120+ Mixture & Alligation Questions With Solution

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1. A vessel is filled with liquid, which is 3 parts water and 5 parts milk. How much of the liquid should be drawn of and replaced by water to make it half water and half milk?
   A) 1/8
   B) 1/5
   C) 2/3
   D) 2/7
   E) None

   View Answer

   Option B
   Solution:
   Suppose the vessel initially contains 8 litres of liquid.
   Let x litres of this liquid be replaced with water.
   water in new mixture =(3-3x/8+x)
   syrup in new mixture =(5-5x/8)
   Then (3-3x/8+x) = (5-5x/8)
   5x + 24 = 40 – 5x
   10x=16==>x=8/5
   So part of mixture replaced is 8/5*1/8=1/5

2. Milk and water are in a Can A as 4:1 and in Can B as 3:2. For Can C, if one takes equal quantities from A and B, find the ratio of milk to water in C.
   A) 7:3
   B) 4:7
   C) 3:5
   D) 5:4
   E) None

   View Answer

   Option A
   Solution:
   Ratio of only milk in vessel A = 4 : 5
   Ratio of only milk in vessel B = 3 : 5
   Let 'x' be the quantity of milk in vessel C
   4/5…………………..3/5
   ……………x
   3/5-x………………x – 4/5
   (3/5-x)/(x-4/5)=1/1
   X=7/10
   Therefore, quantity of milk in vessel C = 7

   => Water quantity = 10 – 7 = 3
   Hence the ratio of milk & water in vessel 3 is 7 : 3

3. A mixture contains alcohol and water in the ratio 3:2. If it contains 3 liters more alcohol than water, the quantity of alcohol in the mixture
   A) 6
   B) 8
   C) 9
   D) 5
   E) None

   View Answer

   Option C
   Solution:
   If quantity of water as x and alcohol as x+3.
   (x+3)/x=3/2
   Water x=6 and alcohol = x+3 = 9 liters

4. Three types of Rice of Rs. 1.27, Rs. 1.29 and Rs. 1.32 per kg are mixed together to be sold at Rs. 1.30 per kg. In what ratio should this rice be mixed?
   A) 4:1:3
   B) 2:3:1
   C) 1:1:2
   D) 1:2:1
   E) None

   View Answer

   Option C
   Solution:
   127………………………..132
   ………………130
   2…………………………….3
   Then
   129………………132
   …………130
   1……………………..2
   Hence final ratio is 2 : 2: 3+1 ==>1:1:2

5. A dishonest milkman professes to sell his milk at cost price but he mixes it with water

and thereby gains 25%. The percentage of water in the mixture is:
A) 35%
B) 15%
C) 25%
D) 20%
E) None

View Answer

Option D
Solution:
Let CP of 1 litre milk be Rs 1
Then SP of 1 litre of mixture =Rs 1 Gain 25%
CP of 1 litre mixture =Rs (100/125*1)=4/5
Milk………………..Water
1………………………0
…………..4/5
4/5……………………1/5
Ratio 4:1
Hence %ge of water in the mixture
=(1/5*100)=20%

6. A container contains 50 litres of milk. From this container 5 litres of milk was taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?
A) 28.50
B) 36.45
C) 25.5
D) 32.25
E) None

View Answer

Option B
Solution:
Amount of milk left after 3 operations =$\{50(1-5/50)^3\}$
=50 * 9/10 * 9/10 * 9/10
=36.45

7. An alloy of gold and copper weights 50 g. It contains 80% gold. How much gold should be added to the alloy so that

percentage of gold is increased to 90?
A) 50gm
B) 60gm
C) 45gm
D) 35gm
E) None

View Answer

Option A
Solution:
Gold in alloy =50*80% =40gm
Copper in alloy =50*20%=10gm
Now,
(40+x)/10=90/10
X=50gm

8. A trader sells total 315 TV sets. He sells black and white TV sets at a loss of 6% and color TV sets at a profit of 15% thus he gains 9% on the whole. What are the no. of black and white sets which he has sold?
A) 100
B) 105
C) 90
D) 85
E) None

View Answer

Option C
Solution:
-6………………..+15
…………..9
6……………………15
2……………………..5
7 == 315
2 ? == 90
=> x=90

9. 9. 4 kg of a metal contains 1/5 copper and rest in Zinc. Another 5 kg of metal contains 1/6 copper and rest in Zinc.The ratio of Copper and Zinc into the mixture of these two metals:
A) 54:181
B) 39:231
C) 62:121
D) 49 : 221

E) None

View Answer

Option D
Solution:
Copper in 4 kg = 4/5 and Zinc in 4 kg = 4*4/5=16/5
Copper in 5 kg = 5/6 and Zinc in 5 kg = 5*5/6=25/6
Therefore, Copper in mixture = 4/5 + 5/6=49/30
and Zinc in the mixture = 16/5 + 25/6=221/30
Therefore the required ratio = 49 : 221

10. Rs. 69 were divided among 115 students so that each girl gets 50 paise less than a boy. Thus each boy received twice the paise as each girl received. The no. of girls in the class is:
A) 47
B) 23
C) 92
D) 25
E) None

View Answer

Option C
Solution:
Here each girl receives 50 paise and each boy receives 100 paise and the average receiving of each student.
=6900/115=60paise
50…………………….100
…………..60
40……………………..10
4:1
5 == 115
4 ? == 92

1. A shopkeeper purchase two quantities of rice at the rate of Rs. 280/kg and Rs. 260/kg . In 52 kg of the second quantity, how much rice of the first quantity should be mixed so that by selling the resulting mixture at Rs.300/ kg , he gains a profit of 25%.
A) 20 kg
B)26kg
C)33 kg
D) 30kg
E) 18kg

View Answer

Option B
Solution:
profit % = 25/100 = ¼
CP = 4 and profit = 1
SP = 5
Now , SP = 300
5————300
1————60
CP = 4 * 60 = R.240/kg
Rice 1————— Rice 2
200——————260
—————240
20——————40
1:2
52 kg of the second quantity .
so Rice 1 : Rice 2 = 1*26 : 2 * 26= 26 : 52
Hence , 26 kg of Rice 1 is added in the mixture.

2. If the average weight of the whole class is 50 kg. And the average weight of boys in the class is 30 kg and the average weight of girls in the same class is 22 kg. What could be the possible strength of boys and girls in the class respectively?
A) 5 : 8
B) 5 : 3
C) 7 : 5
D) 7 : 6
E) 9 : 5

View Answer

Option B
Solution:
No. of boys : No. of girls
22 —————— 30
——— 25
5 ————— 3
3 : 5

Hence , the possible strength of the boys and girls in the whole class = 5 : 3

3. A woman travels 200 km in 5 hours in two parts. In the first part of the journey, she travels by car at the speed of 50 km/hr . In the second part of the journey , she travels by bus at the speed of 30 km/hr . How much distance did she travel by bus?
A) 75 km
B) 55 km
C)40 km
D) 95km
E) 20 km

View Answer

 Option A
Solution:
speed of car ——————- speed of bus
50 ——————————- 30
———————————200/5
10 —————————————— 10
= 1 : 1
Time taken by both the vehicles = 5/2 = 2.5 hrs.
Therefore, distance travelled by bus =30 * 2.5 = 75 km

4. Somnath bought two different kinds of oil, one is soya oil and another is olive oil.There are two mixtures of these two oils . In the first mixture the ratio of the soya and olive oil is in the ratio of 3 : 4 and in the second mixture the ratio of the soya and olive oil is 5 : 6 . If he mixes these two mixtures and makes a third mixture of 36 litres in which the ratio of the soya oil and olive oil is 4 : 5. Find the quantity of the second mixture that is needed to make 36 litres of third type of mixture.
A) 25 L
B) 22 L
C)34 L
D) 18 L
E) 27 L

View Answer

 Option B
Solution:
MixI ————— MixII

(3/7) ———————- (5/11)
—————(4/9)
(1/99)——————(1/63)
Ratio = 7 : 11
Required quantity of the second mixture to make the third mixture
= (11/18)*36 = 22 litres

5. A vessel which contains 100 litres of salt and sugar solution in the ratio of 22 : 3 . From the vessel 40 litres of mixture is taken out and 4.8 litres of pure salt solution and pure sugar solution , both are added to the mixture . What is the percentage of the quantity of sugar solution in the final mixture less than the quantity of salt solution?
A) 72(1/4)%
B) 78(1/2)%
C) 70(1/5)%
D) 74(1/3)%
E) 79(1/6)%

View Answer

 Option E
Solution:
40 L is taken out remaining 60 L
salt solution = (22/25)*60 = 52.8 L
sugar solution = (3/25)*60 = 7.2 L
On adding salt and sugar solution
salt solution = 52.8 + 4.8 = 57.6 L
sugar solution = 7.2 + 4.8 = 12 L
Require % = (57.6 – 12)/57.6 = 79(1/6)%

6. The average marks of the students in four sections P, Q ,R and S together is 60% . The average marks of the students of P, Q, R and S separartely are 45% , 50%, 72% and 80% respectively. If the average marks of the students of P and Q together is 48% and that of the students of Q and R is 60%. What is the ratio of number of students in sections A and D ?
A) 7 : 5
B) 4 : 3
C) 2 : 1
D) 3 : 2
E) 5 : 3

View Answer

Option B
Solution:
A —————— D
45————80
——60
20———15
4 : 3
Hence , the required ratio = 4 : 3

7. A shopkeeper has two types of wheat . The percentage of first type of wheat is 80% and the percentage of second type of wheat is 60%. If he mixes 28kg of first type of wheat to the 32 kg of second type of wheat , then find the percentage of resultant wheat in the mixture.
A) 66
B) 60.15
C)75.12
D) 69.33
E) 58.05

View Answer

Option D
Solution:
Type I ————- Type II
60——————80
————-x
32——————-28
8 : 7
7 : 8 (reverse ratio)
Now,(80-60)*7/(7+8) = 20 *(7/15) = 9.33
Required % = 60+9.33 = 69.33

8. From a container of wine , 8 litres of wine is drawn and replace the same quantity with water. This is performed three more times, now the ratio of the quantity of wine to that of water in the container becomes 16 : 65. What is the initial quantity of wine in the container?
A) 26 L
B) 28 L
C) 24 L
D) 22 L
E) 20 L

View Answer

Option C
Solution:

Let x be the initial quantity of the wine . After 4 operations the quantity of wine left
= [x{1-(8/x)^4}]L
=> [x{1-(8/x)}^4] = 16 / 81
=>{1 – (8/x)}^4 = 16/81
=> (x -8)/x = 2/3
=> x = 24 L

9. The price of the diesel is Rs. 70 per litre and the price of the petrol is Rs. 40 per litre. If the profit after selling the mixture at Rs. 75 per litre be 25 %. Find the ratio of the diesel and petrol in the mixture.
A) 5 : 4
B) 4 : 3
C) 3 : 2
D) 2 : 1
E) 1 : 3

View Answer

Option D
Solution:
25% = ¼
CP = 4, SP = 5
SP — 5 ===== 75
1 ====== 15
CP = 4 * 15 = 60
Diesel ———— Petrol70 —————-
40
————-60
20 —————- 10
ratio = 2 : 1

10. There are two factories, one in India and another in US. Mr. Anish purchased these two factories for total 80 crores. Later on, he sold the Indian factory at the rate of 16% profit and the US factory at 32% profit, thereby he gained 20%. What is the selling price of the factory?
A) 84 cr.
B) 75 cr.
C)69.6 cr.
D) 68.5 cr.
E) 70 cr.

View Answer

Option C
Solution:
Indian Factory ———— US factory

16————————32
————————-20
12————————4
= 3 : 1
The CP of Indian Factory = (80/4)*3 = 60 crores
SP = 69.6 crores

1. A chemist has 10L of a solution that is 10% nitric acid by volume. He wants to dilute the solution to 4% strength by adding water. How many litres of water must be add?
A) 40L
B) 33 L
C) 25L
D) 15 L
E) 20L

View Answer

 Option D
Solution:
Quantity of nitric acid = 10 *(1/10) = 1 L
Water = 10 – 1 = 9 L
Let x litre of water be added,
(10 + x) * (4/100) = 1
=> x = 15 L

2. A bottle contains (3/4) of milk and the rest water. How much of the mixture must be taken away and replaced by an equal quantity of water so that the nixtude has half milk and half water?
A) 42(1/4)%
B) 33(1/3)%
C)22(1/3)%
D) 18(1/2)%
E) 21(1/2)%

View Answer

 Option B
Solution:
Ratio of milk : water = 3 : 1
water = (1/4)*100 = 25
Let x L is taken out , then
qty. of milk left= (3 – 3x/4)
water left = (1 – x/4) + x
Now , 3 – 3x/4 = (1 – x/4) + x

=> x = 4/3
Required % = 4/(3*4)*100 = 33(1/3)%

3. P and Q are two alloys of gold and copper prepared by mixing metals in the ratio 7 : 2 and 7 : 11 resp. If equal quantities of the alloys are melted to form a third alloy R, Find the ratio of gold and copper.
A) 6 : 7
B) 7 : 5
C) 4 : 3
D) 5 : 6
E) 3 : 2

View Answer

 Option B
Solution:
In 1 kg of alloy P, Gold = 7/9
Copper = 2/9
In 1 kg of alloy Q, Gold = 7/18
Copper = 11/18
Therefore, Ratio of Gold and Copper in alloy R
= 7/9 + 7/18 : 2/9 + 11/18
= 21 : 15 = 7 : 5

4. A container has 30 L of water. If 3 L of water is replaced by 3 L of spirit and this operation is repeated twice , what will be the quantity of water in the new mixture?
A) 27.1 L
B) 25.5 L
C) 14.4 L
D) 24.3 L
E) 22 L

View Answer

 Option D
Solution:
Suppose a container contains x units of liquid from which y units are taken out and replaced by water. After n operations, the quantity of pure liquid.
= x(1 – y/x)^n units
= Remaining water = 30(1 – 3/30)^2 = 24.3 L

5. Two barrels contain a mixture of ethanol and gasoline. The content of the ethanol is 60% in the first barrel and 30% in the second barrel. In what ratio must the mixtures from the first and the second barrels be taken to form a mixture containing 50% ethanol?
   A) 2 : 1
   B) 2 : 5
   C) 1 : 3
   D) 3 : 2
   E) 4 : 5

   View Answer

   Option A
   Solution:
   Mixture I ————— Mixture II
   Ethanol – (3/5)———Ethanol- (3/10)
   ———————(1/2)
   (1/5)————————(1/10)
   = 2 : 1

6. A solution of sugar syrup has 15% sugar. Another solution has 5% sugar. How many litres of the second solution must be added to 20 L of the first solution to make a solution of 20% sugar.
   A) 60 L
   B) 45 L
   C) 50 L
   D) 30 L
   E) 20 L

   View Answer

   Option E
   Solution:
   Let x L of second solution must be added.
   Then, [15*20 + 5*x]/(20 + x) = 10
   => x = 20 L

7. A person has a chemical of Rs. 25 per litre. In what ratio should water be mixed in that chemical, so that after selling the mixture at Rs. 20 per litre he may get a profit of 25%?
   A) 9 : 15
   B) 10 : 13
   C) 16 : 9
   D) 15 : 22
   E) 21 : 17

   View Answer

   Option C
   Solution:
   Selling price of mixture = Rs. 20
   Cost price of mixture = (100/125)*20 = Rs.16
   Rule of mixture
   25————————0
   ————16
   16————————9
   So, the required ratio = 16 : 9

8. Three containers X, Y and Z are having mixtures of milk and water in the ratio 1 : 5 , 3 : 5 and 5 : 7 resp. If the capacities of the containers are in the ratio 5 : 4 : 5, then find the ratio of the milk to the water, if the mixtures of all the three containers are mixed together.
   A) 44 : 119
   B) 24 : 111
   C) 46 : 143
   D) 53 : 115
   E) 55 : 157

   View Answer

   Option D
   Solution:
   Ratio of milk and water
   = [(1/6)*5 + (3/8)*4 + (5/12)*5] : [(5/6)*5 + (5/8)*4 + (7/12)*5] = 53 : 115

9. How many kg of sugar costing Rs. 5.75 per kg should be mixed with 75 kg of cheaper sugar costing Rs. 4.50 per kg so that the mixture is worth Rs. 5.50 per kg ?
   A) 440 kg
   B) 300 kg
   C) 112 kg
   D) 225 kg
   E) 320 kg

   View Answer

   Option B
   Solution:
   Sugar I —————- Sugar II
   5.75 ————————-4.50
   ————5.50
   1————————0.25

ratio = 4 : 1
The required qty. of sugar I = (75/1)*4 = 300 kg

10. One test tube contains some acid and another test tube contains an equal quantity of water. To prepare a solution, 20 g of the acid is poured into the second test tube. Then, two-thirds of the so formed solution is poured from the second test tube into the first. If the fluid in the first test tube is four times that in second, what quantity of water was taken initially.
A) 150 g
B) 120 g
C) 90 g
D) 100 g
E) 150 g

View Answer

Option D
Solution:
Initially, let x g of water and Acid was taken. Initially 1st process
First test tube = (x − 20) g
Second test tube = (x + 20) g
2nd process
First test tube = (x − 20) + (x + 20)*(2/3)
Second test tube = (x + 20)*(1/3)
Now,
(x -20) + (2/3)(x +20) = 4*(1/3)(x + 20)
=> x = 100 g

1. A shopkeeper sells two types of books national books and international books .He sells national books at Rs. 18 / book and incurs at loss of 10% whereas on selling the international books at Rs. 30 / book ,he gains 20 % .Find the ratio of the national and international books such that he can gain a profit of 25% by selling the combined books at 27.5/ book ?
A) 5:6
B) 5:2
C) 4:5
D) 2:3
E) 4:7

View Answer

Option B
Solution:
Loss at national books = 10% = 1/10
SP -> 9 = 18
1 = 2
CP -> 10 = 20
Gain at international books = 20 % = 1/5
SP -> 6 = 30
1 = 5
CP ->5 = 25
CP = 4 *5.5 = 22
National
Books   International Books
20   25

.   22
5   2

2. One test tube contains some acid and another test tube contains an equal quantity of water .To prepare a solution , 20 g of the acid is poured into the second test tube .Then , two –third of the so- formed solution is poured from the second tube into the first .If the fluid in the first test tube is four times that in the second ,what quantity of water was taken initially ?
A) 90 g
B) 70 g
C) 154 g
D) 100g
E) 180 g

View Answer

Option D
Solution:
Let x g of water was taken initially .
1st process
First test tube (x- 20)
second test tube (x +20)
2nd process
First test tube = [(x-20) +2/3 (x+20)]
Second test tube = 1/3(x+20)
Now ,
(x -20) + 2/3(x+20) = 4* (1/3)(x+20)

=> x = 100 g

3. Two brands of detergents are to be combined . Detergent A contains 40 % bleach and 60 % soap . While detergent B contains 25 % bleach and 75% soap . If the combined mixture is to be 35 % bleach .What % of the final mixture should be detergent A?
A) 30%
B) 45.64%
C)   20%
D) 32.5%
E) 66.67%

View Answer

Option E
Solution:

A		B
40		25
.	35	
10		52
:	1	

Therefore ,
% of detergent in A = (2 /3) *100 =

4. A thief has stolen 15 L of beer from a container and replaced with the same quantity of water .He again repeated this process 3 times .Thus the ratio of the beer become 343 :169 .Find the initial amount of beer in the container .
A) 90 L
B) 120 L
C) 140 L
D) 110 L
E) 80 L

View Answer

Option B
Solution: The initial amount of beer in the container was =343 + 169 = 512 L
Initial amt. of beer : After mixed with water
512 : 343
Taking cube roots on both the sides,
8 :7
For 1 unit of beer -> 15 L
For 8 units of beer -> 120 L

5. A tank which contains a mixture of syrup and water in ratio 15:6. 25.5 litres of mixture is taken out from the tank and 2.5 litres of pure water and 5 litres of syrup is added to the mixture. If resultant mixture contains 25% water, what was the initial quantity of mixture in the tank before the replacement in litres?
A) 77.7
B) 70.78
C) 75.6
D) 80.5
E) 76

View Answer

Option A
Solution:
Quantity of Syrup = 15x
Quantity of water =6x
Total = 21x
Resultant Mixture = 21x – 25.5 + 2.5 + 5 = 21x – 18
Resultant water = 6x – 25.5 * (6/21) + 2.5 = 6x – 7.28
Resultant mixture contains 25% water
(21x – 18)*25/100 = 6x – 7.28
x = 3.7
Initial quantity = 21*3.7 = 77.7

6. Ram covered a distance of 200km in 10 hrs . The first part of his journey is covered by auto ,then he hired a car .The speed of the auto and car is 15 km/hr and 30 km /hr resp. Find the ratio of distance covered by auto and car .
A) 3 : 4
B) 2 : 1
C) 1 : 1
D) 2: 3
E) None of these

View Answer

Option C
Solution:
Speed of the Ram = 200 /10 = 20
km/hrAuto   Car
15km/hr   30km/hr.   20

10   :   5
2   :   1

Now ,
Ratio of distance covered :
Auto   :   Car
2 * 15   :   1 *30
30   :   30
1   :   1

7. 9 L are drawn from a cask full of water
    and it is then filled with milk , 9 L of
    mixture are drawn and the cask is again
    filled with milk .The quantity of water now
    left in the cask to that of the milk in it is 16
    : 9 .How much does the cask hold ?
    A) 30 L
    B) 45 L
    C) 35 L
    D) 50 L
    E) 42 L

View Answer

Option B
Solution:
16 – > water
25 – > milk
=> √(16/25) = 4/5
If 1 -> 9
then 5 = 45 litres

8. If 2 kg metal , of which (1/3) is zinc and
    the rest is copper , be mixed with 3 kg of
    metal , of which (1/4) is zinc and the rest is
    copper . What is the ratio of zinc to copper
    in the mixture ?
    A) 11 : 43
    B) 15 : 37

C) 17 : 43
D) 23 : 74
E) 18 : 52

View Answer

Option C
Solution:
Quantity of zinc in the mixture = 2 (1/3) +
3 (1/4) = (2/3) + (3/4)
=17/12
Quantity of copper in the metal = (3+2) –
(17/12) = 43/12
Therefore , 17 / 12 : 43 /12 = 17 : 43

9. Vessels A and B contain mixtures of milk
    and water in the ratios 4 : 5 and 5 : 1 resp
    .In what ratio should quantities of mixture
    be taken from A and B to form a mixture in
    which milk to water is in the ratio 5 : 4 ?
    A) 5 : 2
    B) 7 : 5
    C) 6 : 11
    D) 8 : 5
    E) 9 : 4

View Answer

Option A
Solution:
Quantity of milk in vessel A = 4 / (4+5) =
4/9
Quantity of milk in vessel B = 5/(5+1) =
5/6
Quantity of milk in resultant mixture = 5 /(
5+4) = 5/9
A   B
4/9   5/6
.   5/9
5/18   1/9
Required ratio= 5:2

10. Two barrels conatin a mixture of ethanol
    and gasoline is 60% in the first barrel and
    30% in the second barrel .In what ratio
    must the mixtures from the first and the
    second barrels be taken to form a mixture

containing 50% alcohol ?
A) 3:4
B) 5:8
C) 1:2
D) 5:4
E) 2 :1

View Answer

Option E
Solution:
Mix. I   Mix. II
3/5   3/10
.   1/2
1/5   1/10
Required ratio = 2 : 1

1. A mixture of a certain quantity of milk with 15ltr of water is sold at 100 paisa per ltr. If pure milk be worth Rs 1.15ltr, then how much milk is there in the mixture?
A) 80ltr
B) 90ltr
C) 100ltr
D) 110ltr
E) 120ltr

View Answer

Option C
Solution:
115………………0
.   100
100……………..15
20………………3
3= 15, 20 = 100

2. In a mixture of 75ltr the ratio of milk to water is 2 : 1. The amount of water to be further added to the mixture so as to make the ratio of milk to water 1 : 2 will be?
A) 45
B) 60
C) 70
D) 75
E) 80

View Answer

Option D
Solution:
.   M : W
BEFORE   2 : 1…………..(1)
AFTER   1*2: 2*2
.   2 :   4………….(2)
multiply 2 in equation (2) to make milk same……so…..1 =25
4 = 100
100 – 25 = 75ltr

3. A container contained 60ltr milk. Out of this 6ltr of milk was taken out and replaced with water. This process was further repeated two times. How much milk is now in container?
A) 42.74
B) 43.74
C) 44.74
D) 45.74
E) 41.74

View Answer

Option B
Solution:
. $6/60 = 1/10 = (1-1/10)^T = (9/10)^{3*T}$
$729/1000*60 = 43.74$ltr

4. In an alloy zinc & copper are in the ratio of 1 :1. In the second alloy the same element are in the ratio 3 : 5. If these two alloys be mixed to form a new alloy in which two elements are in the ratio 2 : 3, find the ratio of these two alloys in the new alloy?
A) 2:3
B) 3:2
C) 1:4
D) 4:1
E) 3:1

View Answer

Option C
Solution:
.   ½…………………..3/8
.   2/5
.   1/40…………………1/10
.   1   :   4

5. In a class of 20 students the average of their marks is 59. If one student left the class

then average become 60. Find the marks of that student?
A) 78
B) 59
C) 40
D) 30
E) 45

View Answer

Option C
Solution:
Average increases by 1 when 1 leaves, so for 19 students::
.   59 – 19 = 40

6. If the sum of 5 consecutive odd number is 265. Then the largest number would be?
A) 57
B) 59
C) 50
D) 40
E) 30

View Answer

Option A
Solution:
.   Average = 265/5 = 53
(average)53…..55……57…….ans is 57

7. In a bag there are three types of coins, 1rupee, 50paisa, 25paisa in the ratio of 5:10:16. The total value is Rs 700. The total number of coins is?
A) 1750
B) 1650
C) 1550
D) 1450
E) 1850

View Answer

Option C
Solution:
.   5x : 10x : 16x
5x + 10x/2 + 16x/4 = 700
14x = 700
x = 50
(5x + 10x + 16x) = (5+10+16)*50 = 1550

8. A can contain a mixture of two liquids P & Q in proportion 3 :5. When 8ltr of mixture

are drawn off and the can is filled with Q, the proportion of P & Q becomes 3:7. How many ltr of liquid P was contained in the can initially?
A) 15ltr
B) 12ltr
C) 16ltr
D) 20ltr
E) 25ltr

View Answer

Option A
Solution:
.   P…………..Q
initial   3…………….5
after   3……………..7
7-5 = 2
2 =8
1 =4
after (7+3) =10= 40ltr
so initial = 3/3+5*40 = 15ltr

9. 300 ltr of mixture contains 20% water in it and rest is milk. The amount of milk that must be added so that the resulting mixture contains 90% milk is?
A) 200ltr
B) 300ltr
C) 250ltr
D) 350ltr
E) 400ltr

View Answer

Option B
Solution:
.   20% of 300 = 60
now we have to make milk 90% then water will become 10%
10% = 60
100% = 600
so 600 – 300 = 300ltr

10. 8kg of tea consisting Rs240 per kg is mixed with 9kg of tea costing Rs25o per kg. The average price per kg of the mixed tea is ?
A) 245.29
B) 246.29
C) 244.29
D) 247.29
E) 248.29

View Answer

 Option A
Solution:
.   8*240 + 9*250/17 = 4170/17
= 245.29

1. The ratio of A & B in a mixture is 8:1, 15ltr
    of mixture is taken out and same amount of
    B is added, now ratio become 4:3. Find the
    initial amount of A in the mixture
    (approx)?
    A) 24
    B) 37
    C) 34
    D) 40
    E) 28

View Answer

Option B
Solution:
initial …………A : B
.   8 : 1 →(1)
Find   4 : 3 →(2)
Make value of A same, multiply by 2 in
equation (2)
A : B
8 : 1
8 : 6 (+5)
5 = 15
1=3
8+6=14 =42
So initial = 8/9 *42 = 37.33

2. A shopkeeper sells his milk at cost price
    but he add some water and earn 16(2/3)%
    profit. Find the ratio of milk and water?
    A) 6:1
    B) 1:6
    C) 5:1
    D) 1:5
    E) 5:6

View Answer

Option A
Solution:

In this case we will let milk 100 and water
profit
Milk : Water
100 : 16(2/3)%
6 : 1

3. There is 70ltr milk in a container. From this
    7ltr of milk is taken out and added some
    quantity of water. This process is repeated
    two more times. Find the remaining milk in
    container?
    A) 45ltr
    B) 48.03ltr
    C) 50ltr
    D) 51.03ltr
    E) 56.22ltr

View Answer

Option D
Solution:
7/70 =1/10, Remaining =9/10
$(9/10)^T$ * Total = Milk
$(9/10)^3$ * 70 = 51.03 ltr

4. A man has to distribute Rs65 in a class of
    50 students. He gives 1.5 rupee to boys and
    1 rupee to girls each. Find how many girls
    are there in the class?
    A) 30
    B) 20
    C) 15
    D) 25
    E) 22

View Answer

Option B
Solution:
Mean price = 6500/50 = 130 paisa
Boys………..Girls
150…………100
.   130
30……………20
3 : 2
2/ 5* 50 = 20

5. In an alloy the ratio of copper and
    aluminum is 4:5 and in other alloy the ratio
    of copper and aluminum is 6:7. In what

ratio these alloy should be taken to make ratio of copper and aluminum is 5:6?
A) 5 : 11
B) 11 : 5
C) 13 : 9
D) 9 : 13
E) 12 : 7

View Answer

Option D
Solution:
C………………..A
4/9……………6/13
.   5/11
1/143…………1/99
9 : 13

6. In a bag there are three types of coins, 1rupee, 50 paisa and 25paisa in the ratio of 5:10:24. There total value is Rs208. The total number of coins is?
A) 507
B) 208
C) 961
D) 744
E) 602

View Answer

Option A
Solution:
first make ratio according to rupee
5 : 10/2 : 24/4
5 : 5 : 6
16 =208
1 =13
(5+10+24) = 39 = 39*13 = 507

7. 400gm of sugar solution has 30% sugar in it. How much sugar should be added to make it 50% in the solution (in gm)?
A) 120
B) 60
C) 100
D) 160
E) 180

View Answer

Option D
Solution:
30% of 400 =120
Remaining =280, this will remain same in another solution but now it will become 50%. So
50% = 280
100% = 560
Difference = 560-400 = 160

8. A mixture of certain quantity of milk with 15ltr of water is sold at 80paisa/ltr. If pure milk be worth Rs1.10 per ltr. How much milk is there in the mixture?
A) 50 ltr
B) 40 ltr
C) 60 ltr
D) 70 ltr
E) 30 ltr

View Answer

Option B
Solution:
Milk……..Water
110………….0
.   80
80………….30
8 : 3
3 = 15, so 8 = 40

9. A merchant borrowed Rs3500 from two money lenders. For one loan he paid 14% p.a and for other 18% p.a. the interest paid for one year was Rs525. How much did he borrow at 18%p.a?
A) Rs875
B) Rs625
C) Rs750
D) Rs1000
E) Rs925

View Answer

Option A
Solution:
525/3500 * 100 = 15%
14………….18
.   15

3……………..1
1/4 * 3500 = 875

10. How many kg of salt at42 paisa per kg must a man mix with 25kg of salt at 24 paisa per kg, so that he may on selling the mixture at 40 paisa per kg, gain 25% on the outlay?
A) 15kg
B) 20kg
C) 25kg
D) 30kg
E) 18kg

View Answer

Option B
Solution:
25% =1/4
CP……….SP
4………….. 5
4 = 32, 5 = 40
42…………24
.   32
8…………..10
4 : 5→*5= 25kg
So 4 * 5 = 20

1. After selling an article a man gains 25%. Also he uses a false weight of 10%. Find the total profit earn by him?
A) 37.5%
B) 35%
C) 37(8/9)%
D) 38(8/9)%
E) 39%

View Answer

Option C
Solution:
in this case we keep 1000 in the middle, Add profit one side and minus weight on the other side, to find net profit.
.   1000
(weight)900   1250(profit)
.   1250-900= 350
350/900 * 100= 38(8/9)%

2. A man wants to gain 20% after selling milk at cost price. So in what ratio he has to add water to earn this profit?
A) 5:1
B) 1:4
C) 1:5
D) 4:1
E) 1:3

View Answer

Option C
Solution:
Whenever product has to sale on cost price to get profit. Then keep profit one side & 100 on the other side. To get ans.
W : M
20 : 100
1 : 5

3. A shopkeeper has two types of article. The CP of 1st article is 20Rs/kg and other article is X Rs/kg. He has quantity of 1st article is 10kg and other article is 20 kg. He sold the mixture of these article at Rs 39/kg with a profit of 30%. Find the value of X?
A) 70Rs/kg
B) 35Rs/kg
C) 60Rs/kg
D) 30Rs/kg
E) 40Rs/kg

View Answer

Option C
Solution:
30% profit = 30/100 = 3/10
CP = 10
SP = 10+3 = 13
13 ===39
So 10 ===10*3 = 30
20…………….x
……….30
10…………..20 [Given]
1 : 2
So (30-20)/(x-30) = 2/1
x = 35

4. A sugar solution of 60kg has 20% sugar in it. How much sugar must be added in this

to make it half of the solution?
A) 18kg
B) 96kg
C) 24kg
D) 36kg
E) 42kg

View Answer

Option D
Solution:
20% of 60kg = 12
Sugar = 12
Water= 48
Now if we add only sugar then the value of water will be constant and that will be 50% of solution
So : 50% = 48
100%= 96 new solution
Now 96-60= 36kg

5. A man has 80 pens. He sells some of these at 15% profit and the rest at 10%loss. Overall he gets a profit of 10%. Find how many pens were sold at 15% profit ?
    A) 16
    B) 64
    C) 40
    D) 72
    E) None of these

View Answer

Option B
Solution:
+15………………-10
………..+10
20   5
4 : 1
4/(4+1) * 80= 64 pens.

6. How much tea at Rs4 a kg should be added to 15kg of tea at Rs10 a kg so that the mixture be worth Rs6.50 a kg?
    A) 15
    B) 35
    C) 25
    D) 21
    E) 18

View Answer

Option D
Solution:
4 ………………10
..   6.5
3.5……………..2.5
21= 3*7 …….. 5*3=15

7. There are two types of jar. In the 1st jar the ratio of copper and aluminium is 1:2 and in the 2nd Jar is 1: 4. In what ratio these two jar should be mix to make 3rd jar In which the ratio of copper & aluminium become 1:3?
    A) 3:5
    B) 5:3
    C) 2:5
    D) 5:2
    E) 2:3

View Answer

Option A
Solution:
copper in 1st = 1/3
Copper in 2nd = 1/5
copper in 3rd = ¼
1/3   1/5
.   1/4
1/20   1/12
3 : 5

8. A butler stole wine from a butt of sherry which contained 50% spirit and he replaced it with wine which contains 20% spirit. Now the strength of butt remain only 30%. How much of the butt did he steal?
    A) 1/3
    B) 1/2
    C) 2/3
    D) 1/4
    E) None of these

View Answer

Option C
Solution:
50%………………20%
….…..30%

10…………….20
1 : 2
Both types of wine were in the ratio 1 : 2
Butt with alcohol of 50% strengeth = 1/3
So stole = 2/3 part

9. There are 65 students in a class. 39 rupees were distributed among them so that each boy gets 80 paisa and each girl gets 30 paisa. Find the number of girls in the class?
A) 39
B) 26
C) 40
D) 30
E) 35

View Answer

Option B
Solution:
The average money received by every student = 3900/65 = 60paisa
Boy   girl
80   30
…   60
30   20
3 : 2
Girl = 2/5 *65 = 26

10. A container has 40 l of milk. From this, 4 l of milk is taken out and replaced with water. Now 4 l of mixture is taken out and replaced with water again. Find how much quantity of milk is remaining in the container?
A) 32.4 l
B) 32 l
C) 31.4 l
D) 31 l
E) 30.4 l

View Answer

Option A
Solution:
4/10 = 1/10 out so remaining = 9/10
The process is repeated 2 times, so multiply it 2 times and multiply it with total quantity also
So (9/10)2 * 40 = 32.4 l

1. A container contains 80 Litre milk. From this container 8 Litre milk was taken out and replaced with water. This process was further repeated two times. How much milk is now contained in the container?
A) 58.32 L
B) 57.32 L
C) 59.32 L
D) 56.32 L
E) 55.32 L

View Answer

Option A
Solution:
Remaining Quantity= x*(1-y/x)^n
where x= quantity of initial liquid=80 here;
y= quantity of newly added liquid=8 here
n= number of times the process is repeated= 3 here
80*(1-8/80)^3 = 58.32 L

2. A trader sold two articles in Rs 800. On one he gained 33(1/3)% and on another he gained 20%. In this whole transaction he gained 25%. Find the cost price of the second article (the one sold at 20% gain)
A) Rs 240
B) Rs 400
C) Rs 300
D) Rs 500
E) Rs 550

View Answer

Option B
Solution:
At 25% profit and SP=800; CP=640
33(1/3)   20
.   25
5   25/3
3:5 (by alligation)
hence CP od second article=5/8*640=400

3. A mixture of certain quantity of milk with 20 Litre of water is sold at 80 paise per litre. If pure milk be worth Rs 1.20 per

litre. How much milk is present in the mixture?
A) 20 L
B) 25 L
C) 30 L
D) 40 L
E) 35 L

View Answer

Option D
Solution: By alligation
120   0
.   80
80   40
=>2:1
1=20 L
hence 2=40 L

4. In an alloy, zinc and copper are in the ratio 1:3. In the second alloy the same elements are in the ratio 2:3. If what proportion should the two alloys be mixed so as to form a new alloy in which zinc and copper are in the ratio 1:2.
    A) 5:4
    B) 4:5
    C) 5:6
    D) 6:5
    E) 2:3

View Answer

Option B
Solution:
1/4   2/5
.   1/3
1/15   1/12
=>4:5

5. 400 grams of sugar solution has 40% sugar in it. How much sugar should be added to make it 50% in the solution?
    A) 60 gm
    B) 70 gm
    C) 80 gm
    D) 90 gm
    E) 160 gm

View Answer

Option C
Solution:
40% of 400= 160 gm
remaining=240. This remaining quantity will remain constant as only sugar is to be added. For sugar to be 50% , the quantity of sugar should be equal to 240
hence more to be added=240-160=80

6. A dishonest milkman professes to sell his milk at cost price, but he mixes it with water and thereby gains 33(1/3)%. The percentage of water in the mixture is?
    A) 20%
    B) 33 (1/3) %
    C) 25%
    D) 30%
    E) 35%

View Answer

Option C
Solution:
Ratio of water : milk can be found out as
Water: Milk=33(1/3):100 =1:3
hence water = 1/(1+4)*100=25%

7. A person has a chemical of Rs 15 per litre. In what ratio should water be mixed in that chemical so that after selling the mixture at Rs 12/litre he may get a profit of 20%.
    A) 1:2
    B) 2:1
    C) 1:3
    D) 3:1
    E) 3:2

View Answer

Option B
Solution: With 20% profit, and SP=12, CP=10
By alligation,
15   0
10
10   5
=>2:1

8. If 2 kg of metal, of which 1/3 is zinc and the rest is copper be mixed with 3 kg of metal of which ¼ is zinc and the rest is copper, What is the ratio of zinc to copper in the mixture?
   A) 2:3
   B) 3:2
   C) 43:17
   D) 17:43
   E) 15:17

   View Answer

   Option D
   Solution:
   Zinc=2*1/3 + 3*1/4=17/12
   Copper=5-17/12=43/12
   hence Z:C=17:43

9. A man has 90 pens. He sells some of these at a profit of 15% and the rest at 9% profit. On the whole transaction he gets a profit of 11%. How many pens did he sell at 9% profit?
   A) 60
   B) 50
   C) 40
   D) 70
   E) 30

   View Answer

   Option A
   Solution:
   15   9
   .   11
   2   4
   => 1 : 2
   hence pen at 9% profit= 2/3*90=60

10. A butler stole wine from a butt of sherry which contained 35% spirit and he replaced what he had stolen by wine containing only 20% spirit. The butt was then 25% strong only. How much of the butt did he steal?
    A) 1/3
    B) 2/3
    C) 3/4
    D) 1/4

E) 1/2

View Answer

Option B
Solution:
35%   20%
25%
5   10
=>1:2
The butt with alcohol of 35%=1/3 means butler stole 1-1/3=2/3 part

1. A container contains some amount of milk. A milkman adds 200 ml of water for each one litre of milk in the container. 6 litres of the mixture is sold from the container and 10 litres of milk is added to the remaining mixture. If now the ratio of milk to water in container is 25 : 3, find the initial quantity of milk in the container.
   A) 26 l
   B) 29 l
   C) 30 l
   D) 20 l
   E) None of these

   View Answer

   Option D
   Solution:
   Let initial quantity of milk = 10x litres, For each 1 litre, 200 ml of water is added, so after adding water, quantity of mixture become = 12x litres
   Now 6 l of mixture is sold, and 10 l of milk is added
   So remaining quantity is (12x – 6 +10) = (12x + 4)
   In this final quantity, milk = 10x – (10x/12x * 6) + 10 = (10x + 5)
   So (10x+5)/(12x +4) = 25/(25+3)
   Solve, x = 2
   So initial quantity of milk = 10x = 20 litres

2. A container contains 64 litres of pure milk. One-fourth of the milk is replaced by water. Again the operation is performed,

and one-fourth of mixture is replaced by water. Find the final ratio of milk to water in the container.
A) 11 : 8
B) 10 : 7
C) 9 : 7
D) 10 : 9
E) 12 : 7

View Answer

Option C
Solution:
After 2 operations, final quantity of milk = $64 (1 - 1/4)^2 = 36$ litres
So quantity of water is $64 - 36 = 28$ l
So ratio is $36 : 28 = 9 : 7$

3. In what ratio do the three varieties of rice costing Rs 6, Rs 8 and Rs 9 per 100 grams should be mixed in order to obtain a mixture costing Rs 84 per kg?
A) 2 : 3 : 4
B) 1 : 3 : 6
C) 1 : 2 : 5
D) 3 : 4 : 2
E) None of these

View Answer

Option B
Explanation:
Rs 6, Rs 8 and Rs 9 per 100 grams means Rs Rs 60, Rs 80 and Rs 90 per kg
84 is middle number between 80 and 90
So take ratios as:
60…………………..90
……………84
6…………………..24
Ratio is 6 : 24 = 1: 4
AND
80…………………..90
……………84
6…………………..4
Ratio is 6 : 4 = 3: 2
So final ratio is 1 : 3 : (4+2) = 1: 3: 6

4. Two containers A and B contain mixture of milk and water such that A contains 40%

milk and B contains 22% milk. Some part of mixture in container A is replaced by equal quantity of mixture from container B. How much quantity of the mixture was replaced if final mixture contains 32% milk?
A) 3/7
B) 2/5
C) 7/10
D) 4/7
E) 5/9

View Answer

Option E
Solution:
By the method allegation:
Reaming………………Replaced
22……………………….…..40
………………..32
8…………………..………..10
So ratio is 8 : 10 = 4 : 5
So replaced part is 5/(4+5) = 5/9

5. A container filled of milk-water mixture contains 75% milk. 5 litres of this mixture is replaced by water. Next, 10 l of the mixture is replaced by water. If the final percentage of milk in the container is 54%, find the initial quantity of mixture in the container.
A) 50 l
B) 40 l
C) 60 l
D) 70 l
E) 55 l

View Answer

Option A
Solution:
Let initial quantity of mixture = x l
initial quantity of milk = 0.75x l
So $0.75x (1 - 5/x) (1 - 10/x) = 0.54 x$
Solve, $(x-5)(x-10) = 18x^2/25$
Use options to check the answer.

6. How much milk (in litres) costing Rs 60 per litres should be mixed with 35 litres of

milk costing Rs 84 per litres so that there is a profit of 50% on selling the mixture at Rs 111 per litres?
A) 25 l
B) 32 l
C) 17 l
D) 36 l
E) 46 l

View Answer

 Option A
Solution:
CP of mixture = 100/150 * 111 = Rs 74
Let x l of milk to be mixed. So by method of allegation:
(x)……………..…..(35)
60…………………..84
………….74
10……………………..14
So ratio is 10 : 14 = 5 : 7
So x/35 = 5/7
x = 25 l

7. A container whose capacity is 60 l contains milk and water in the ratio 3 : 2. How much quantity of the mixture should be replaced with pure milk so that in the final mixture, ratio of milk to water is 7 : 3?
A) 22 l
B) 20 l
C) 15 l
D) 17 l
E) 14 l

View Answer

 Option C
Solution:
In 60 l of mixture, milk = 3/5 * 60 = 36 l, so water = 24 l
Let x litres of mixture is replaced
So
Remaining Milk after replacement is = 36 – (3/5)*x + x = 36 + 2x/5
So (36 + 2x/5)/60 = 7/10
Solve, x = 15 l

8. 3 containers having capacities in the ratio 2 : 3 : 1 contain mixture of liquids A and B

such that the ratio of A to B in them is 2 : 3, 1 : 4 and 3 : 7 respectively. If all the three containers are emptied in a single container, what will be the ratio of A to B in the final mixture?
A) 13 : 58
B) 11 : 54
C) 22: 13
D) 17 : 43
E) None of these

View Answer

 Option D
Solution:
2+3 = 5, 1+4 = 5, 3+ 7 = 10
LCM pf 5, 5, 10 = 10
Capacities are in the ratio 2 : 3 : 1
Suppose the capacities are 20, 30 and 10
So A in final mixture is 2/5 * 20 + 1/5 * 30 + 3/10 * 10 = 17
And B in final mixture is (20+30+10) – 17 = 43
So final ratio = 17 : 43

9. 12 litres of water is drawn out from a container full of water and replaced by milk. Again 12 litres of mixture are drawn and the container is again filled with milk. The ratio of final quantity of water to milk in the container is 11 : 25. How much did the container hold?
A) 60 litres
B) 65 litres
C) 72 litres
D) 39 litrers
E) None of these

View Answer

Option C
Solution:
Let x litres is total capacity of container
Using formula, amount of water left = x [1 – 12/x]^2
[1 – 12/x]^2/x = 25/(25+11)
Solving we get, x = 72 l

10. There are two mixtures such that they contain 75% milk and 80% milk

respectively. Some amount from first mixture is mixed with twice the same amount of second mixture. Find the percentage of milk in the resultant mixture?
A) 90.2%
B) 75.9%
C) 84.5%
D) 76.3%
E) 78.3%

View Answer

Option E
Solution:
Let x from first mixture, then 2x form second
So milk from first = (75/100)*x, milk from second = (80/100)*2x
So milk in resultant mixture is (75x/100) + (160x/100) = 2.35x
Total mixture in third is x+2x = 3x
So % of milk is (2.35x/3x)*100

1. A 56 litre mixture contains milk and water in the ratio of 5 : 2 . How much water should be added to the mixture so as make the resultant mixture containing 40% water in it?
    A) 35/6 l
    B) 40/3 l
    C) 29/3 l
    D) 27/2 l
    E) 32/3 l

View Answer

Option E
Solution:
In 56 l, milk = 5/(5+2) * 56 = 40 l, so water = 56 – 40 = 16 l
Final ratio of milk to water will be = 60 : 40 = 3 : 2
Let x litres of water to be added. So 40/(16+x) = 3/2
Solve, x = 32/3 l

2. A mixture of 30 litres contains milk and water in the ratio 7 : 3. 10 litres of the mixture is taken out and replaced with pure

milk and the same operation is repeated one more time. Find the final ratio of milk to water in the mixture.
A) 12 : 7
B) 9 : 4
C) 13 : 2
D) 15 : 7
E) 11 : 5

View Answer

Option C
Solution:
In 30 l of mixture, milk = 7/10 * 30 = 21l, so water = 9 l
let x = amount of water after replacement and y = amount of water before replacement, so y = 9
Now
$x/y = [1 – 10/30]^2$
Solve, x = 4 l
Now since mixture is 30 l only after replacement also. So milk in mixture after replacement = 30 – 4 = 26 l
So final ratio = 26 : 4 = 13 : 2

3. How much milk (in litres) costing Rs 50 per litres should be mixed with 18 litres of milk costing Rs 56 per litres so that there is a profit of 25% on selling the mixture at Rs 65 per litres?
    A) 25 l
    B) 32 l
    C) 17 l
    D) 36 l
    E) 46 l

View Answer

Option D
Solution:
CP of mixture = 100/125 * 65 = Rs 52
Let x l of milk to be mixed. So by method of allegation:
(x)……………..…..(18)
50………………….56
………….52
4………………….…..2
So x/18 = 4/2
x = 36 l

4. A 24 litres of milk and water mixture contains milk and water in the ratio 3 : 5. What litres of the mixture should be taken out and replaced with pure milk so that the final mixture contains milk and water in equal proportions?
   A) 22/3 l
   B) 20/3 l
   C) 3 l
   D) 32/5 l
   E) 24/5 l

   View Answer

   Option E
   Solution:
   In 24 l of mixture, milk = 3/8 * 24 = 9 l, so water = 15 l
   Now since the mixture is to be replaced with pure milk, the amount of mixture will remain same after replacement too.
   In 24 l mixture, to have 12 l water and 12 l milk, 3 l of water should be taken out, since we are only adding milk.
   Let x l of mixture taken out. So 5/8 * x = 3, Solve, x = 24/5 l

5. 25 litres are drawn from a cask full of wine and is then filled with water. This operation is performed one more time. The ratio of the quantity of wine now left in cask to that of the water is 36 : 85. How much wine the cask hold originally?
   A) 66 l
   B) 85 l
   C) 59 l
   D) 55 l
   E) 46 l

   View Answer

   Option D
   Solution:
   Let x l wine was there originally. So
   $36/(36+85) = (1 - 25/x)^2$
   Solve, x = 55 l

6. Out of 2100 kg wheat, some part is sold making 10% profit while the remaining part is sold making 16% profit. If there is an overall profit of 14%, what quantity was sold at 16% profit?

   A) 700 kg
   B) 1300 kg
   C) 1400 kg
   D) 1000 kg
   E) 1100 kg

   View Answer

   Option C
   Solution:
   By method of Alligation:
   10…………………..16
   …………14
   (16-14)…………..(14-10)
   2……………….4
   So 2 : 4 = 1 : 2
   so part at 16% profit = 2/(1+2) * 2100 = 1400 kg

7. Container A and B contains water and alcohol in the ratio 1 : 3 and 3 : 2 respectively. How much amount of mixture from container A should be mixed with 30 l of mixture from container B, so that the resultant mixture contains water and alcohol in the ratio 11 : 12?
   A) 26 l
   B) 16 l
   C) 22 l
   D) 15 l
   E) None of these

   View Answer

   Option B
   Solution:
   Water in A = 1/4. Water in B = 3/5 . And in resultant =11/23
   So by allegation method:
   (x)…………….(30)
   1/4………………..3/5
   ………..11/23
   14/(23*5)…………..21/(23*4)
   Take ratio: 14/23*5 : 21/23*4
   Gives 8 : 15
   So x/30 = 8/15
   Solve, x = 16 l

8. The rice sold by a shopkeeper contains 15% low quality rice. What quantity of good quality rice should be added to 70 kg of rice so that percentage of low quality

wheat becomes 7%?
A) 50 kg
B) 40 kg
C) 90 kg
D) 60 kg
E) 80 kg

View Answer

Option E
Solution:
In good quality rice, there is 0% low quality rice
So method of allegation:
(70 kg)……………………(x kg)
15% ……………………………0%
……………………..7%
7………………………………..8
So 7 : 8
Gives 70/x = 7/8
Solve, x = 80 kg

9. Container A and B contains 25% and 50% water respectively. The rest is milk in both the containers. How much amount should be mixed from container A to some amount in to some amount of container B so as to get 12 litres of new mixture having water to milk ratio 3 : 5?
A) 6 l
B) 8 l
C) 10 l
D) 7 l
E) 5 l

View Answer

Option A
Solution:
In resultant mixture, water is 3/8 * 100 = 75/2%
So by method of allegation:
25%……………………………50%
………………..75/2%
25/2%………………………25/2%
so ratio is 25/2 : 25/2 = 1 : 1
And the total should be 12 l, so 6 l of mixture from A, and 6 l from B.

10. A mixture contains A and B in the ratio of 5 : 3. 16 litres of this mixture is taken out and 5 litres of A is poured in. the new

mixture has ratio of A to B as 11 : 6. Find the total original quantity of mixture.
A) 80 litres
B) 96 litres
C) 98 litres
D) 84 litres
E) 92 litres

View Answer

Option B
Solution:
A = 5x, B = 3x
16 l taken out, so let total mixture now = 5x + 3x + 16 = 8x + 16
Now 5 l of A poured in and then ratio becomes 11 : 6
So (5x+5)/3x = 11/6
Solve, x = 10
So total mixture originally = 8x + 16 = 8*10 + 16 = 96 litres