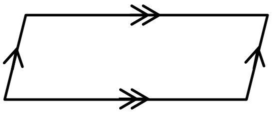
GCSE (9–1)
MATHEMATICS

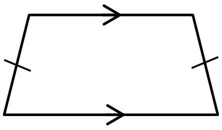
Topic Check In - 8.04 Properties of polygons

1. A triangle has sides 6 cm, 7 cm and 8 cm. What type of triangle is it?

2. Write down the mathematical name for this shape.



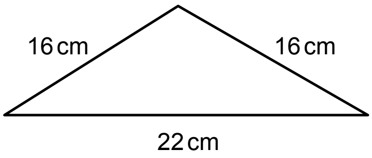
3. Write down the mathematical name for this shape.



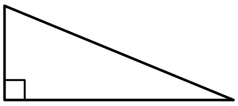
4. How many lines of symmetry does an equilateral triangle have?

5. State the order of rotational symmetry for a regular hexagon.

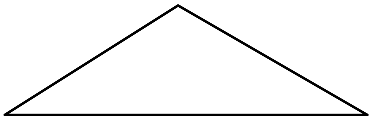
6. Give a reason why this triangle is isosceles.



7. Show that two of these right-angled triangles can be joined together to make a kite.



8. Toni says “I can make a rhombus from 2 identical isosceles triangles”. Show that Toni is correct by using the diagram below.



9. A quadrilateral has vertices at (1, 1), (6, 1), (4, 4) and (1, 4). What type of quadrilateral is this? Explain your answer using geometric terms.

10. Two of the angles in a triangle are 62° and 59°. What type of triangle is this? Explain your answer using geometric terms.

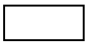
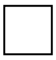
Extension

a) Select a shape and construct a question about the side and angle properties of that shape.

e.g. ‘My shape has four sides and four equal angles. Two of the sides are the same length. What am I?’

Prepare 3 different questions to ask the rest of the class.

b) Using what you know about sides, angles, diagonals and symmetry, select two shapes and find as many similarities and differences as you can. Set your work out in a table as shown below and compare 3 different pairs of shapes.

Shapes	Same	Different
Rectangle 		
Square 		

Answers

1. Scalene

2. Parallelogram

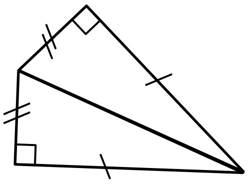
3. (Isosceles) Trapezium

4. 3

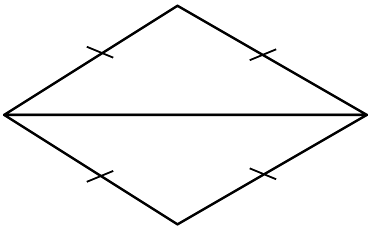
5. 6

6. 2 sides are equal

7.



8.



9. Trapezium because it has one pair of parallel sides.

10. Isosceles triangle

    62 + 59 = 121
    180 – 121 = 59
    The triangle has 2 equal angles of 59° so is isosceles

Extension

a) Peers can provide feedback to assess the quality of questions.
b) Dependent on learner's choices.

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Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Identify and name a triangle.			
AO1	2	Identify and name a quadrilateral.			
AO1	3	Identify and name a quadrilateral.			
AO1	4	Identify lines of reflection symmetry of an equilateral triangle.			
AO1	5	Identify the order of rotational symmetry of a regular hexagon.			
AO2	6	Give a geometrical reason for an isosceles triangle.			
AO2	7	Use geometrical properties to construct a kite.			
AO2	8	Use geometrical properties to construct a rhombus.			
AO3	9	Identify and name a quadrilateral from plotting coordinates.			
AO3	10	Identify and name a triangle using geometrical properties.			

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