



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Congruence & Similarity · 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.

Congruence & Similarity

Total marks available: 75

● Congruence & Similarity

✓ (a) $XY = 4\text{ cm}$ (b) $\text{angle } XYZ = 45^\circ$

Q1 · ● Developing · 2 marks

METHOD

XY matches AB , so $XY = 4\text{ cm}$

Angle XYZ matches angle ABC , so it is 45°

✓ SSS

Q2 · ● Developing · 2 marks

METHOD

SSS (all cases checked against the number of equal sides/angles given).

✓ SSS

Q3 · ● Developing · 2 marks

METHOD

SSS (all cases checked against the number of equal sides/angles given).

✓ (a) $XZ = 4\text{ cm}$ (b) $\text{angle } YZX = 45^\circ$

Q4 · ● Developing · 2 marks

METHOD

XZ matches BC , so $XZ = 4\text{ cm}$

Angle YZX matches angle ABC , so it is 45°

✓ (a) $PR = 6\text{ cm}$ (b) $\text{angle } RPQ = 110^\circ$

Q5 · ● Developing · 2 marks

METHOD

PR matches AB , so $PR = 6\text{ cm}$

Angle RPQ matches angle ABC , so it is 110°

✓ SAS

Q6 · ● Developing · 2 marks

METHOD

SAS (all cases checked against the number of equal sides/angles given).

✓ SSS

Q7 · ● Developing · 2 marks

METHOD

SSS (all cases checked against the number of equal sides/angles given).

✓ SAS

Q8 · ● Developing · 2 marks

METHOD

SAS (all cases checked against the number of equal sides/angles given).

✓ SAS

Q9 · ● Developing · 2 marks

METHOD

SAS (all cases checked against the number of equal sides/angles given).

✓ ASA

Q10 · ● Developing · 2 marks

METHOD

ASA (all cases checked against the number of equal sides/angles given).

✓ 12 cm

Q11 · ● Secure · 3 marks

METHOD

Scale factor = $16 \div 4 = 4$

$x = 3 \times 4 = 12$

✓ 33 cm

Q12 · ● Secure · 3 marks

METHOD

$$\text{Scale factor} = 12 \div 4 = 3$$

$$x = 11 \times 3 = 33$$

✓ No (the multipliers are different)

Q13 · ● Secure · 2 marks

METHOD

$$8 \div 2 = 4$$

$$23 \div 6 = 3.83... \text{ (not 4)}$$

The multipliers are different, so they are not similar.

✓ 33 cm

Q14 · ● Secure · 3 marks

METHOD

$$\text{Scale factor} = 9 \div 3 = 3$$

$$x = 11 \times 3 = 33$$

✓ No (the multipliers are different)

Q15 · ● Secure · 2 marks

METHOD

$$4 \div 2 = 2$$

$$15 \div 7 = 2.14... \text{ (not 2)}$$

The multipliers are different, so they are not similar.

✓ 24 cm

Q16 · ● Secure · 3 marks

METHOD

$$\text{Scale factor} = 36 \div 9 = 4$$

$$x = 6 \times 4 = 24$$

✓ No (the multipliers are different)

Q17 · ● Secure · 2 marks

METHOD

$$10 \div 5 = 2$$

$$13 \div 7 = 1.86... \text{ (not 2)}$$

The multipliers are different, so they are not similar.

✓ 36 cm

Q18 · ● Secure · 3 marks

METHOD

$$\text{Scale factor} = 27 \div 9 = 3$$

$$x = 12 \times 3 = 36$$

✓ No (the multipliers are different)

Q19 · ● Secure · 2 marks

METHOD

$$20 \div 5 = 4$$

$$31 \div 8 = 3.88... \text{ (not 4)}$$

The multipliers are different, so they are not similar.

✓ No (the multipliers are different)

Q20 · ● Secure · 2 marks

METHOD

$$16 \div 4 = 4$$

$$38 \div 9 = 4.22... \text{ (not 4)}$$

The multipliers are different, so they are not similar.

✓ 20 cm

Q21 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 30 \div 12 = 2.5$$

$$x = 8 \times 2.5 = 20 \text{ cm}$$

✓12 cm

Q22 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 8 \div 4 = 2$$

$$x = 24 \div 2 = 12 \text{ cm}$$

✓12 cm

Q23 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 9 \div 6 = 1.5$$

$$x = 8 \times 1.5 = 12 \text{ cm}$$

✓25 cm

Q24 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 20 \div 8 = 2.5$$

$$x = 10 \times 2.5 = 25 \text{ cm}$$

✓9 cm

Q25 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 18 \div 12 = 1.5$$

$$x = 6 \times 1.5 = 9 \text{ cm}$$

✓4 cm

Q26 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 16 \div 8 = 2$$

$$x = 8 \div 2 = 4 \text{ cm}$$

✓11 cm

Q27 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 32 \div 8 = 4$$

$$x = 44 \div 4 = 11 \text{ cm}$$

✓12 cm

Q28 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 15 \div 10 = 1.5$$

$$x = 8 \times 1.5 = 12 \text{ cm}$$

✓18 cm

Q29 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 6 \div 4 = 1.5$$

$$x = 12 \times 1.5 = 18 \text{ cm}$$

✓6 cm

Q30 · ● Greater Depth · 3 marks

METHOD

$$\text{Scale factor} = 28 \div 7 = 4$$

$$x = 24 \div 4 = 6 \text{ cm}$$