① a) 5 : 15

= 1 : 3

b) 12 : 36 : 9

= 4 : 12 . 3

c) 0·04 : 0·4

= 1 : 10

d) $\frac{4}{5} : \frac{2}{3}$

6 : 5

e) 3 days : 2 weeks

= 3 : 14

f) 350mL : 2·4L

= 7 : 48

② 1 : 3 : 5 $\quad$ 5 = 75cm

a) $\frac{75}{5} = 15$

∴ 1 = 15cm

3 = 45cm

b) 75 + 15 + 45 = 135cm

③ 2 : 2 : 5 : 1 $\quad$ 2 = 400grams

a) $\frac{400}{2} = 200$ $\quad$ b) ratio of 2 $\quad$ c) 400 + 400 + 1000

∴ 200g = 1 serve $\quad$ ∴ 400g $\quad$ = 1800 grams

hence, 1000g

④ 4 : 5 = 846 students

4 + 5 = 9 ⟶ $\frac{846}{9} = 94$

∴ 1 = 94

boys = 4 × 94

= 376

girls = 5 × 94

= 470

⑤ 2 : 2 : 1 ~ 6000mL = 6L

2 + 2 + 1 = 5

$\frac{6000}{5} = 1200$mL

∴ 1 = 1200mL

fruit juice = 2 × 1200 = 2400mL

lemonade = 2 × 1200 = 2400mL

ginger ale = 1 × 1200 = 1200mL

⑥ $\frac{42}{8} = 5.25$ r/o

⑦ 64 words/min

$\frac{1500}{64} = 23.4375$

= 23 min.

⑧ $5kg / 100m^2$

$0.05kg / 1m^2$

a) $11 \times 7.5 = 82.5m^2$

$\therefore 0.05 \times 82.5 = 4.125kg$

$\doteq 4.1kg$

b) $25kg \div 4.1kg$

$= 6$ times

⑨ • $600g = \$2.40 \longrightarrow 100g = \frac{600g}{6} \longrightarrow \therefore \frac{\$2.40}{6} = \$0.40$

• $1kg = \$4.65 \longrightarrow 100g = \frac{1000g}{10} \longrightarrow \therefore \frac{\$4.65}{10} \doteq \$0.47$

• $325g = \$1.40 \longrightarrow 100g = \frac{325g}{3.25} \longrightarrow \therefore \frac{\$1.40}{3.25} \doteq \$0.43$

$\therefore$ regular packet is the best.

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③ Thelma = 7 , Louise = 8

Louise invests $384 000

$\therefore \frac{384\,000}{8} = 48\,000$

$\therefore$ Thelma's investment $= 7 \times 48\,000$

$= \$336\,000$

ANSWERS 4 & 5 = OTHER PAGE NO. 4 & 5!

⑥ 3 : 0.5 : 9.5

a) = 6 : 1 : 19

b) $3.5kg = 3500g$

↓

$6 + 1 + 19 = 26 \longrightarrow \frac{3500}{26} = 134.61538...$

protein is 6 in the ratio

$\therefore 6 \times 134.61538...$

$= 807.6923g$

$\doteq 808g$

c) $20g = 1$ (ratio)

$\therefore 26 \times 20g =$ total

$= 520g$

a) $507g = 19$ (ratio)

$\therefore \frac{507}{19} = 26.6842...g$

protein = 6 (ratio)

$\therefore 26.6842 \times 6 = 160.105...$

$\doteq 160g$ of protein

⑦ - question ⑥ on other page

⑧ 96km/h

a) 96×3.5

$= 336$ km

b) $480\text{km} = 96 \times x$ (x = time)

$\frac{480}{96} = x$

$x = 5$ hours.

⑨ 40 drops / min

$= 2400$ / h ⟶ $= 57600$ / day

1 drop = 1.3mL

∴ $57\,600 \times 1.3\text{mL} = 74\,880\text{mL}$ in a day

$= 74.88$L

⑩. 250g = $7.64

100g = $\frac{250}{2.5}$ ⟶ $\frac{7.64}{2.5} = \$3.06$

• 400g = $11.25

100g = $\frac{400}{4}$ ⟶ $\frac{11.25}{4} = \$2.81$

I'd buy the 400g bar of soap

⑫. 3000mL = $6.40

100g = $\frac{3000}{30}$ ⟶ $\frac{6.40}{30} = \$0.21$

• 7920mL = $13.60

100g = $\frac{7920}{79.2}$ ⟶ $\frac{13.60}{79.2} = \$0.17$

∴ 3, 1L bottles.

(13) 4·6L / 100km

$\frac{480}{100} = 4 \cdot 8$

$\therefore 4 \cdot 6L \times 4 \cdot 8 = 22 \cdot 08L$

(14) a) petrol = $1·49 / L

$\therefore \frac{40}{1 \cdot 49} = 26 \cdot 8L$

b) 10·9L / 100km

$\therefore \frac{100}{10 \cdot 9} = 9 \cdot 17$ car travel 9.17 km/L

$\therefore 26 \cdot 8L \times 9 \cdot 17 = 246 km.$

(15) a) $46 212/year

year to month is ÷ 12

$\therefore = \$3851 / month$

b) 0·8 cm/min

min to hour × 60

$\therefore = 48 cm / hour$

c) 1750 mL / s

1750mL = 1·75L

s to min × 60

$\therefore 105 L / min$

(16) 10L / 20 sec ⟶ 30L/min ⟶ 1800L / hour

(17) a) 60km / h

= 60 000m / h

= 1000m / min

= 16m / s (×0·9)

= 15m / 0·9s

= 15m

b) 84 km/h

= 84 000m/h

= 1400/min

= 23m / s (×0·9)

= 21m

c) 100km/h

= 100 000m / h

= 1666m / min

= 27·7m / s

= 25m