

- 10) A batsman played 11 innings and has a certain average. This average increases by 1 runs when his 3 innings of 32 runs, 33 runs, 34 runs are replaced by 3 other innings. Find 3 innings are

$$2 \times 11 = 22$$

$$3N = 32 + 33 + 34 + 22$$

$$3N = 121$$

$$\text{Avg} = \frac{121}{3}$$

$$\text{Avg} = 40 \frac{1}{3} \text{ runs}$$

Chainrule

- 1) 40 boys Paint a house in 96 days by working 9 hours per day. How many hours per day 48 boys need to work so they can paint the house in 45 days

$$40B \times 96D \times 9 \text{ hours} \times 1 = 48B \times 45D \times ? \times 1$$

$$W_1 = 1$$

$$W_2 = 1$$

$$? = 8 \times 12 = 16 \text{ hours}$$

$$M_1 D_1 T_1 W_1 = M_2 D_2 T_2 W_2$$

Men: up pay = D Time (hrs) = T work in

- 2) 54 toy makers can prepare 36 toys per day. A guy wants 416 toys. How many toy makers should he employ to get the job done in 16 days?

$$54 \times 1 \times 416 = ? \times 16 \times 36$$

$$? = 39 \text{ Toyman}$$

- 3) 2500 children in a school had enough chocolates for 40 days. But some children never came to school and chocolates lasted for 50 days. How many never came?

$$2500 \times 40 \times 1 = (2500 - m) \times 50 \times 1 \quad (2500 - m)$$

$$20000 = 12500 - m$$

$$m = 500$$

Some didn't come

- 4) 4 women and 4 children start working together. How many days will they need to paint a house completely, if 3 women alone can paint the house in 18 days and 6 children too can do same in 18 days?

$$3W = 18 \text{ days}$$

$$6C = 18 \text{ days}$$

$$1W = 2C$$

$$4W + 4C = 6C$$

$$8C + 4C = 12C = 6C$$

$$12 \times ? \times 1 = 6C \times 18 \times 1$$

$$? = 90$$

- 5) 12 Pumps of one type Pump 30 litres of water when each is running for 18 hours per day. But a set of 16 pumps of other type Pump 40 litres of water when each is running for 24 hours per day. How efficient are former type of Pumps than latter type

efficient

$$12 \times 18 \times 40 = 16 \times 24 \times 30$$

$$A = 10$$

$$12 \times 18 \times 40 = 16 \times 24 \times 30$$

$$\frac{F}{L} = \frac{A}{3} = F = \frac{A}{3}$$

- 6) 75 girls complete one-third decoration of a building in 40 hours. Now they have only 50 hours to complete rest of decoration. How many more girls are necessary to complete

$$MDTW_2 = MT \cdot p \cdot m$$

$$75 \times 40 \times \frac{2}{3} = (75 + x) \times 50 \times \frac{1}{3}$$

girls

- 7) Rohan wants to build a tank in 20 days for which he hires 60 workers. After 10 days he sees that only 30% work has been done. To speed up the process and get tank built, how many workers were added

$$\frac{60 \times 10 \times 1}{10} = \frac{M \times 10 \times 3}{10}$$

$$M = \frac{100}{3} = 100 \text{ men}$$

$$140 - 60 = 80 \text{ men}$$

$$30\% \quad \frac{30}{100}$$

$$70\% \quad \frac{70}{100}$$

A tank has oxygen for 72 patients and can last for 54 hours. If patients reduce their oxygen consumption by 10%, then 90% can use this oxygen.

$$72 \times 54 = \frac{90 \times 90 \times P}{100} \times 1$$

$$\frac{1 \text{ hr}}{1 \text{ hr}} \quad \frac{1 \text{ Patient}}{72 \text{ p}}$$

$$? = 1 \text{ hr}$$

$$72 \times 54$$

$$- 10\% \quad 90\% \times P = \frac{900}{100}$$

Area & Perimeter

Area - amount of space occupied by 2d figure.

Rectangle $l \times b = \text{Area}$ Perimeter $= 2(l+b)$ Longest Path $=$

$$d^2 = l^2 + b^2 \quad d = \sqrt{l^2 + b^2}$$



Square

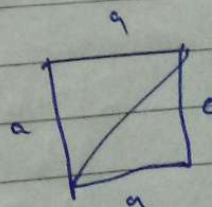
$$\text{Area} = a^2$$

$$\text{Perimeter} = 4a$$

Area \propto side²

$P \propto$ side

a	2a	3a	
a ²	4a ²	9a ²	Area
4a	8a	12a	Perimeter



$$\text{area} = \frac{1}{2} d^2$$