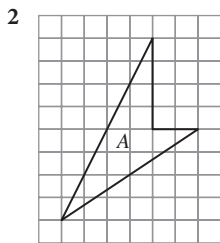


Fully-Worked Solutions

PRACTICE 4

Formative Practice

- 1 (a) (i) $\frac{GH}{AB} = 2$ $\frac{HI}{BC} = 2$
 $\frac{IJ}{CD} = 2$ $\frac{JK}{DE} = 2$
 $\frac{KL}{EF} = 2$ $\frac{GL}{AF} = 2$
 (ii) $\frac{PQ}{AB} = \frac{3}{4}$ $\frac{QR}{BC} = \frac{1}{2}$
 $\frac{RS}{CD} = 1$ $\frac{ST}{DE} = 1$
 $\frac{TU}{EF} = \frac{1}{2}$ $\frac{PU}{AF} = \frac{3}{4}$
 (b) (i) ✓ (ii) ✗ (iii) ✓
 (iv) ✗ (v) ✓ (vi) ✗



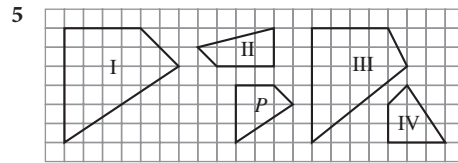
Answer: A

- 3 (a) Scale = 4 : 2
 = 2 : 1
 = 1 : $\frac{1}{2}$ [✓]
 (b) Scale = 1 : 2 [✓]

- 4 (a) (b) (c)

A scale drawing

Not a scale drawing



Quadrilaterals I and IV are the scale drawings of quadrilateral P.

- 6
- | | Object | Scale drawing | Scale |
|-----|--------|---------------|-------------------|
| (a) | VI | III | 1 : 2 |
| (b) | V | I | 1 : $\frac{1}{2}$ |
| (c) | III | II | 1 : $\frac{1}{3}$ |
| (d) | II | IV | 1 : $\frac{3}{4}$ |

- 7
- | Drawing | Scale |
|---------|-------------------|
| (a) | 1 : 3 |
| (b) | 1 : 1 |
| (c) | 1 : $\frac{1}{2}$ |

8 $\frac{H}{3.2} = \frac{1}{\frac{1}{5}}$

$$H = 5 \times 3.2$$

$$= 16 \text{ cm}$$

$$9 \quad \frac{PQ}{5} = 6$$

$$PQ = 30 \text{ cm}$$

$$10 \quad (a) \quad 54 \text{ cm} : AC = 1 : \frac{1}{6}$$

$$\frac{54 \text{ cm}}{AC} = 6$$

$$6AC = 54 \text{ cm}$$

$$AC = 9 \text{ cm} \quad [\checkmark]$$

$$(b) \quad 48 \text{ cm} : BC = 1 : \frac{1}{6}$$

$$\frac{48 \text{ cm}}{BC} = 6$$

$$6BC = 48 \text{ cm}$$

$$BC = 8 \text{ cm} \quad [\times]$$

$$11 \quad L : 19.9 \text{ cm}^2 = \left(1 : \frac{1}{6}\right)^2$$

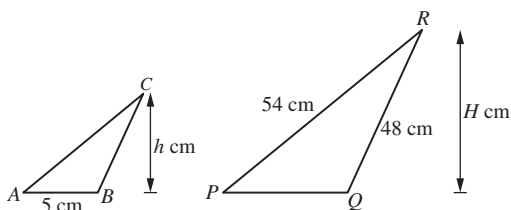
$$\frac{L}{19.9 \text{ cm}^2} = 6^2$$

$$L = 36 \times 19.9 \text{ cm}^2$$

$$= 716.4 \text{ cm}^2$$

The area of triangle PQR is 716.4 cm².

Alternative method



$$\text{Area of triangle } ABC = 19.9 \text{ cm}^2$$

$$\frac{1}{2} \times 5 \times h = 19.9$$

$$h = 7.96$$

$$H : h = 1 : \frac{1}{6}$$

$$H : 7.96 = 1 : \frac{1}{6}$$

$$\frac{H}{7.96} = 6$$

$$H = 6 \times 7.96$$

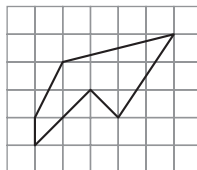
$$= 47.76$$

$$\text{Area of triangle } PQR$$

$$= \frac{1}{2} \times 30 \times 47.76$$

$$= 716.4 \text{ cm}^2$$

12



13 (a) x = actual length of bicycle

$$7.2 \text{ cm} : x = 1 : 30$$

$$\frac{7.2 \text{ cm}}{x} = \frac{1}{30}$$

$$x = 30 \times 7.2 \text{ cm}$$

$$x = 216 \text{ cm}$$

(b) $t \text{ cm} : 90 \text{ cm} = 1 : 30$

$$\frac{t}{90} = \frac{1}{30}$$

$$t = \frac{90}{30} = 3$$

$$14 \quad 2\frac{1}{2} \text{ cm} : x = 1 : 20\,000\,000$$

$$\frac{2\frac{1}{2} \text{ cm}}{x} = \frac{1}{20\,000\,000}$$

$$x = 20\,000\,000 \times 2\frac{1}{2} \text{ cm}$$

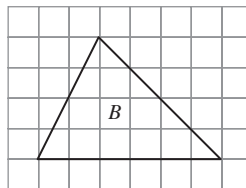
$$= 50\,000\,000 \text{ cm}$$

$$= 500 \text{ km}$$

The actual distance between Batu Pahat and Kuala Terengganu is 500 km.

Summative Practice

1



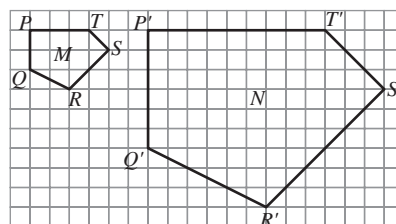
Answer: B

2



Answer: A

3



Scale

$$= P'Q' : PQ$$

$$= 6 : 2$$

$$= 3 : 1$$

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

Answer: A

4 $182 \text{ cm} : x = 1 : 20$

$$\frac{182 \text{ cm}}{x} = \frac{1}{20}$$

$$x = 182 \text{ cm} \times 20$$

$$= 3\,640 \text{ cm}$$

$$= 36.4 \text{ m}$$

Answer: C

5 $x = \text{actual length of Malaysia flag}$

$y = \text{actual width of Malaysia flag}$

$$160 \text{ cm} : x = 1 : 3$$

$$\frac{160 \text{ cm}}{x} = \frac{1}{3}$$

$$x = 3 \times 160 \text{ cm}$$

$$= 480 \text{ cm}$$

$$= 4.8 \text{ m}$$

$$80 \text{ cm} : y = 1 : 3$$

$$\frac{80 \text{ cm}}{y} = \frac{1}{3}$$

$$y = 3 \times 80 \text{ cm}$$

$$= 240 \text{ cm}$$

$$= 2.4 \text{ m}$$

Actual area of the Malaysia flag

$$= 4.8 \times 2.4$$

$$= 11.52 \text{ m}^2$$

Alternative method

$L = \text{actual area of the Malaysia flag}$

Area of scale drawing of the Malaysia flag

$$= 160 \text{ cm} \times 80 \text{ cm}$$

$$= 1.6 \text{ m} \times 0.8 \text{ m}$$

$$= 1.28 \text{ m}^2$$

$$1.28 \text{ m}^2 : L = (1 : 3)^2$$

$$\frac{1.28 \text{ m}^2}{L} = \left(\frac{1}{3}\right)^2$$

$$\frac{1.28 \text{ m}^2}{L} = \frac{1}{9}$$

$$L = 1.28 \text{ m}^2 \times 9$$

$$= 11.52 \text{ m}^2$$

Answer: C

6 (a) Scale = $50 \text{ cm} : 30 \text{ m}$

$$= 50 \text{ cm} : 3\,000 \text{ cm}$$

$$= 1 : 60$$

(b) $x \text{ cm} : 23.4 \text{ m} = 1 : 60$

$$\frac{x \text{ cm}}{23.4 \text{ m}} = \frac{1}{60}$$

$$\frac{x \text{ cm}}{2\,340 \text{ cm}} = \frac{1}{60}$$

$$x = \frac{1}{60} \times 2\,340$$

$$= 39$$

$$61 \text{ cm} : y \text{ m} = 1 : 60$$

$$\frac{61 \text{ cm}}{y \text{ m}} = \frac{1}{60}$$

$$\frac{61 \text{ cm}}{100y \text{ cm}} = \frac{1}{60}$$

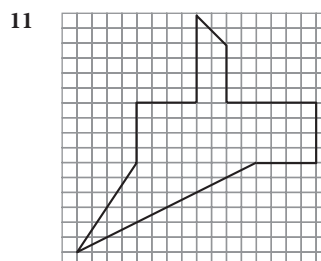
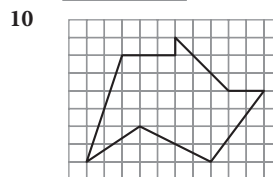
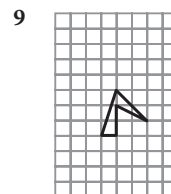
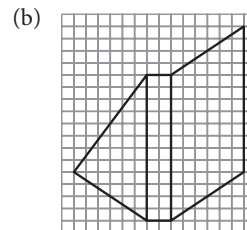
$$100y = 61 \times 60$$

$$= 3\,660$$

$$y = 36.6$$

7 (a) Scale = $2 : 1$

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



12 (a) $18.4 \text{ cm} : x \text{ m} = 1 : 50$

$$\frac{18.4 \text{ cm}}{x \text{ m}} = \frac{1}{50}$$

$$\frac{18.4 \text{ cm}}{100x \text{ cm}} = \frac{1}{50}$$

$$100x = 18.4 \times 50$$

$$100x = 920$$

$$x = 9.2$$

The actual length of the advertisement board is 9.2 m.

(b) $6.2 \text{ cm} : y \text{ m} = 1 : 50$

$$\frac{6.2 \text{ cm}}{y \text{ m}} = \frac{1}{50}$$

$$\frac{6.2 \text{ cm}}{100y \text{ cm}} = \frac{1}{50}$$

$$100y = 6.2 \times 50$$

$$100y = 310$$

$$y = 3.1$$

The actual width of the advertisement board is 3.1 m.

13 Scale = $125 \text{ cm} : 62.5 \text{ m}$
 $= 125 \text{ cm} : 6\,250 \text{ cm}$
 $= 1 : 50$

14 $x : 12 = 1 : \frac{1}{8}$

$$\frac{x}{12} = 8$$

$$x = 8 \times 12$$

$$= 96$$

The length of the scale drawing is 96 cm.

$$y : 4.8 = 1 : \frac{1}{8}$$

$$\frac{y}{4.8} = 8$$

$$y = 8 \times 4.8$$

$$= 38.4$$

The width of the scale drawing is 38.4 cm.