

Mixture & Alligation Most Asked Common Questions (Last 5 years)

Q1. A vessel contains 30 liters of milk and 6 liters of water, X liter of water is added in it. In final mixture water is 30% of the milk. Find the value of 'X'?

- (a) 3 liters
- (b) 6 liters
- (c) 9 liters
- (d) 12 liters
- (e) 10 liters

Q2. In 64 liter of pure milk, 20 liter of water is mixed and then $\frac{1}{4}$ th of the mixture is taken out. When x liter of water is added again then ratio of water to that of the milk becomes 1:2. Find value of x?

- (a) 10 liter
- (b) 8 liter
- (c) 12 liter
- (d) 6 liter
- (e) 9 liter

Q3. A vessel contains mixture of milk and water in the ration of 3 : 1 respectively. If 20 liters mixture taken out from the vessel and now the difference between milk and water in the remaining mixture is 70 liters, then find initial mixture in vessel (in liters)?

- (a) 240
- (b) 160
- (c) 120
- (d) 80
- (e) 180

Q4. The ratio of milk to water in 60 liters mixture is 7 : 3. Find how much water should be mixed in the mixture so that quantity of milk becomes $33\frac{1}{3}\%$ of resulting mixture?

- (a) 80
- (b) 72
- (c) 68
- (d) 62
- (e) 66

Q5. A container contains total 120 liters mixture of milk and water in which quantity of water is 20 liters. If 36 liters mixture taken out from container and 6 liters milk added, then find quantity of water in what percent (approximate) less than that of milk in final mixture?

- (a) 82%
- (b) 88%
- (c) 78%
- (d) 86%
- (e) 90%



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Q6. A vessel contains mixture of milk and water in the ratio of 5 : 4 respectively. If 20% of the mixture is taken out and 40 liters of pure milk added in the remaining mixture, then the ratio of milk to water becomes 7 : 4. Find the quantity (in liters) of milk in the vessel initially.

- (a) 225
- (b) 125
- (c) 175
- (d) 75
- (e) 275

Q7. A vessel contains 79.99 liters mixture of milk and water in which milk is 50% more than water. 20.03 liters of mixture is taken out and 59.99 liters mixture of milk and water mixed in the remaining mixture into the vessel. If in the resultant mixture the milk becomes two times of the water, then find approximate quantity (in liters) of water added.

- (a) 32
- (b) 44
- (c) 16
- (d) 30
- (e) 28

Q8. 160 liters mixture of milk and water in the ratio of 5 : 3 respectively. 48 liters of mixture is taken out from the vessel and 13 liters of water added in the remaining mixture. Find the difference between quantity of milk and water in the resulting mixture.

- (a) 25 liters
- (b) 24 liters
- (c) 12 liters
- (d) 18 liters
- (e) 15 liters

Solutions

S1. Ans.(a)

Sol. Milk = 30 Liters

In final mixture water = 30% of milk

$$\Rightarrow \frac{30 \times 30}{100} = 9$$

So, 9 = X + 6

$$X = 3$$

S2. Ans.(e)

Sol. Ratio of milk to that of water in the initial mixture = 16:5

$\frac{1}{4}$ th of the mixture = 21 liter

$$\frac{64 - 21 \times \frac{16}{21}}{20 - 21 \times \frac{5}{21} + x} = \frac{2}{1}$$

$$x = 9 \text{ liters}$$

S3. Ans.(b)

Sol. Let total initial mixture in vessel = $4x$

So, milk in vessel = $3x$

And water in vessel = x

ATQ -

$$(3x - 20 \times \frac{3x}{4x}) - (x - 20 \times \frac{x}{4x}) = 70$$

$$(3x - 15) - (x - 5) = 70$$

$$2x = 80$$

$$x = 40$$

So, initial mixture in vessel = $4x = 4 \times 40 = 160$ liters

S4. Ans.(e)

Sol. Total milk in initial mixture = $60 \times \frac{7}{10} = 42$ liters

Total water in initial mixture = $60 \times \frac{3}{10} = 18$ liters

Let x liter water added

$$\frac{42}{18+x} = \frac{1}{2}$$

$$18 + x = 84$$

$$x = 66$$

S5. Ans.(a)

Sol. Ratio of milk to water in mixture = $(120 - 20) : 20 = 5 : 1$

Total water in final mixture = $20 - 36 \times \frac{1}{6} = 14$ liters

Total milk in final mixture = $100 - 36 \times \frac{1}{6} + 6 = 76$ liters

Required percentage = $\frac{76-14}{76} \times 100 = 81.67 = 82\%$

S6. Ans.(b)

Sol. Let total mixture vessel contains initially = $90x$

So, quantity of milk initially = $90x \times \frac{5}{9} = 50x$

And, quantity of water initially = $90x \times \frac{4}{9} = 40x$

20% of total mixture = $90x \times \frac{20}{100} = 18x$

ATQ -

$$\frac{50x - 18x \times \frac{5}{9} + 40}{40x - 18x \times \frac{4}{9}} = \frac{7}{4}$$

$$160x + 160 = 224x$$

$$64x = 160$$

$$x = 2.5 \text{ liters}$$

So, quantity of milk initially = $50 \times 2.5 = 125$ liters

S7. Ans.(c)

Sol. Approx. value asked

Initial quantity of milk in vessel = $80 \times \frac{3}{5} = 48$ liters

Initial quantity of water in vessel = $80 - 48 = 32$ liters

Let quantity of milk in the mixture mixed later = x liters

So, quantity of water in the mixture mixed later = $(60 - x)$

$$\text{ATQ, } \frac{48 - 20 \times \frac{3}{5} + x}{32 - 20 \times \frac{2}{5} + (60 - x)} = \frac{2}{1}$$

$$\frac{36 + x}{84 - x} = \frac{2}{1}$$

$$36 + x = 168 - 2x$$

$$x = 44$$

$$\text{Quantity of water} = 60 - x = 60 - 44 = 16$$

S8. Ans.(e)

Sol. Total quantity of milk in resulting mixture = $160 \times \frac{5}{8} - 48 \times \frac{5}{8} = 70$

Total quantity of water in resulting mixture = $160 \times \frac{3}{8} - 48 \times \frac{3}{8} + 13 = 55$

Required difference = $70 - 55 = 15$ liters

