

Ratio - Exercise 12.2S

$$1 a) \quad 2 : 6 = 1 : 3$$

$$b) \quad 15 : 5 = 3 : 1$$

$$2 a) \quad \text{Blue : Red} = 2 : 1$$

$$b) \quad \text{Blue : Red} = 3 : 1$$

$$3 a) \quad 4 : 2 = 2 : 1$$

$$b) \quad 3 : 9 = 1 : 3$$

$$4 a) \quad \pounds 90 \text{ in ratio } 3:7 \quad 10 \text{ shares}$$

$$1 \text{ share} = \pounds 90 \div 10 = \pounds 9$$

$$3 \times \pounds 9 = \pounds 27$$

$$7 \times \pounds 9 = \pounds 63$$

$$\pounds 27 : \pounds 63$$

$$b) \quad 369 \text{ kg in ratio } 7:2 \quad 9 \text{ shares}$$

$$1 \text{ share} = \frac{369}{9} = 41 \text{ kg}$$

$$7 \times 41 \text{ kg} = 287 \text{ kg}$$

$$287 \text{ kg} : 82 \text{ kg}$$

$$2 \times 41 \text{ kg} = 82 \text{ kg}$$

$$6 e \quad 700 \text{ mm} : 42 \text{ cm}$$

$$70 \text{ cm} : 42 \text{ cm}$$

$$= 10 \text{ cm} : 6 \text{ cm}$$

$$= 5 \text{ cm} : 3 \text{ cm}$$

10) Scale 1 : 5000

$$\begin{aligned} \text{a)} \quad 6.5 \text{ cm} \times 5000 &= 32500 \text{ cm} \\ &= 325 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \frac{30 \text{ m}}{5000} &= 6 \times 10^{-3} = 0.006 \text{ m} \\ &= 0.6 \text{ cm} \end{aligned}$$

11 a) Scale 1 : 500

$$\begin{aligned} 4 \text{ cm} \times 500 &= 2000 \text{ cm} \\ &= 20 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \frac{20 \text{ m}}{500} &= 0.04 \text{ m} \\ &= 4 \text{ cm} \end{aligned}$$

Simplifying Ratios

Example A farmer keeps cows, sheep and goats.

The cows and sheep are in a ratio 5:8
and the sheep and goats are in a ratio 10:7

Find in its simplest form the ratio for

cows : sheep : goats

$$C : S : G$$

$\times 5$

$$5 : 8$$

$\times 4$

$$10 : 7$$

$$25 : 40$$

$$40 : 28$$

$$= 25 : 40 : 28$$

Ex 2

X and Y are in the ratio 5 : 12

X and Z are in the ratio 7 : 9

Find the ratio Y to Z in its simplest form

$$X : Y : Z$$

$\times 7$

$$5 : 12$$

$\times 5$

$$7 : 9$$

$$35 : 84$$

$$35 : 45$$

$$35 : 84 : 45$$

$$Y : Z = 84 : 45$$
