Perimeter and area answers

Page 47

1 a 274 *(1 mark)* cm *(1 mark)*

b 4602 *(1 mark)* cm^2 *(1 mark)*

2 a 32–36 *(1 mark)* km^2 *(1 mark)*

b 18 cm^2

Page 48

1 100 cm^2 *(1 mark for 60 seen in calculation)*

2 a 27 cm^2 *(1 mark for $\frac{1}{2} \times 9 \times 6$)*

b 87 cm^2 *(1 mark for 60 + area of triangle)*

Page 49

1 a 24 cm^2

b 44 cm^2

2 152 cm^2 *(1 mark for $\frac{1}{2} \times (22 + 16) \times 8$)*

Remember: Check which grade you are working at.

Dimensional analysis answers

Page 50

1 Area; volume; length

2 Area; perimeter; volume

Remember: Check which grade you are working at.

Symmetry answers

Page 51

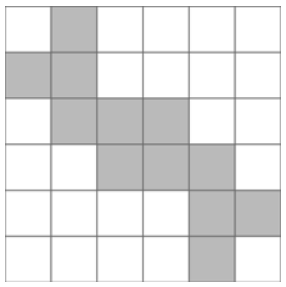
1 a

b

c **i** 0

ii 2

2 a



b 5

Remember: Check which grade you are working at.

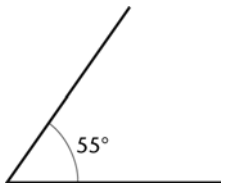
Angles answers

Page 52

1 a i 62°

ii 220°

b



2 a 37°

b 157°

Page 53

1 a i Isosceles

ii $p = 72°$, $q = 36°$

b 133°

2 67° *(1 mark for 113°)*

Remember: Check which grade you are working at.

Polygons answers

Page 54

1 a $p = 45°$, $q = 135°$, $r = 45°$

b A pentagon can be split into three triangles *(1 mark)*

$3 \times 180° = 540°$ *(1 mark)*

2 a 10 *(1 mark for 360° ÷ 36°)*

b Exterior angle = 20° *(1 mark)*

$360° \div 20° = 1$ *(1 mark)*

Remember: Check which grade you are working at.

Parallel lines and angles answers

Page 55

1 **a** 45°; interior or allied angle

b 65°; corresponding angle

c 70°

2 p = 38°; opposite

q = 38°; alternate

r = 38°; corresponding

s = 142°; allied

Remember: Check which grade you are working at.

Quadrilaterals answers

Page 56

1 a Parallelogram

b i Square

ii Rhombus

2 40° *(1 mark for ∠BCD = 100°; 1 mark for ∠DCE = 80°; 1 mark for ∠CDE = 60°)*

Remember: Check which grade you are working at.

Bearings answers

Page 57

1 *Allow ±0.1 km and ±1°*

a 3.6 km at 034°

b 5.1 km at 169°

c 5 km at 233°

d 3.6 km at 304°

2 000° or 360°; 090°; 180°; 270°

Remember: Check which grade you are working at.

Circle answers

Page 58

1 Top left: radius; bottom left: tangent; top right: diameter; bottom right: chord

2 a 113.1 cm^2

b 62.8 cm

3 50π cm^2

Remember: Check which grade you are working at.

Scales answers

Page 59

1 a 28.4 °C

b 57 *(1 mark)* mph *(1 mark)*

c

2 6 × height man (1.8 m) *(1 mark)* 10–12 m *(1 mark)*

Remember: Check which grade you are working at.

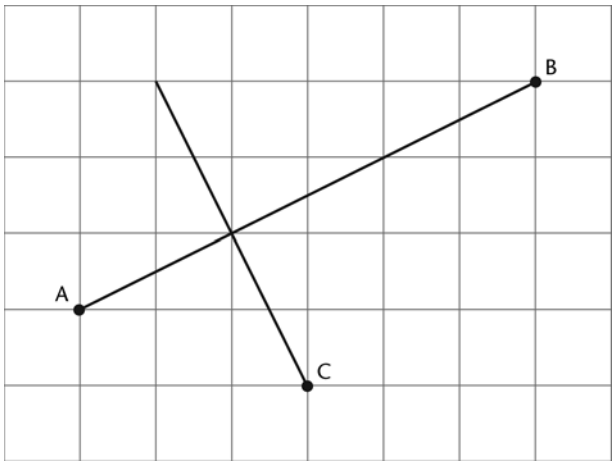
Scales and drawing answers

Page 60

1 *Allow ±1 mm*

a 6.7 cm

b and **c**



d 5 cm *(1 mark)*; 25 km *(1 mark)*

2 a Triangular prism

b 1.3 cm

c Area rectangle 1.5 cm by 4 cm = 6 cm^2

Area triangle $\frac{1}{2} \times 1.5 \times 1.3 = 0.975$ cm^2

Total area = 19.5–20 cm^2

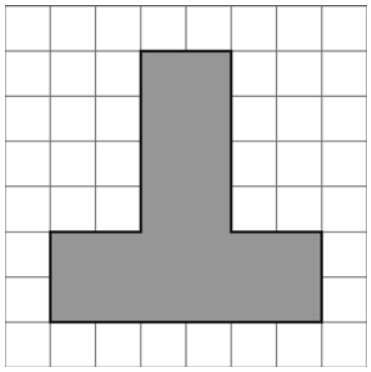
Remember: Check which grade you are working at.

3-D drawing answers

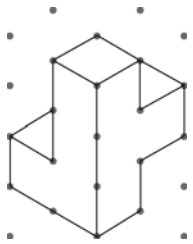
Page 61

1 a 80 cm^3

b



2



(1 mark for any isometric view of the five-cube shape)

Remember: Check which grade you are working at.

Congruency and tessellations answers

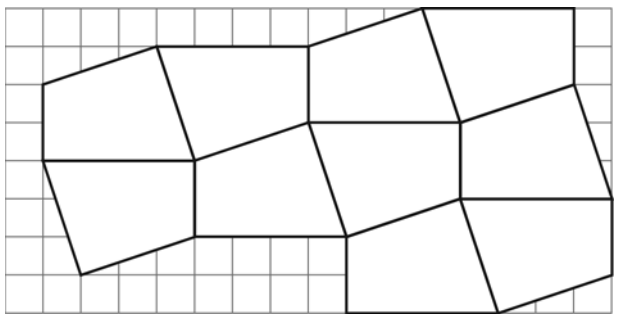
Page 62

1 a C; D and F

b B

2 a A pattern of shapes with no gaps and no overlap

b



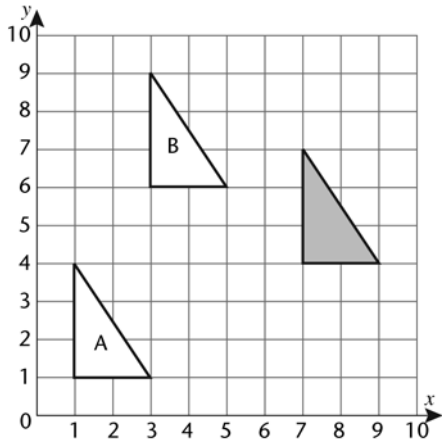
Remember: Check which grade you are working at.

Transformations answers

Page 63

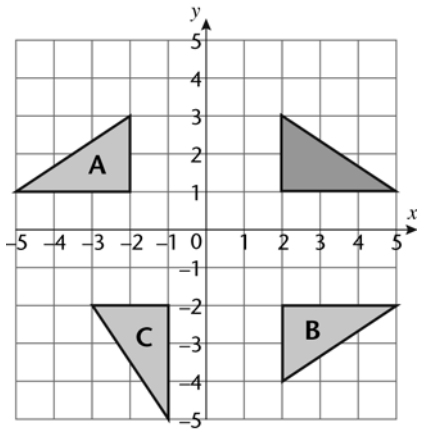
1 a Translation *(1 mark)* of (–6, –3) *(1 mark)*

b Triangle at (3, 6), (3, 9), (5, 6)



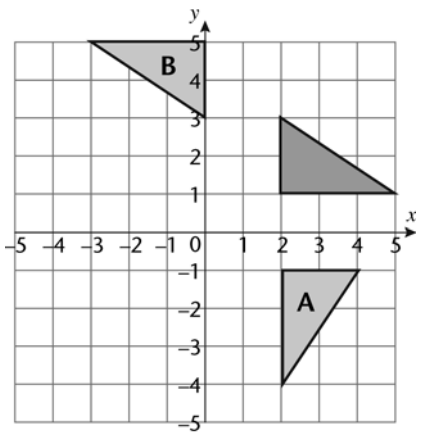
c (–7, 5)

2



Page 64

1 a and **b**



c 90° *(1 mark)* clockwise *(1 mark)* about (4, 3) *(1 mark)*

2 a Enlargement scale factor $\frac{1}{2}$ *(1 mark)* centre (1, 8) *(1 mark)*

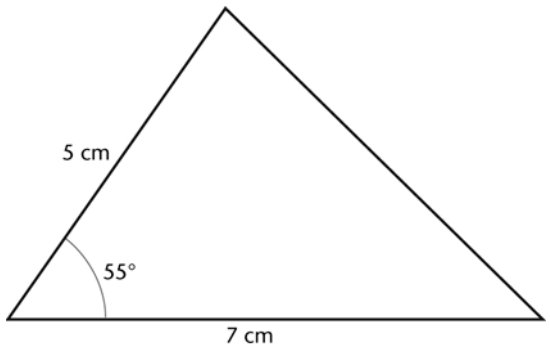
b Triangle at (2, 1), (3, 1), (2, $2\frac{1}{2}$)

Remember: Check which grade you are working at.

Constructions answers

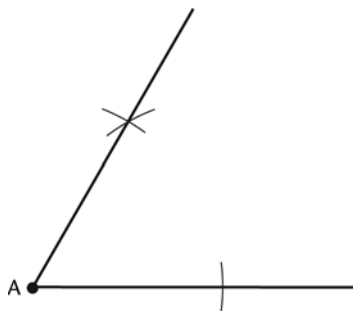
Page 65

1 *Sides 5 cm and 7 cm; included angle 55°*



(1 mark for each length ±1 mm and 1 mark for angle ±1°)

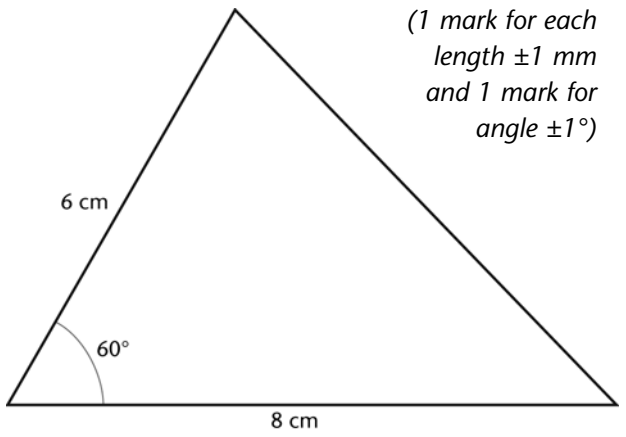
2 a



(Deduct a mark if arcs not shown)

b i *Side 6 cm and 8 cm with included angle 60°*

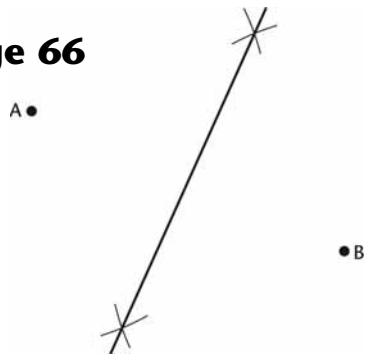
(1 mark for each length ±1 mm and 1 mark for angle ±1°)



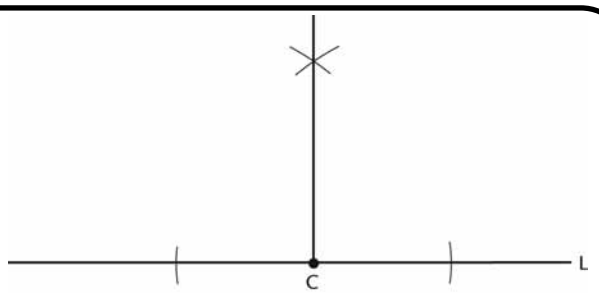
ii 7.2 cm

Page 66

1 a

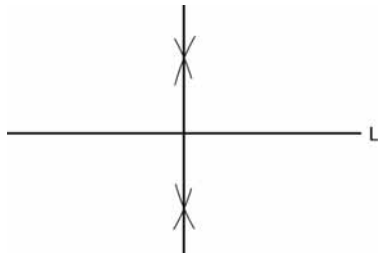


b



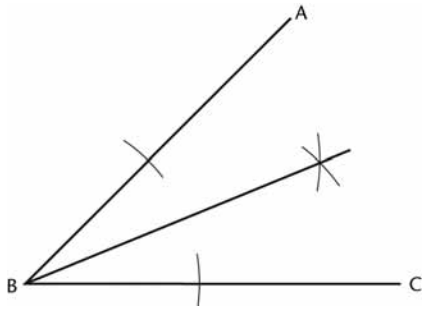
(Deduct a mark if arcs not shown)

2 a



(Deduct a mark if arcs not shown)

b

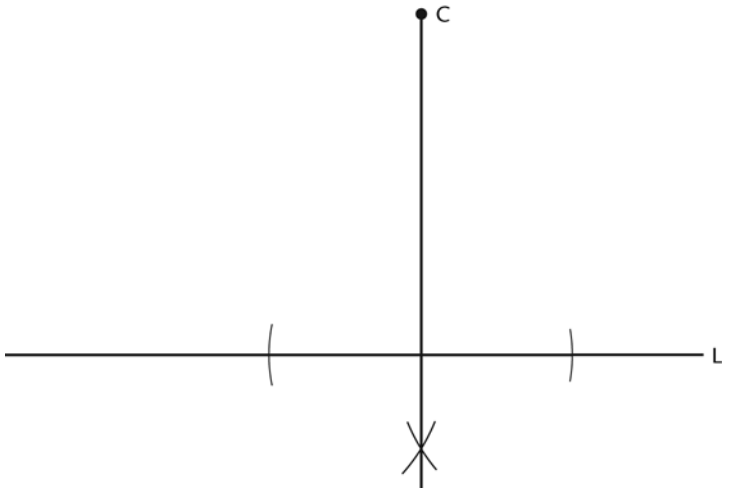


Remember: Check which grade you are working at.

Constructions and loci answers

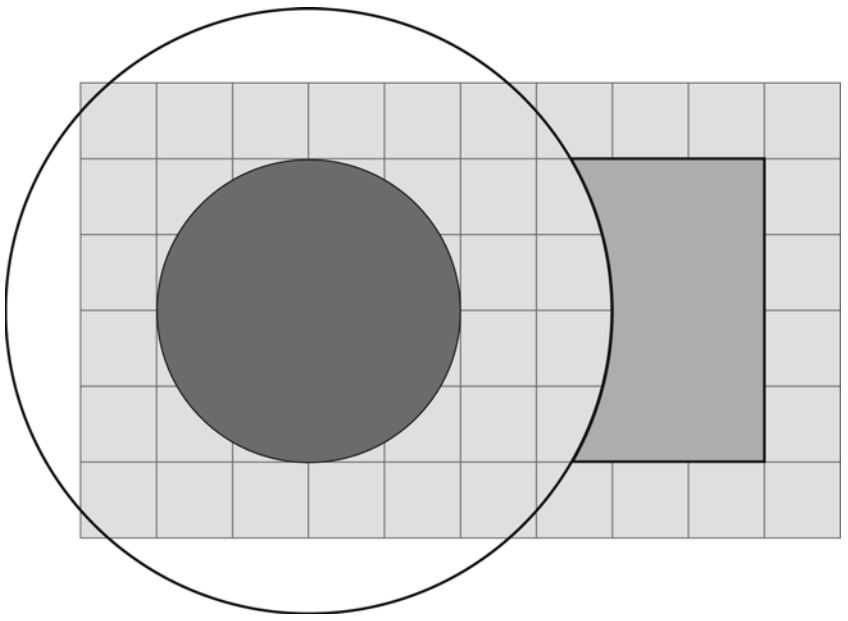
Page 67

1



(Deduct a mark if arcs not shown)

2



Remember: Check which grade you are working at.

Units answers

Page 68

1 a 900 cl

b 25 *(1 mark for 4.5 seen)*

c 180 g *(1 mark for 20 g)*

2 a No, 360 lbs ≈ 163 kg

b **i** 160 000

ii 100

c Yes he needs just over 3 gallons and 20 litres is over 4 gallons *(1 mark for 4.5 seen)*

Remember: Check which grade you are working at.

Surface area and volume of 3-D shapes answers

Page 69

1 a 0.2 m

b 0.06 m^2 *(1 mark for 20 × 30)*

2 a 2 × 4 × 6 cm

b 88 cm^2 *(1 mark for 44 cm^2)*

c 48 *(1 mark)* cm^3 *(1 mark)*

Remember: Check which grade you are working at.

Density and prisms answers

Page 70

1 0.0068 kg/cm^3 or 6.8 g/cm^3 *(1 mark for units)*

2 a 14 cm^2

b 168 cm^3 *(1 mark for 14 × 12)*

3 160π

Remember: Check which grade you are working at.

Pythagoras' theorem answers

Page 71

1 12.8 *(1 mark for $\sqrt{164}$)*

2 10.2 *(1 mark for $\sqrt{104}$)*

3 4.5 *(1 mark for $\sqrt{20.41}$)*

Remember: Check which grade you are working at.