



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Area & Perimeter (including Circles) · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☐ Secure

☒ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Area & Perimeter (including Circles)

Total marks available: 80

● Area & Perimeter (including Circles)

✓14cm²

Q1 · ● Developing · 2 marks

METHOD

Area = length × width

Area = 7 × 2 = 14cm²

✓12cm²

Q2 · ● Developing · 2 marks

METHOD

Area = $\frac{1}{2}$ × base × height

Area = $\frac{1}{2}$ × 6 × 4 = 12cm²

✓16cm

Q3 · ● Developing · 2 marks

METHOD

Perimeter = 2 × (length + width)

Perimeter = 2 × (6 + 2) = 2 × 8 = 16cm

✓24cm²

Q4 · ● Developing · 2 marks

METHOD

Area = length × width

Area = 8 × 3 = 24cm²

✓48m²

Q5 · ● Developing · 2 marks

METHOD

Area = $\frac{1}{2}$ × base × height

Area = $\frac{1}{2}$ × 8 × 12 = 48m²

✓18cm

Q6 · ● Developing · 2 marks

METHOD

$$\text{Perimeter} = 2 \times (\text{length} + \text{width})$$

$$\text{Perimeter} = 2 \times (5 + 4) = 2 \times 9 = 18\text{cm}$$

✓20m

Q7 · ● Developing · 2 marks

METHOD

$$\text{Perimeter} = 2 \times (\text{length} + \text{width})$$

$$\text{Perimeter} = 2 \times (8 + 2) = 2 \times 10 = 20\text{m}$$

✓35cm²

Q8 · ● Developing · 2 marks

METHOD

$$\text{Area} = \text{length} \times \text{width}$$

$$\text{Area} = 7 \times 5 = 35\text{cm}^2$$

✓48cm²

Q9 · ● Developing · 2 marks

METHOD

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$\text{Area} = \frac{1}{2} \times 12 \times 8 = 48\text{cm}^2$$

✓32m

Q10 · ● Developing · 2 marks

METHOD

$$\text{Perimeter} = 2 \times (\text{length} + \text{width})$$

$$\text{Perimeter} = 2 \times (11 + 5) = 2 \times 16 = 32\text{m}$$

✓706.9cm²

Q11 · ● Secure · 3 marks

METHOD

$$\text{Area} = \pi r^2$$

$$\text{Area} = \pi \times 15^2 = \pi \times 225 = 706.9\text{cm}^2$$

✓64m

Q12 · ● Secure · 3 marks

METHOD

Every L-shape's perimeter equals its bounding rectangle's perimeter.

$$\text{Perimeter} = 2 \times (20 + 12) = 2 \times 32 = 64\text{m}$$

✓37.7cm

Q13 · ● Secure · 3 marks

METHOD

$$\text{Circumference} = \pi d$$

$$\text{Circumference} = \pi \times 12 = 37.7\text{cm}$$

✓50.3cm

Q14 · ● Secure · 3 marks

METHOD

$$\text{Circumference} = \pi d$$

$$\text{Circumference} = \pi \times 16 = 50.3\text{cm}$$

✓50.3cm

Q15 · ● Secure · 3 marks

METHOD

$$\text{Circumference} = 2\pi r$$

$$\text{Circumference} = 2 \times \pi \times 8 = 50.3\text{cm}$$

✓75.4cm

Q16 · ● Secure · 3 marks

METHOD

$$\text{Circumference} = \pi d$$

$$\text{Circumference} = \pi \times 24 = 75.4\text{cm}$$

✓380.1m²

Q17 · ● Secure · 3 marks

METHOD

$$\text{Area} = \pi r^2$$

$$\text{Area} = \pi \times 11^2 = \pi \times 121 = 380.1\text{m}^2$$

✓52cm

Q18 · ● Secure · 3 marks

METHOD

Every L-shape's perimeter equals its bounding rectangle's perimeter.

$$\text{Perimeter} = 2 \times (13 + 13) = 2 \times 26 = 52\text{cm}$$

✓149m²

Q19 · ● Secure · 3 marks

METHOD

Split into the full bounding rectangle minus the notch.

$$\text{Area} = (10 \times 17) - (3 \times 7)$$

$$\text{Area} = 170 - 21 = 149\text{m}^2$$

✓56.5cm

Q20 · ● Secure · 3 marks

METHOD

$$\text{Circumference} = 2\pi r$$

$$\text{Circumference} = 2 \times \pi \times 9 = 56.5\text{cm}$$

✓10m

Q21 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 110 \div 11 = 10\text{m}$$

✓18m

Q22 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 90 \div 5 = 18\text{m}$$

✓9m

Q23 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 72 \div 8 = 9\text{m}$$

✓18cm

Q24 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 180 \div 10 = 18\text{cm}$$

✓148cm²

Q25 · ● Greater Depth · 3 marks

METHOD

$$\text{Area} = \frac{1}{2} \times (a + b) \times \text{height}$$

$$\text{Area} = \frac{1}{2} \times (9 + 28) \times 8 = \frac{1}{2} \times 37 \times 8 = 148\text{cm}^2$$

✓10m

Q26 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 80 \div 8 = 10\text{m}$$

✓20cm

Q27 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 120 \div 6 = 20\text{cm}$$

✓4m

Q28 · ● Greater Depth · 3 marks

METHOD

$$\text{Length} = \text{Area} \div \text{width}$$

$$\text{Length} = 20 \div 5 = 4\text{m}$$

✓102m²

Q29 · ● Greater Depth · 3 marks

METHOD

$$\text{Area} = \frac{1}{2} \times (a + b) \times \text{height}$$

$$\text{Area} = \frac{1}{2} \times (14 + 20) \times 6 = \frac{1}{2} \times 34 \times 6 = 102\text{m}^2$$

✓217m²

Q30 · ● Greater Depth · 3 marks

METHOD

$$\text{Area} = \frac{1}{2} \times (a + b) \times \text{height}$$

$$\text{Area} = \frac{1}{2} \times (10 + 21) \times 14 = \frac{1}{2} \times 31 \times 14 = 217\text{m}^2$$