

N5 Home Exercise 2A

$$1) \quad \frac{36 \times 200}{23+17}$$

$$= \frac{7200}{40}$$

$$= \frac{720}{4}$$

$$= \boxed{180}$$

$$2) \quad 0.326 \times 400$$

$$= 0.326 \times 100 \times 4$$

$$= 32.6 \times 4$$

$$= \boxed{130.4}$$

$$\begin{array}{r} 32.6 \\ \times \quad 4 \\ \hline 130.4 \\ \hline 12 \end{array}$$

$$3) \text{ (a) } \text{Parts} = 3 + 2 = 5$$

$$5 \text{ parts} \leftrightarrow 40 \text{ l}$$

$$\therefore \underline{1 \text{ part} \leftrightarrow 8 \text{ l}}$$

$$\therefore 3 \text{ parts} \leftrightarrow 3 \times 8 = 24 \text{ l}$$

$$\therefore \boxed{24 \text{ litres of blue paint}}$$

$$\left(\begin{array}{l} B : Y \\ 3 : 2 \end{array} \right)$$

(b) Greatest amount of green paint made occurs when either all blue paint or all yellow paint is used.

All blue used:

$$3 \text{ parts} \leftrightarrow 20 \text{ l (B)}$$

$$\therefore 1 \text{ part} \leftrightarrow \frac{20}{3} \text{ l}$$

$$\therefore 2 \text{ parts} \leftrightarrow \frac{40}{3} \text{ l} (= 13\frac{1}{3} \text{ l}) \text{ (Y)}$$

So, if all the blue paint is used,

$13\frac{1}{3}$ litres of yellow is needed; as there are 14 litres of yellow, this is possible.

$$\text{Total green paint} = 20 + 13\frac{1}{3} = 33\frac{1}{3} \text{ l}$$

All yellow used:

$$2 \text{ parts} \leftrightarrow 14 \text{ l (Y)}$$

$$\therefore 1 \text{ part} \leftrightarrow 7 \text{ l}$$

$$\therefore 3 \text{ parts} \leftrightarrow 21 \text{ l (B)}$$

As only 20 litres of blue paint exists, this is not possible.

$$\therefore \text{Maximum amount of green paint} = 33\frac{1}{3} \text{ litres}$$

4) (a) $S = 8 \text{ cm/min}$

$$T = 2 \text{ min } 30 \text{ s} = 2.5 \text{ min}$$

$$D = S \times T$$

$$\therefore D = 8 \times 2.5$$

$$\Rightarrow \boxed{D = 20 \text{ cm}}$$

(b) $S = 8 \text{ cm/min}$

$$D = 4 \text{ m} = 400 \text{ cm}$$

$$T = D \div S$$

$$\therefore T = 400 \div 8$$

$$\Rightarrow \boxed{T = 50 \text{ min}}$$

$$5) \quad r = 24 \div 2 \Rightarrow \underline{r = 12 \text{ cm}}$$

$$A_{sc} = \pi r^2 \div 2$$

$$\therefore A_{sc} = \pi \times 12^2 \div 2$$

$$\Rightarrow A_{sc} = 72\pi \text{ cm}^2$$

$$(\approx 226.19 \text{ cm}^2 \text{ to 2 d.p.})$$

$$6) \quad \frac{4.357 \times 10^{18}}{6.085 \times 10^{12}}$$

$$= \frac{4.357}{6.085} \times 10^6$$

$$= 0.716023... \times 10^6$$

$$= 7.16023... \times 10^5$$

$$= \boxed{7.16 \times 10^5 \text{ (3 s.f.)}}$$