

GCSE Mathematics

F/H

Congruence

GCSE Maths Practice

Total Marks	Time	Questions
56	56 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

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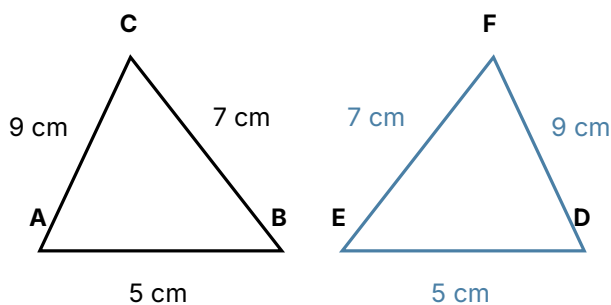
Edexcel-style questions

Q1 

Grade 5

Edexcel style

The diagram shows two triangles. All three sides of each triangle are given, and the corresponding sides are equal, as shown. Which condition proves the triangles are congruent?



Answer _____

teachably

[1 mark]

Q2 

Grade 5

Edexcel style

Triangle ABC is congruent to triangle DEF. $AB = 6$ cm, $BC = 8$ cm, $CA = 10$ cm. Find the length DE.

Answer _____

teachably

[1 mark]

Q3

Grade 6

Edexcel style

In the diagram, $AB = CD$ and $BC = AD$. AC is a diagonal shared by triangles ABC and CDA . Prove that triangle ABC is congruent to triangle CDA .

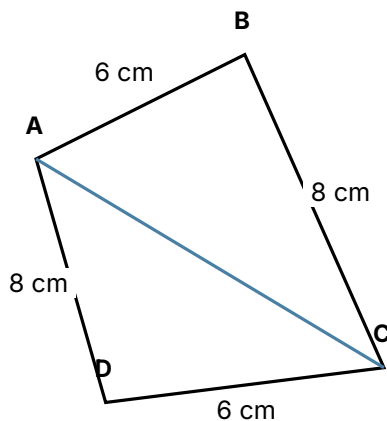


Diagram NOT accurately drawn

Answer _____

Q4

Grade 6

Edexcel style

Triangle ABC is isosceles with $AB = AC$. M is the midpoint of BC. Prove that AM bisects angle BAC.

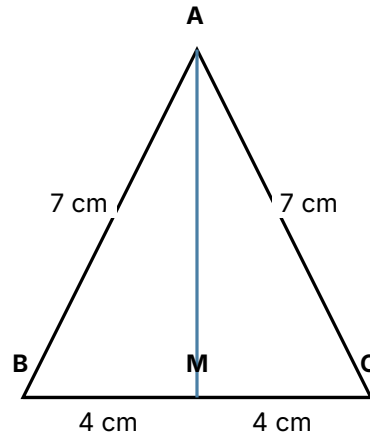


Diagram NOT accurately drawn

Answer _____

teachably

[4 marks]**Q5**

Grade 7

Edexcel style

Triangle 1 has $AB = 8$ cm, $BC = 5$ cm, and angle $A = 30^\circ$. Triangle 2 has $DE = 8$ cm, $EF = 5$ cm, and angle $D = 30^\circ$, but triangle 1 and triangle 2 are NOT congruent. Explain how this is possible.

Answer _____

teachably

[2 marks]

AQA-style questions

Q6 

Grade 5

AQA style

The diagram shows two triangles. Two sides and the angle between them are given for each triangle, and the corresponding measurements are equal, as shown. Which condition proves the triangles are congruent?

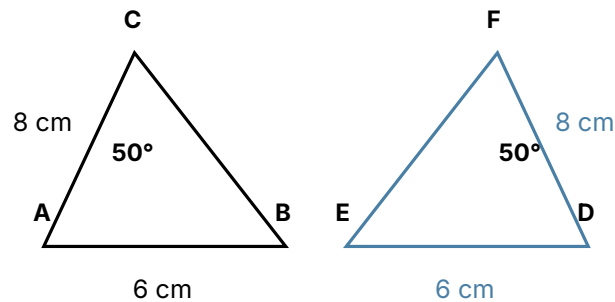


Diagram NOT accurately drawn

Answer _____

teachably

[1 mark]

Q7 

Grade 5

AQA style

Triangle ABC is congruent to triangle DEF . Angle $A = 50^\circ$, angle $B = 70^\circ$. Find angle F .

Answer _____

teachably

[2 marks]

Q8

Grade 6

AQA style

In the diagram, $AB = AC$, and AD bisects angle BAC , meeting BC at D . Prove that triangle ABD is congruent to triangle ACD .

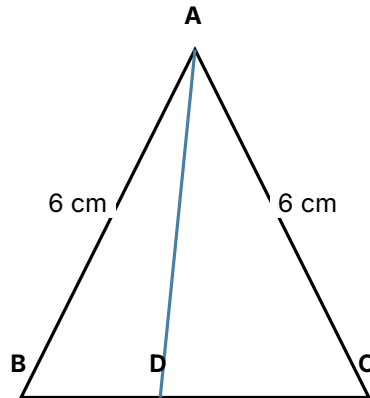


Diagram NOT accurately drawn

Answer _____

Q9

Grade 7

AQA style

ABCD is a kite with $AB = AD$ and $CB = CD$. Prove that the diagonal AC bisects angle BAD.

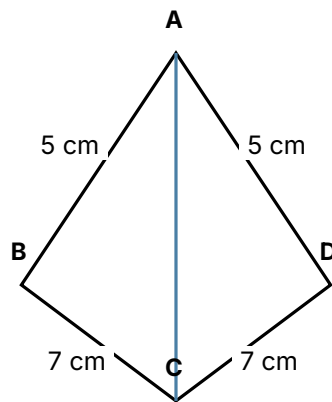


Diagram NOT accurately drawn

Answer _____

Q10

Grade 7

AQA style

In the diagram, AC and BD intersect at X, with $AX = CX$ and $BX = DX$. Prove that triangle AXB is congruent to triangle CXD, and hence that AB is parallel to CD.

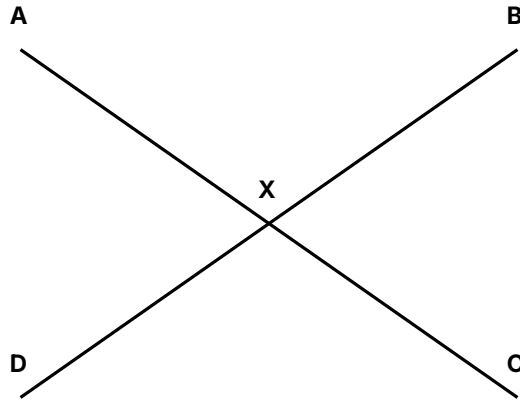


Diagram NOT accurately drawn

Answer _____

OCR-style questions

Q11 

Grade 5

OCR style

The diagram shows two triangles. Two angles and the side between them are given for each triangle, and the corresponding measurements are equal, as shown. Which condition proves the triangles are congruent?

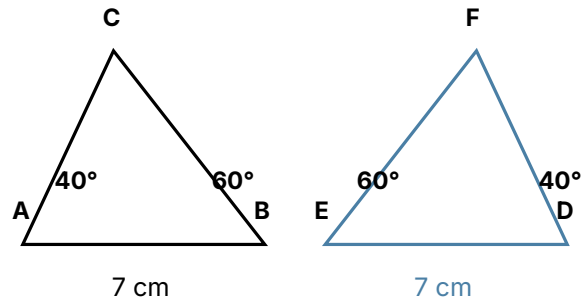


Diagram NOT accurately drawn

Answer _____

teachably

[1 mark]

Q12 

Grade 6

OCR style

Triangle ABC is congruent to triangle FED (note the order of the letters). $AB = 9\text{ cm}$, $BC = 5\text{ cm}$, $CA = 7\text{ cm}$. Find the length DF .

Answer _____

teachably

[2 marks]

Q13

Grade 6

OCR style

In the diagram, AC and BD intersect at X, with $AX = DX$ and $BX = CX$. Prove that triangle AXB is congruent to triangle DXC.

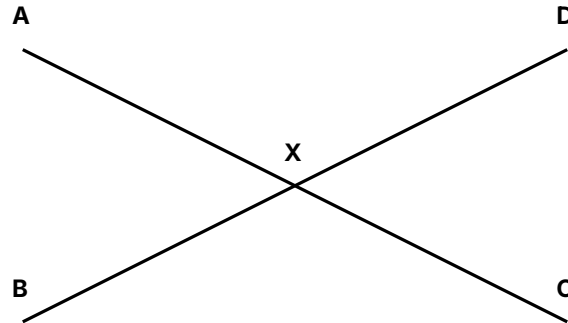


Diagram NOT accurately drawn

Answer _____

Q14

Grade 7

OCR style

ABCD is a parallelogram, so $AB = CD$ and AB is parallel to CD . The diagonals AC and BD intersect at O . Prove that triangle AOB is congruent to triangle COD , and hence that the diagonals bisect each other.

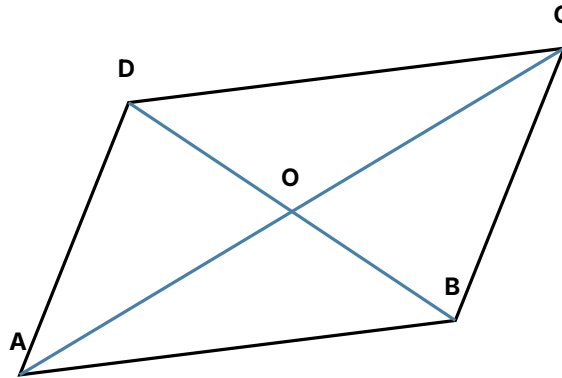


Diagram NOT accurately drawn

Answer _____

Q15

Grade 7

OCR style

Two vertical towers of equal height stand on level ground. A guy wire of the same length runs from the top of each tower to a peg on the ground, and each wire makes a right angle with its tower at the top. Prove that the two right-angled triangles formed (tower, ground, wire) are congruent, and explain what this tells us about the distance from each peg to the base of its tower.

Answer _____

Teachably-style questions

Q16

Grade 5

Teachably style

The diagram shows two right-angled triangles. The hypotenuse and one other side of each triangle are given, and the corresponding measurements are equal, as shown. Which condition proves the triangles are congruent?

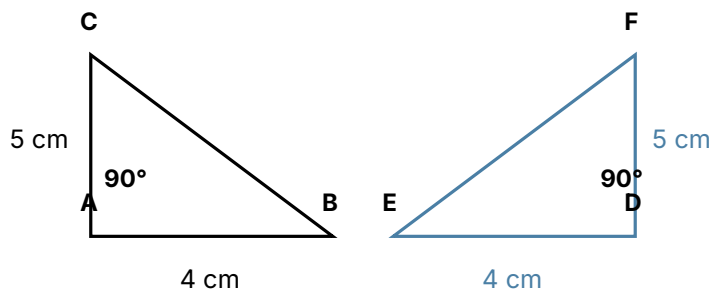


Diagram NOT accurately drawn

Answer _____

teachably

[1 mark]

Q17

Grade 6

Teachably style

Triangle ABC is congruent to triangle DEF. $AB = (3x - 1)$ cm and $DE = 11$ cm. Find x , then find the length of BC if $BC = (2x + 5)$ cm.

Answer _____

teachably

[2 marks]

Q18

Grade 6

Teachably style

In the diagram, triangles ABC and ABD share side AB. Angle BAC = angle BAD, and angle ABC = angle ABD. Prove that triangle ABC is congruent to triangle ABD.

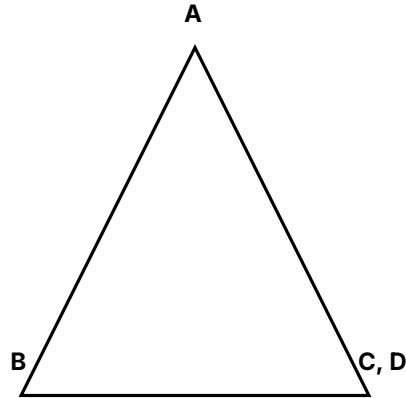


Diagram NOT accurately drawn

Answer _____

Q19

Grade 6

Teachably style

ABCD is a rectangle, with $AB = 8$ cm and $BC = 6$ cm. Prove that the diagonal AC is equal in length to the diagonal BD.

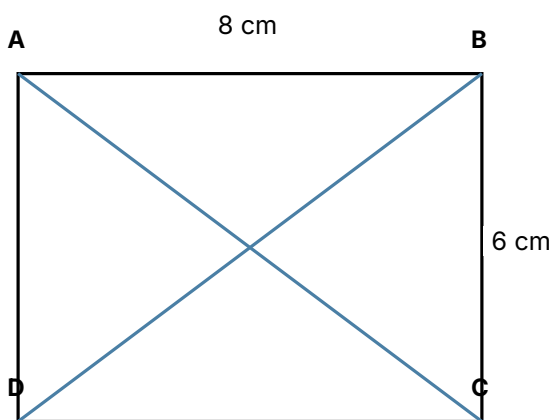


Diagram NOT accurately drawn

Answer _____

teachably

[4 marks]

Q20

Grade 7

Teachably style

Triangle ABE is congruent to triangle ACD. Angle $ABE = (2x + 10)^\circ$ and angle $ACD = (3x - 5)^\circ$. Find the value of x , then find the size of angle ABE.

Answer _____

teachably

[3 marks]

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