QUANT

ARITHMATIC — Mixture + Alligation

Sun → Winter

Winter

2 → 1

1 → 2

1000 ml
10 ml

Alligation: Process to produce a product is called alligation.

Mixture: Ratio based mixing.

What differences??

Price

Quality

Structural difference

Time

8 PM

Sources

English → Parents

Ghosted

As an Indian → English

Indian. Pump
137

USA

1

Mixture

CP of cheaper (c)

CP of dearer/costlier (d)

Mean price (m)

$$(m)$$

$$(d-m) \qquad (m-c)$$

$$\frac{\text{Q. of cheaper}}{\text{Q of dearer}} = \left(\frac{d-m}{m-c}\right)$$

Addition & Replacement formula:

Liquid I $a:b$ ⟶ a litre of b is added

~~Liquid 2~~ New Ratio → $a:c$

Quantity of a in liquid mixture → $\left(\frac{ax}{c-b}\right)$

b → $\left(\frac{bx}{c-b}\right)$

Liquid in 2 Containers ..

Milk water

First $a:b$

Second $c:d$

$$\left(\frac{a}{a+b} + \frac{c}{c+d}\right) : \left(\frac{b}{a+b} + \frac{d}{c+d}\right)$$

Replacement of liquid from Container

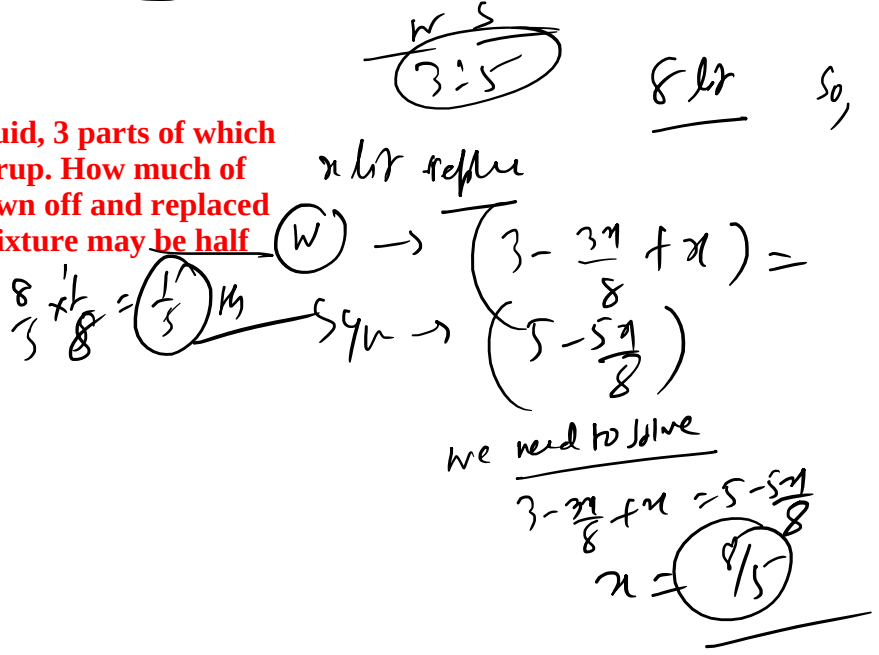
x lit liquid:

It's done n times

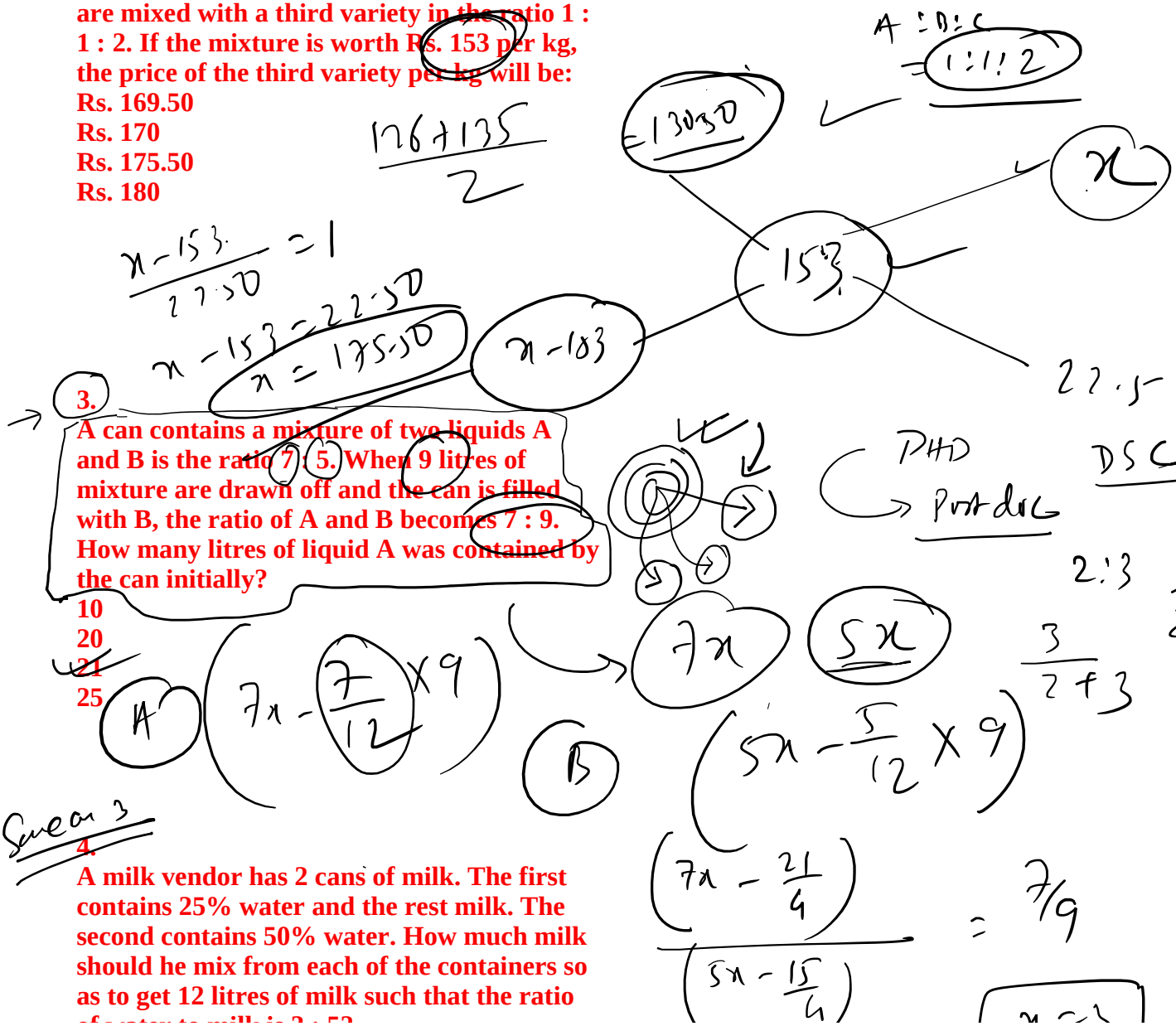
a lit mixture & a lit of water Replaces

$$\left[x\left(\frac{x-a}{x}\right)^n\right]$$

1. **A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?**



2.
Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, the price of the third variety per kg will be:
Rs. 169.50
Rs. 170
Rs. 175.50
Rs. 180



3.
A can contains a mixture of two liquids A and B is the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?
10
20
21
25

4.
A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio

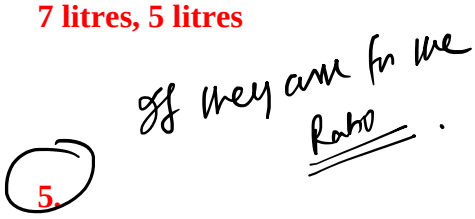
should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5?

4 litres, 8 litres

6 litres, 6 litres

5 litres, 7 litres

7 litres, 5 litres



5.

In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 kg?

3 : 7

5 : 7

7 : 3

7 : 5