Mindtree Aptitude Questions | Quantitative Aptitude Questions

Q1. A and B are 50 and 70 years old respectively. How many years ago was the ratio of their ages 2 : 3?

A. 40 years

B. 80 years

C. 10 years

D. 45 years

Answer: Option C

Explanation:

Given,

The present age of A = 50 years

The present age of B = 70 years.

Let us assume before "x" years, their ages were in the ratio of 2 : 3

(50-x)/(70-x) = 2/3

150-3x = 140-2x

x = 10 years.

So, 10 years ago their ages were in the ratio 2 : 3

Q2. A wholesaler decides to mix two varieties of lentils worth Rs. 170 per kg and Rs. 180 per kg with a third variety of lentils in the ratio 1 : 2 : 3. What is the price per kg of the third variety of lentils if the lentil mixture is worth Rs. 173 per kg?

A. Rs. 174.30

B. Rs. 178.33

C. Rs. 176.40

D. Rs. 169.33

Answer: Option D

Explanation:

Given,

The first variety of Lentils = Rs. 170/kg

The second variety of Lentils = Rs. 180/kg

Let us assume the third variety of Lentils = Rs. x/kg

All three varieties are mixed in the ratio 1 : 2 : 3 and the mixture cost is Rs. 173/kg.

Let us assume each part in the ratio is 1 kg.

=> [170(1) + 180(2) + x(3)]/[1 + 2 + 3] = 173

170 + 360 + 3x = 173*6

3x = 508

x = 169.33

Q3. It takes 400 seconds for a train to completely cross two points A and B which are at a distance of 7.8 km. What is the speed of the train, if the length of the train is 200m?

A. 72 kmph

B. 36 kmph

C. 48 kmph

D. 64 kmph

Answer: Option A

Explanation:

Length of the train = 200 m = 0.2 km

Distance between A and B = 7.8 km

Total Distance covered by train = 7.8 + 0.2 (Length of the train should also be covered)

= 8 km

Time taken = 400 seconds = 400/(60*60) hrs = 1/9 hrs

Speed = Distance/Time = 8/(1/9) = 72 kmph

Q4. The present age of the father is 4 years more than thrice the age of his son. Three years later, the father's age will be 10 years more than twice the age of the son. What is the present age of the father (in years)?

A. 33 years

B. 31 years

C. 45 years

D. 43 years

Answer: Option B

Explanation:

Let us assume the present age of father and son as F and S respectively.

Given, the present age of the father is 4 years more than thrice the age of his son.

F = 3S + 4 --- Eq (1)

Three years later, the father's age will be 10 years more than twice the age of the son.

F + 3 = 2(S+3) + 10 --- Eq (2)

Substitute Eq (1) in Eq (2)

3S + 4 + 3 = 2S + 16

S = 9

Substitute the value of S in Eq (1)

F = 3(9) = 4 = 31 years

Q5. Four pipes A, B, C and D can fill a tank with water in 15, 20, 30 and 60 hours respectively. In how much time will all the four pipes fill the tank together?

A. 6 hrs

B. 3 hrs

C. 1 hr 30 min

D. 2 hrs 30 min

Answer: Option A

Explanation:

Given, Four pipes A, B, C and D fill a tank in 15, 20, 30 and 60 hours respectively.

L.C.M of (15, 20, 30, 60) = 60 units (This is to be assumed as Total Work)

Efficiency of pipe A = 60/15 = 4 units/hr

Efficiency of pipe B = 60/20 = 3 units/hr

Efficiency of pipe C = 60/30 = 2 units/hr

Efficiency of pipe D = 60/60 = 1 unit/hr

Efficiency of four pipes together = 4 + 3 + 2+ 1 = 10 units/hr

Time taken by four pipes to fill the tank = Total Work/Efficiency = 60/10 = 6 hrs

Q6. Abe wants to sell artisanal drinks during the holidays. He produces 160 litres of the drink and sells a part of it at 10% profit. He sells the rest of the drink at a 6% profit. What quantity of the drink did he sell at 10% profit if he gained 9% profit on the entire 160 litres?

A. 120 litres

B. 100 litres

C. 140 litres

D. 90 litres

Answer: Option A

Explanation:

Given, Total quantity of artisanal drinks produced = 160 litres

Let us assume x litres is sold at a profit of 10% and the remaining quantity which is (160-x) litres is sold at 6% profit.

Let us assume the cost price of drink = Re. 1/lit

The cost price of 160 litres = Rs. 160

The selling price at which there is a profit of 9% = 1.09(160) = Rs. 174.4

By the above statements, we can say that

1.1(x) + 1.06(160-x) = 174.4

1.1x - 1.06x = 174.4 - 169.6

0.04x = 4.8

x = 120 litres.

Q7. Mango A worth Rs. 130/kg and Mango B worth Rs. 120/kg is mixed with the third variety C in the ratio 1:1:2. If the mixture is worth Rs. 160/kg, what is the price of the third variety of mango i.e C?

A. Rs. 200

B. Rs. 225

C. Rs. 230

D. Rs. 195

Answer: Option D

Explanation:

Given,

Mango A = Rs. 130/kg

Mango B = Rs. 120/kg

Let us assume Mango C = Rs. x/kg

Mango A and Mango B are mixed with Mango C in the ratio 1 : 1 : 2 and the mixture cost is Rs. 160/kg

=> [130(1) + 120(1) + 2x]/[1+1+2] = 160

2x = 640 - 130 -120

x = Rs. 195/kg

Q8. In a startup company XYZ, 45% of employees are less than 25 years of age. The number of employees older than 25 years of age is 1/2 of the number of employees of 25 years of age. If the number of employees who are 25 years old is 8, then how many employees work at XYZ?

(Note: Choose the option that coincides with the nearest integer)

A. 17

B. 19

C. 15

D. 22

Answer: Option D

Explanation:

Let us assume the total number of employees as x

Given,

The number of employees of age 25 years = 8

The number of employees older than 25 years = 1/2 of the number of employees of age 25 years = 8/2 =4

We know that 45% of employees are less than 25 years of age.

So, the combination of the number of employees who are of 25 years and who are older than 25 years is the remaining 55% of employees.

55%(x) = 12

x = 1200/55 = 21.8

So, the nearest integer is 22.

Q9. A retailer buys lentil A at Rs. 20.40/kg and lentil B at Rs. 18.60/kg. He wants to mix A and B to make a new mixture C that costs Rs 19.40/kg. In what ratio should he mix lentil A and B to do so?

A. 8 : 10

B. 10 : 8

C. 4 : 10

D. 10 : 4

Answer: Option A

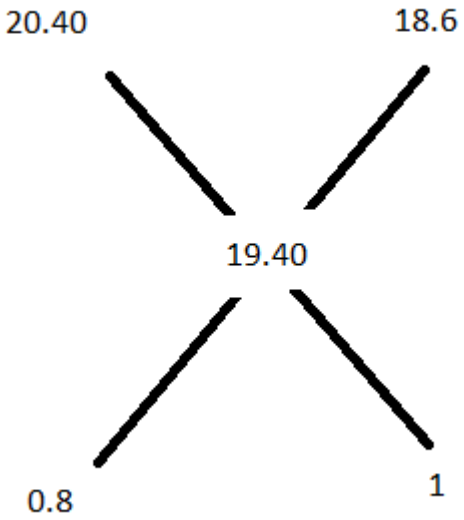
Explanation:

Cost of Lentil A = Rs. 20.40/kg

Cost of Lentil B = Rs. 18.60/kg

Cost of the mixture = Rs. 19.40/kg

By using allegations,



The ratio in which A and B are mixed = 0.8 : 1 = 8 : 10

Q10. There are three places Bihar, West Bengal and Jharkhand such that seven roads connect Bihar and West Bengal and nine roads connect West Bengal and Jharkhand. From the given data determine in how many ways can one travel from Bihar to Jharkhand?

A. 169

B. 63

C. 112

D. 139

Answer: Option B

Explanation:

Given, seven roads connect Bihar and West Bengal

Nine roads connect West Bengal and Jharkhand.

So, the number of ways from Bihar to Jharkhand = 7*9 = 63

Q11. There is a ticket collector at the entry gate museum, who collects the tickets from visitors. He arranges these tickets in his free time. If he arranges the tickets in pairs, one ticket is left. It is also the same when he arranges them in groups of 3, 4, 5 and 6.

How many tickets will be left with him if he arranges them in groups of 8?

A. 4

B. 5

C. 8

D. 9

Answer: Option B

Explanation:

Given, the number of tickets left out when he arranged them in the groups of 2, 3, 4, 5 and 6 is 1.

So, the number of tickets = LCM(2, 3, 4, 5, 6) + 1 = 60 + 1 = 61

The number of tickets remaining when he arranges them in the groups of 8 = Remainder (61/8) = 5

Q12. In how many days will 10 women complete work if 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days?

A. 30

B. 35

C. 40

D. 45

Answer: Option C

Explanation:

Let us assume the efficiency of man as M and woman as W.

Given,

4 men and 6 women can complete the work in 8 days.

Work completed = (4M + 6W)8 --- Eq (1)

3 men and 7 women can complete the work in 10 days.

Work completed = (3M + 7W)10 --- Eq (2)

As the work completed is the same in both cases, let's equate them.

(4M + 6W)8 = (3M + 7W)10

M = 11W

M/W = 11/1

Substitute M = 11 and W = 1 in Eq (1)

Total Work = [4(11) + 6(1)]8 = 400

Time taken by 10 women = 400/10 = 40 days

Q13. The average age of a group of 10 students is 20 years. If 4 more students join the group, the average age increases by 2 years. What is the average age of the new students?

A. 27 years

B. 26 years

C. 24 years

D. 25 years

Answer: Option A

Explanation:

Given,

The average age of 10 students is 20 years

Average age = Sum of the ages/Number of students

20 = Sum of the ages/10

Sum of ages of 10 students = 200 --- Eq (1)

4 more students joined and the average age increased by 2 years.

The average age of 14 students = 22 years

Sum of ages of 14 students/14 = 22

Sum of ages of 14 students = 308 --- Eq (2)

Subtract Eq (2) and Eq (1)

Sum of ages of 4 new students = 308 - 200 = 108

The average age of 4 new students = 108/4 = 27

Q14. The ratio of children going for a picnic to the ratio of children not going is 8 : 3. If the total number of children were 55 out of which 3 who were not going earlier are now ready to go, what is the new ratio?

A. 8 : 1

B. 9 : 2

C. 51 : 4

D. 43 : 12

Answer: Option D

Explanation:

Given, Total number of children = 55

The ratio of children going for a picnic to the children not going for a picnic = 8 : 3

Total parts = 11p

Number of children going for picnic = 40

Number of children not going for picnic = 15

Given, 3 students who were not going earlier are now ready to go.

So, the number of children going for picnic = 43

Number of children not going for picnic = 12

Hence, the ratio = 43 : 12

Q15. If the age of a husband, wife and their child is in the ratio 13 : 11 : 3 and the average age of this family of three members is 36 years, then what the difference between the age of the husband and the wife?

A. 9 years

B. 11 years

C. 13 years

D. 8 years

Answer: Option D

Explanation:

Given, the age of husband, wife and their child is in the ratio = 13 : 11 : 3

Total number of parts = 27p

The average age of three members = 36 years

Sum of ages of three members/3 = 36

Sum of ages of three members = 108

=> 27 p = 108

1p = 4

The age of husband = 13p = 13*4 = 52

The age of wife = 10p = 11*4 = 44

The difference between the age of husband and wife = 52 - 44 = 8 years