

Ratio & Proportions

(pg # 39)

(Q1) 14 cows eat 63 kg grass in 18 days.
How many cows will eat 770 kg
grass in 28 days?

(sol) ~~By using Ratio~~
 ~~$\frac{63}{18} \times 28 = 14x$~~

grass	days	cows
↑ 63	↓ 18	↑ 14
↑ 770	↓ 28	↑ x

$$x = \frac{18}{14} \times \frac{770 \cdot 14}{63}$$

$$x/14 = 1/7 \times 385/1$$

~~$x = 385/1 \times 1/7$~~

$$x = 770 \text{ cows}$$

(Q2) A factory manufactures 560 fans
in 7 days with 20 machines. How
many fans would be manufactured
in 12 days with 18 machines?

(sol)

days	machines	fans
↑ 7	↑ 20	↑ 560
↑ 12	↑ 18	↑ x

$$x = \frac{18^9}{20} \times 12.6$$

$$x = \frac{54}{35}$$

$$x = \frac{54}{35} \times 560$$

$$x = \frac{6048}{7}$$

$$x = 864 \text{ pairs}$$

(Q3) The price of 80 shirts is Rs 22000. What will be price of 30 shirts?

(sol) $80 : 22000 :: 30 : x$

$$\frac{80}{22000} = \frac{30}{x}$$

$$2x = 30 \times 550$$

$$x = \frac{16500}{2}$$

$$x = 8250 \text{ rupees}$$

(Q4) (a) Hamza spends 20% of his total income on house rent; 70% on domestic expenditure. If his savings is Rs 1800. What will be his total income?

(sol) Expenditure on house rent = 20%

$$= \frac{20}{100}(x)$$

Expenditure domestic = 70%

$$= \frac{70}{100}(x)$$

Total expenditure

$$= \frac{20n}{100} + \frac{70n}{100}$$

$$= \frac{20n + 70n}{100}$$

$$= \frac{90n}{100}$$

$$= \frac{9}{10}n$$

Total savings = Rs 18000

Total income = $n = ?$

\therefore Income = Expenditure + Savings

$$n = \frac{9n}{10} + 18000$$

$$n = \frac{9n + 18000(10)}{10}$$

$$10n = 9n + 180000$$

$$10n - 9n = 180000$$

$$n = 180000$$

Hence, total income is Rs 180000.

(b) Change into fraction 70%

$$70\% = \frac{70}{100} = \frac{7}{10}$$

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Day: _____

(c) Find 15% of 600.

$$= \frac{15}{100} (600)$$

~~100~~

$$= 15 \times 6 =$$

$$= 90$$