

## FORM 3

### CHAPTER 4

#### Summative Practice

##### Section A

1 Scale = 12 : 8

$$= 1 : \frac{8}{12}$$

$$= 1 : \frac{2}{3}$$

Answer: C

2 Answer: D

3 Scale = 28 : 7

$$= 1 : \frac{7}{28}$$

$$= 1 : \frac{1}{4}$$

$$n = \frac{1}{4}$$

Answer: A

4 Scale = 16 cm : 80 000 cm = 1 : 5 000

$$\text{Width} = 5(5\ 000) = 25\ 000\ \text{cm} = 250\ \text{m}$$

$$\text{Area} = 800(250) = 200\ 000\ \text{m}^2$$

Answer: D

5 Scale = 3.6 :  $x$  = 1 : 5 000 000

$$\frac{x}{3.6} = 5\ 000\ 000$$

$$x = 18\ 000\ 000\ \text{cm} \div 100\ 000 = 180\ \text{km}$$

Answer: D

6 Area of scale drawing = 16

$$\text{Actual area} = 144$$

$$\text{Length of sides of scale drawing} = \sqrt{16} = 4\ \text{cm}$$

$$\text{Length of sides of actual square} = \sqrt{144} = 12\ \text{cm}$$

$$\text{Scale} = 4 : 12 = 1 : 3$$

Answer: A

7 Scale = 1 : 2 500

$$\text{Actual length} = 400\ \text{m} = 40\ 000\ \text{cm}$$

$$\frac{1}{2\ 500} = \frac{x}{40\ 000}$$

$$x = \frac{1}{2\ 500} \times 40\ 000 = 16\ \text{cm}$$

Answer: B

8 Scale =  $\frac{77}{14} = \frac{x}{6}$

$$x = 33\ \text{cm}$$

Answer: C

9 Scale = 1 :  $\frac{1}{4}$

$$\text{Length of actual sides} = 16\left(\frac{1}{4}\right) = 4\ \text{cm}$$

$$\text{Length of actual base} = 22\left(\frac{1}{4}\right) = 5.5\ \text{cm}$$

$$\text{Perimeter of actual parallelogram}$$

$$= 5.5 + 5.5 + 4 + 4$$

$$= 19\ \text{cm}$$

Answer: A

10 Scale =  $\frac{\text{length of scale drawing}}{\text{length of object}}$

$$= 3 : 9$$

$$= 1 : 3$$

Answer: B

##### Section B

1 (a)  $PQR$  = scale drawing

$$ABC = \text{original object}$$

$$\text{Scale} = 50 : 12.5$$

$$= 1 : \frac{12.5}{50}$$

$$= 1 : \frac{1}{4}$$

(b) (i) The area of the scale drawing is  $k$  times the area of the original object. False

(ii) The area of the original object is  $k^2$  times the area of the scale drawing. True

(iii) A scale of 1 : 0.5 means the scale drawing is 2 times smaller than the original object. False

2 (a) 2 cm : 500 cm = 1 : 250

$$1\ \text{cm} : 25\ \text{m} = 1 : 2\ 500$$

$$20\ \text{m} : 5\ \text{km} = 2\ 000\ \text{cm} : 500\ 000\ \text{cm}$$

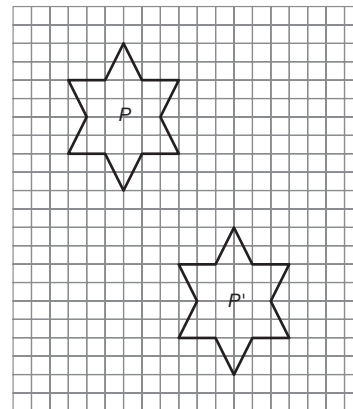
$$= 1 : 250$$

$$40\ \text{mm} : 100\ \text{cm} = 4\ \text{cm} : 100\ \text{cm}$$

$$= 1 : 25$$

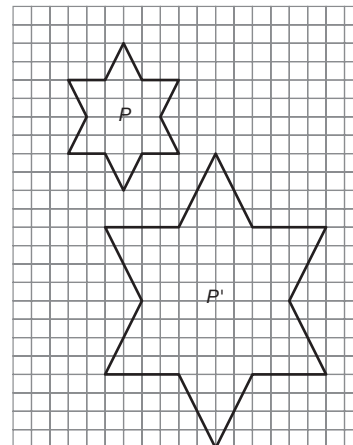
Thus, 2 cm : 500 cm and 20 m : 5 km are equivalent to 1 : 250.

(b) (i)



1 : 1 → same size

(ii)



$1 : \frac{1}{2}$  → scale drawing is two times larger than the object

### Section C

1 Scale = 1 : 1 500

(a) Dimensions of room 1 in plan

$$= 40 \text{ cm} \times 30 \text{ cm}$$

Actual length

$$= 40(1\ 500) = 60\ 000 \text{ cm} = 600 \text{ m}$$

$$= 30(1\ 500) = 45\ 000 \text{ cm} = 450 \text{ m}$$

Dimensions of actual room

$$= 600 \text{ m} \times 450 \text{ m}$$

(b) Dimensions of corridor = 60 cm × 20 cm

Dimensions of actual corridor

$$= 60(1\ 500) \text{ cm} \times 20(1\ 500) \text{ cm}$$

$$= 90\ 000 \text{ cm} \times 30\ 000 \text{ cm}$$

Dimensions of corridor in m

$$= 900 \text{ m} \times 300 \text{ m}$$

$$\text{Area} = 900(300) = 270\ 000 \text{ m}^2$$

(c) Dimensions of wardrobe

$$= 180 \text{ m} \times 90 \text{ m}$$

$$= 18\ 000 \text{ cm} \times 9\ 000 \text{ cm}$$

Dimensions of wardrobe in plan

$$= \frac{18\ 000}{1\ 500} \text{ cm} \times \frac{9\ 000}{1\ 500} \text{ cm}$$

$$= 12 \text{ cm} \times 6 \text{ cm}$$

(d) Dimensions of second floor on drawing

$$= 60 \text{ cm} \times 60 \text{ cm}$$

$$\text{Area} = 60(60) = 3\ 600 \text{ cm}^2$$

Dimensions of actual size

$$= 60(1\ 500) \text{ cm} \times 60(1\ 500) \text{ cm}$$

$$= 90\ 000 \text{ cm} \times 90\ 000 \text{ cm}$$

Area = 90 000(90 000)

$$= 8\ 100\ 000\ 000 \text{ cm}^2$$

Ratio = Actual area : scale drawing

$$= 8\ 100\ 000\ 000 : 3\ 600$$

$$= 2\ 250\ 000 : 1$$