

Congruence

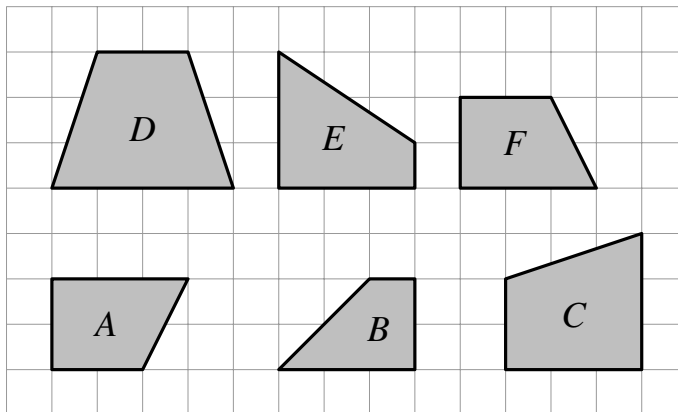
For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **20**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Here are six shapes on a grid.



Two of the shapes are congruent.

Write down the letters of these two shapes.

..... and
(1)

(Total for Question 1 is 1 mark)

2 Here are four right-angled triangles.

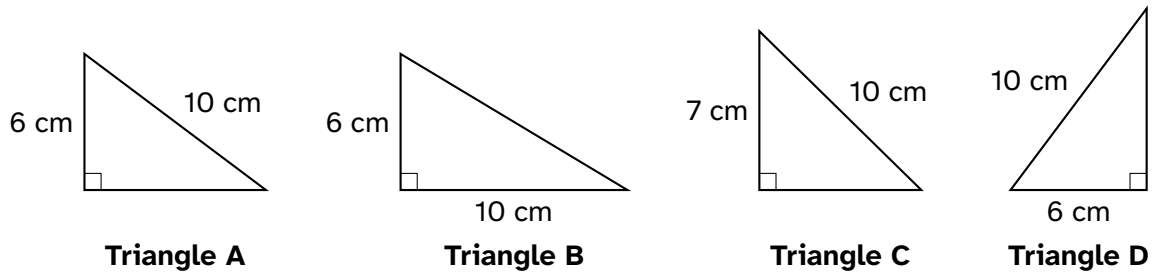


Diagram **NOT** accurately drawn

Which of triangles *B*, *C* and *D* is congruent to triangle *A*?

.....
(1)

(Total for Question 2 is 1 mark)

3 Write down the letters of the **two** triangles that are congruent.

<i>P</i>	angles 40° and 70° , with a side of 6 cm between them
<i>Q</i>	sides 6 cm and 7 cm, with an angle of 40° between them
<i>R</i>	angles 70° and 40° , with a side of 6 cm between them
<i>S</i>	angles 40° , 70° and 70°

..... and
(2)

(Total for Question 3 is 2 marks)

- 4** Write down the condition (SSS, SAS, ASA or RHS) that shows each pair of triangles is congruent.

(a) All three pairs of sides are equal.

.....
(1)

(b) Both triangles are right-angled. The hypotenuses are equal and one other pair of sides is equal.

.....
(1)

(c) Two pairs of sides are equal and the angles between them are equal.

.....
(1)

(Total for Question 4 is 3 marks)

- 5** Two triangles each have angles of 50° , 60° and 70°
Rana says the triangles must be congruent.
Is Rana correct?
Give a reason for your answer.

.....
.....
(1)

(Total for Question 5 is 1 mark)

- 6** Triangle ABC is congruent to triangle PQR , with A matching P , B matching Q and C matching R .

$AB = 6$ cm, $BC = 8$ cm, angle $ABC = 70^\circ$ and angle $BAC = 60^\circ$

- (a) Write down the length of QR .

..... cm

(1)

- (b) Work out the size of angle PRQ .

..... $^\circ$

(1)

(Total for Question 6 is 2 marks)

- 7** B , C and D lie on a straight line.

Angle $ABC = \text{angle } CDE = 90^\circ$

Triangle ABC is congruent to triangle CDE .

$AB = 4$ cm and $BD = 11$ cm

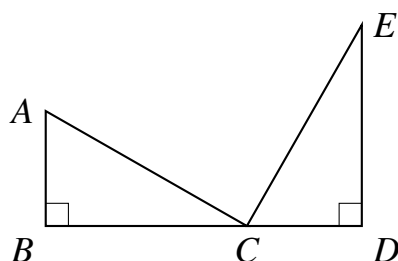


Diagram **NOT** accurately drawn

Work out the length of DE .

..... cm

(2)

(Total for Question 7 is 2 marks)

- 8 Triangle 1 has angles of 50° and 60° , with a side of 8 cm between them. Triangle 2 has angles of 60° and 70° , with a side of 8 cm between them. Mia says the triangles are congruent because of ASA.

Is Mia correct?

You must give a reason for your answer.

(2)

(Total for Question 8 is 2 marks)

- 9 The quadrilateral $ABCD$ is made from two congruent triangles. Triangle ABD is congruent to triangle CDB (A matches C , B matches D , D matches B).

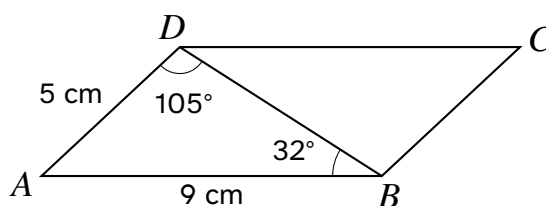


Diagram **NOT** accurately drawn

- (a) Write down the length of BC .

..... cm
(1)

- (b) Work out the size of angle ABC .

..... °
(2)

(Total for Question 9 is 3 marks)

10 The large triangle ABC is made from four congruent triangles.

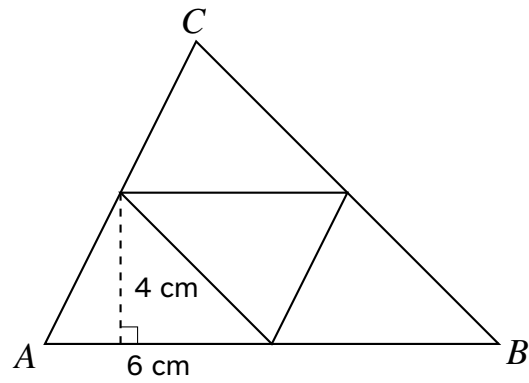


Diagram **NOT** accurately drawn

(a) Work out the area of triangle ABC .

..... cm^2
(2)

(b) The perimeter of triangle ABC is 32 cm.
Work out the perimeter of one of the small triangles.

..... cm
(1)

(Total for Question 10 is 3 marks)