

30 cm to 9 m  $\Rightarrow$  ratio

$$30 \text{ cm} : 9 \times 100 \text{ cm}$$

$$30 : 900 = 1 : 30$$

Type 1:-

A jar contains Almonds and cashews in the ratio 2:3. If the total number of nuts in the jar is 100, how many are almonds? How many are cashews?

$$A = 2x$$

$$C = 3x$$

$$A + C = 100$$

$$2x + 3x = 100$$

$$5x = 100 \Rightarrow x = \frac{100}{5} = 20$$

$$\begin{array}{l} A = 2 \times 20 = 40 \\ C = 3 \times 20 = 60 \end{array} \quad \left. \vphantom{\begin{array}{l} A = 2 \times 20 = 40 \\ C = 3 \times 20 = 60 \end{array}} \right\} 100$$

A jar contains Almonds and cashews in the ratio 2:3.

If the number of cashews in the jar is 60, how many are Almonds?

$$\text{let } A = 2x \quad C = 3x$$

$$3x = 60 \Rightarrow x = \frac{60}{3} = 20$$

$$A = 2x \Rightarrow 2 \times 20 = 40$$

$$a:b = \frac{a}{b}$$

Proportion:-

When two or more ratios are equal, they are said to be in proportion.

$$a:b = c:d$$

a, b, c, d are in proportion.

$$\frac{2}{3} = \frac{\text{Almonds}}{60}$$

$$\Rightarrow \text{Almonds} \times 3 = \frac{2 \times 60}{3}$$

$$\text{Almonds} = \frac{2 \times 60}{3} = 40$$

$$A:B = 4:9, \quad B:C = 6:5 \quad \therefore A:B:C = ?$$

|              |              |              |
|--------------|--------------|--------------|
| A            | B            | C            |
| $4 \times 2$ | $9 \times 2$ |              |
|              | $3 \times 6$ | $5 \times 3$ |
| 8            | 18           | 15           |

$$\text{LCM}(9, 6) = 18$$

$$A:B:C = 8:18:15$$

$$A:C = 8:15$$

$$A:B = 7:15$$

$$B:C = 20:3$$

$$C:D = 2:1$$

$$A:B:C:D = ?$$

| A            | B             | C            |
|--------------|---------------|--------------|
| $7 \times 4$ | $15 \times 4$ |              |
|              | $3 \times 20$ | $3 \times 3$ |

$$2$$

$$1$$

$$28 \times 2$$

$$60 \times 2$$

$$9 \times 2$$

$$2 \times 9$$

$$1 \times 9$$

$$56$$

$$120$$

$$18$$

$$9$$

$$A:B:C:D = 56:120:18:9$$

$$A:D = 56:9$$

$$2:3 = \frac{2}{3}:1$$

Step 1:-

$$LCM(15, 20) = 60$$

$\downarrow$   
B parts

$$A:B:C = 28:60:9$$

$$C:D = 2:1$$

Step 2:-

$$LCM(9, 2) = 18$$

$\downarrow$   
parts of "C"

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 per kg?

let the ratio be  $k:1$

$$\text{Cost of Type 1 :- } 15 \times k = 15k$$

$$\text{Cost of Type 2 :- } 20 \times 1 = 20$$

$$\text{Total cost} = 15k + 20$$

$$\text{cost of mixture} = (k+1) \times 16.5$$

$$\text{Cost of mixture} = (k+1) \times 16.5$$

$$15k + 20 = (k+1) \times 16.5$$

$$15k + 20 = 16.5k + 16.5$$

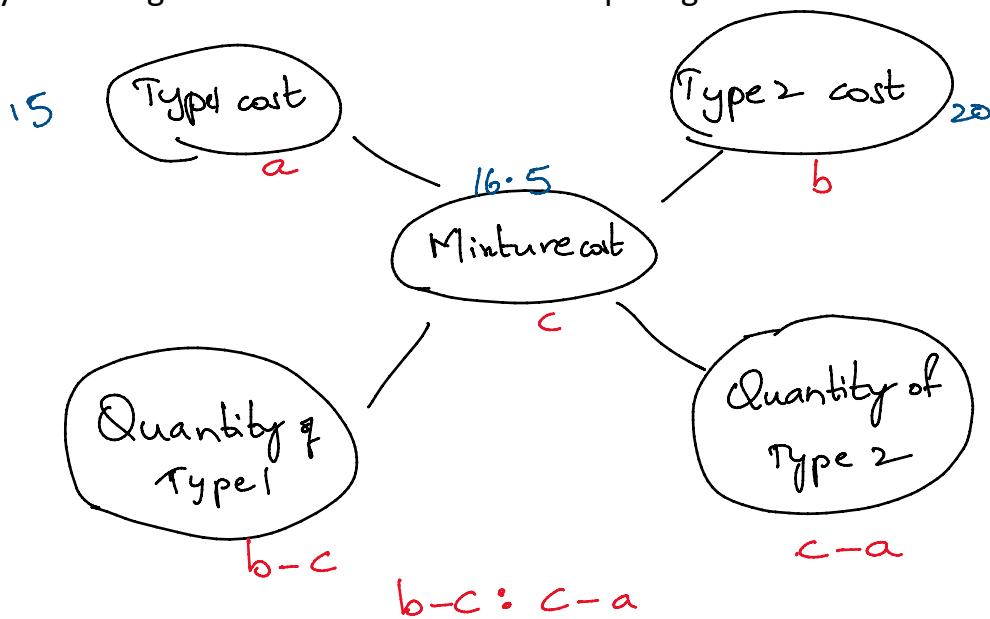
$$16.5k - 15k = 20 - 16.5$$

$$1.5k = 3.5$$

$$k = \frac{35}{15} = \frac{7}{3}$$

Ratio is:-  $\frac{7}{3} : 1$  or,  $7 : 3$

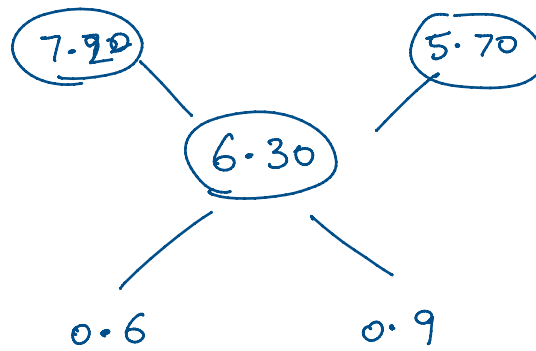
In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 per kg?



$$3.5 : 1.5 = 35 : 15 = 7 : 3$$

Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs. 6.30 a kg.

- A. 1 : 3
- B. 2 : 3
- C. 3 : 4
- D. 4 : 5



$$0.6 : 0.9 = 6 : 9 = 2 : 3$$