variation_2

1-Tut : Coins Of Denominations

Send Feedback

A boy has a few coins of denominations 50 paise, 25 paise and 10 paise in the such a way that 6 times the number of 50 paise coins is equal to three times of 25 paise coins and two times of 10 paise coins. If the total amount of the coins is Rs. 6.50, the number of 10 paise coins is

Options

This problem has only one correct answer

5
10
15
20

Correct Answer : C

Solution Description

According to the question: 6 times the number of 50 paise coins is equal to three times of 25 paise coins and two times of 10 paise coins.

50 paise coins : 25 paise coins: 10 paise coins= 1/6 : 1/3 : ½= 1: 2: 3

Let the numbers of 50 paise, 25 paise and 10 paise are x, 2x and 3x.

50x+25×2x+10×3x=650

130x=650

x=5

2x=10,

3x=15

Number of 10 paise= 15. Hence, option (c) is correct.

2-Tut : Sum Of Runs

Send Feedback

A team of four players scored 100 runs together. A scored half as many runs as B, C's score was 1.5 times of B and D's score was twice of B. Find the sum of runs scored by A and C.

Options

This problem has only one correct answer

10

30
40
None Of These

Correct Answer : C

Solution Description

let the runs scored by A, B, C and D were a, b, c and d respectively.

a= b/2, c= 1.5b, d= 2b

a: b: c: d= ½ : 1: 1.5: 2

a: b: c: d= 1: 2: 3; 4

Hence, the runs scored by A and C= 100×((1+3)/(1+2+3+4))=40.

3-Tut : Vessels

Send Feedback

Two vessels A and B contain spirit and water mixed in the ratio 5:2 and 7:8 respectively. If the equal quantity of both mixtures are mixed in a vessel C then what would be the ratio of spirit and water in vessel C?

Options

This problem has only one correct answer

44:62
64:43
62:43
None Of These

Correct Answer : C

Solution Description

Solution: let the initial quantity of mixture in both vessels be 105 liters.
In vessel A: Spirit= 55+2×105=75 liters. Water= 105- 75= 30 liters.
In vessel B: Spirit= 77+8×105=49 liters. Water= 105- 49= 56 liters.
Required ratio= 75+49:30+56=124:86=62:43

Hence, option (c) is correct.

4-Tut : Milk And Water

Send Feedback

The milk and water in two vessels A and B are in the ratio 4:3 and 2:3 respectively. If equal quantities of mixture from both vessels are taken in a different vessel C, then what is the ratio of milk and water in the vessel C?

Options

This problem has only one correct answer

5:7

7:5
1/5:1/8
17:18

Correct Answer : D

Solution Description

Let us assume that equal quantities of 35 litres mixture from both vessels are taken in a different vessel C.
In vessel A: Milk= 44+3×35=20 liters. Water= 35- 20= 15 liters.
In vessel B: Milk= 22+3×35=14 liters. Water= 35- 14= 21 liters.
Required ratio= 20+14:15+21=34:36=17:18

Hence, option (d) is correct.

5-Tut : Ratio Of Incomes

Send Feedback

The ratio of incomes of Piku and Qasim is 3:4 and the ratio of their expenditures is 2:3. If both of them save Rs6000, the income of Piku is

Options

This problem has only one correct answer

Rs 20000
Rs 12000
Rs 18000
Rs 24000

Correct Answer : C

Solution Description

Let the incomes of Piku and Qasim be Rs3x and 4x respectively.
Again, let their expenditures be Rs2y and 3y respectively.
According to the question,
3x – 2y = 6000 …(i)and
4x – 3y = 6000 …(ii)
From equations (i) and (ii)
3x – 2y = 4x – 3y
or, 4x – 3x = 3y – 2y
or, x = y
From equations (i)
3x – 2x = 6000
x = 6000

The income of Piku = Rs3x = Rs(3 x 6000) = Rs18000

6-Tut : Incomes of Abhay And Bishan

Send Feedback

The incomes of Abhay and Bishan are in the ratio 2:3 and their expenditures are in the ratio 1:2. If each saves Rs24,000, find Abhay's income?

Options

This problem has only one correct answer

Rs 24000
Rs 72000
Rs 19200
Rs 48000

Correct Answer : D

Solution Description

Let the incomes of Abhay and Bishan be Rs2x and Rs3x and their expenditures be Rs y and Rs 2y respectively.

∴ 2x – y = 24000 …(i)

And 3x – 2y = 24000 …(ii)

By equations (i)*2 – (ii)

4x – 2y – 3x + 2y = 24000

x = 24000

∴ Abhay's income = 2*24000 = Rs48000

7-Tut : Ratio Of Initial And Final Values

Send Feedback

If x is directly proportional to y and x is increased by 30% then what would be the ratio of initial and final values of y?

Options

This problem has only one correct answer

10:11
10:13
5:7
None Of These

Correct Answer : B

Solution Description

x~y
After increasing x by 30% the value of y would be increased proportionally.

Required ratio= y: 1.3y= 1: 1.3=10: 13

8-Tut : Ratio Of Values Of y

Send Feedback

If x is inversely proportional to y and x is increased by 10% then what would be the ratio of initial and final values of y?

Options

This problem has only one correct answer

10:11
10:13
5:7
11:10

Correct Answer : D

Solution Description

(x~1/y) or (y~1/x)
y1:y2 =(1:(1/1.1))=1:(10/11)=11:10

Hence, option (d) is correct.

9-Tut : Distance Covered

Send Feedback

A train travels 10 km at a particular speed in a particular time. If speed is increased by 100% and time is reduced by 50% then find the distance covered by the train.

Options

This problem has only one correct answer

10 km
5 km
15 km
None Of These

Correct Answer : A

Solution Description

Distance in directly proportional to speed and time.
New speed= old speed+ 100% of old speed= Twice of the old speed
Similarly new time= ½ of the old time.

Distance= 2*Speed x ½ time= Speed x time= 10 km. Hence, option (a) is correct.

10-Tut : Find x?

Send Feedback

If x is directly proportional to y and x= 10 when y= 3, then find x when y= 9.

Options

This problem has only one correct answer

3.33
3
30
None Of These

Correct Answer : C

Solution Description

x~y

x1:x2=y1:y2

10: x2= 3: 9

x2= 30. Hence, option (c) is correct.

11-Tut : Find x when y is given?

Send Feedback

If x is inversely proportional to y and x= 100 when y= 10, then find x when y= 20.

Options

This problem has only one correct answer

50
3
30
None Of These

Correct Answer : A

Solution Description

x~1/y

x1:x2=y2:y1

100: x2= 20: 10

x2= 50. Hence, option (a) is correct.

12-Tut : Find value of B?

Send Feedback

A is directly proportional to the square of B. for A= 10, B= 50. Then, find the value of B, when A= 5.

Options

This problem has only one correct answer

50
25
50/sqrt(2)
None Of These

Correct Answer

Solution Description

A~B^2
A1:A2=B1^2:B2^2

10: 5= 50^2:B2^2

B2= 50/sqrt(2)