Chapter - 8 (Unitary Method)

Unitary Method:— A method in which the value of unit quantity is first obtained to find the value of any required quantity is called unitary method.

Types of Variations:—

i) Direct proportion or Direct Variation.

ii) Indirect proportion or Indirect variation.

Ex - 8(A)

1) Weight of 12 bags of rice = 174 Kg.

∴ " " 1 bag " " = $\frac{174}{12}$ Kg

∴ " " 20 bags " " = $\frac{\overset{58}{\cancel{174}} \times \overset{5}{\cancel{20}}}{\underset{3}{\cancel{12}}}$ Kg.

= 58×5 Kg = 290 Kg

(Ans)

3) Cost of 16 m cloth is ₹ 2200

∴ " " 1 m " " ₹ $\frac{2200}{16}$

∴ " " 6 m " " ₹ $\frac{\overset{275}{\cancel{2200}} \times \overset{3}{\cancel{6}}}{\underset{8}{\cancel{16}}}$ = ₹ 825

(Ans)

5) By ₹ 453 purses can be bought = 6 purses.

∴ " ₹ 1 " " " " = $\frac{6}{453}$ "

∴ " ₹ 604 " " " " = $\frac{\overset{2}{\cancel{6}} \times \overset{4}{\cancel{604}}}{\underset{1}{\cancel{453}}}$ "

= (2×4) = 8 purses. (Ans)

7. To make 25 shirts cloth required $= 55\,m$

$\therefore$ " " 1 Shirt " " $= \dfrac{55}{25}\,m.$

$\therefore$ " " 35 Shirts " " $= \dfrac{55 \times \overset{11}{35} \,\, 7}{\underset{5}{25}}\,m$

$\qquad\qquad\qquad\qquad = 77\,m.$ (Ans)

9. A Journey of 124 Km costs ₹1395.

$\therefore$ " " " 1 Km " ₹ $\dfrac{1395}{124}$

$\therefore$ " " " 240 " " ₹ $\dfrac{\overset{45}{1395} \times \overset{60}{240}}{\underset{31}{124}} = ₹ 45 \times 60$

$\qquad\qquad\qquad\qquad\qquad = ₹ 2700$ (Ans)

12. In 18 hours a hall is painted by 5 men

$\therefore$ In 1 hour " " " " " (5×18) men

$\therefore$ " 10 hours " " " " " $\left(\dfrac{\overset{9}{5 \times 18}}{\underset{2}{10}}\right)$ men $= 9$ men (Ans)

14. 360 men had provisions for 21 days

$\therefore$ 1 man " " " (21×360) days.

$\therefore (360 + 60) = 420$ men had " " $\left(\dfrac{21 \times \overset{18}{360}}{\underset{2}{420}}\right)$ " $= 18$ days.

16. At 70 Km/hr speed a car completes a journey in 18 minutes.

$\therefore$ " 1 " " " " " " " in (18×70) "

$\therefore$ " 84 Km/hr " " " " " " " $\left(\dfrac{\overset{3}{18} \times \overset{105}{70}}{\underset{12\,\,2}{84}}\right)$ "

$\qquad\qquad\qquad\qquad = (3 \times 5)$ minutes

$\qquad\qquad\qquad\qquad = 15$ minutes. (Ans)