Aptitude Assignment 6.

① A does $\frac{4}{5}$ th of work → in $\frac{3}{5}$ of time B.

Work = Time × Efficiency

$$\frac{\left(A \times \frac{3}{5}\right)}{\frac{3}{4}} = \frac{B \times 1}{1}$$

$$A \times \frac{3}{5} \times \frac{4}{3} = B$$

$$4A = 5B$$

$$A : B = 5 : 4$$

They can complete the whole work together in 12 days

$$(5+4)x \times 12 = 108x$$

Time taken by A alone to complete the work = $\frac{108x}{5x} = 21.6$ days

Answer: 21.6 days

② 1M + 3W + 4C — 96 hours

2M + 8C — 80 hours

2M + 3W — 120 hours

10M + 5W — ?

5 | 6 | 4

480

$2M + 8C = 6$

$M + 4C = 3$

$1M + 3W + 4C = 5$

$3 + 3W = 5$

$3W = 2$

$W = 2/3$

$2M + 3W = 4$

$2M + 3 \times 2/3 = 4$

$2M = 2$

$M = 1$

$10M + 5W$

$= 10 \times 1 + 5 \times 2/3$

$= 10 + \frac{10}{3} = \frac{30+10}{3}$

$= 40/3$

Work = Time x Efficiency

$$\text{Time} = \frac{\text{Work}}{\text{Efficiency}} = \frac{480}{40/3} = \frac{12}{480 \times 3} = 36 \text{ hours}$$

10 men and 5 women complete the work in 36 hours

Answer: 36 hours

③ Sale increased by $57\frac{1}{7}\% = \frac{(57 \times 7)+1}{7} = \frac{400}{7} = 57.14\%$

price of ticket increased by $16\frac{2}{3}\% = \frac{(16 \times 3)+2}{3} = \frac{50}{3} = 16.66\%$

Let price = 100

Sale = 200

Revenue = price x sale = 100 x 200 = 20000 Rs

$$\text{price} = \frac{116.66}{100} \times 100 = 116.66$$

$$\text{Sale} = \frac{157.14}{100} \times 200 = 314.28$$

Revenue = 116.66 x 314.28 = 36664 Rs

$$\%\text{ increase in Revenue} = \frac{36664 - 20000}{20000} \times 100 = 83.32\%$$

Answer: 83.32%

④ 1600 soldiers

60 days

900 grams of food every day

Total food Available = $1600 \times 60 \times \frac{900}{1000} = 86400$ kg

Food consumed till 40 days = $1600 \times 40 \times \frac{900}{1000} = 57600$ kg

Food available after 40 days = $86400 - 57600 = 28800$ kg

Soldiers available after 40 days = $1600 - 400 = 1200$

if remaining soldiers consume 1000g per day food will remain for = $\frac{28800}{1200 \times 1} = 24$ days

Answer : 24 days

⑤ Let CP = x

If CP = $\frac{90}{100} \times x$ and SP = $\frac{90}{100} \times x \times \frac{125}{100}$

S.P = $\frac{110}{100} \times x$

Then dealer would have

if the bicycle sold for new SP +60 he would be in 25% profit

∴ new SP − old SP = 60

$$\left(\frac{90}{100} \times x \times \frac{125}{100}\right) - \left(\frac{110}{100} \times x\right) = 60$$

$$1.125x - 1.1x = 60$$

CP = $x = \frac{60}{0.025} = 2400$ Rs

Answer : 2400 Rs