

Properties of 2D Shapes

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **25**

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

- 1** A polygon has 8 sides.
What is the name of the polygon?
Circle your answer.

[1 mark]

Pentagon

Hexagon

Octagon

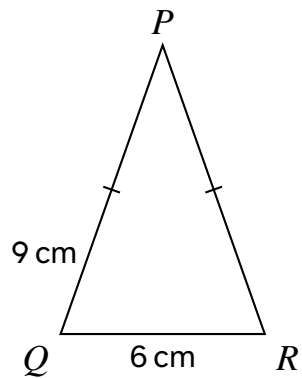
Decagon

- 2** Tick one box for each statement.

[3 marks]

	True	False
A rhombus has four equal sides	☐	☐
A trapezium always has two pairs of parallel sides	☐	☐
A kite always has at least one line of symmetry	☐	☐
Every square is a rectangle	☐	☐
The diagonals of a rectangle always cross at right angles	☐	☐

- 3 The diagram shows an isosceles triangle PQR .



Not drawn accurately

The triangle and a regular pentagon have the same perimeter.
Work out the length of one side of the pentagon.

[3 marks]

Answer _____ cm

- 4 A regular hexagon has a perimeter of 42 cm .
Work out the length of one side.

[1 mark]

Answer _____ cm

- 5** (a) Write down the name of a quadrilateral with exactly one pair of parallel sides. **[1 mark]**

Answer _____

- (b) Write down the name of a triangle with no equal sides. **[1 mark]**

Answer _____

- 6** Circle the order of rotational symmetry of a regular hexagon. **[1 mark]**

- 7** Write down the number of lines of symmetry of

- (a) a rectangle **[1 mark]**

Answer _____

- (b) an equilateral triangle **[1 mark]**

Answer _____

- 8** Ella says,
'A square is not a rhombus, because a rhombus has slanted sides.'

Is Ella correct? Tick a box.
Give a reason for your answer.

[1 mark]

☐ Yes

☐ No

- 9** Here is a grid.



- (a) On the grid, draw a parallelogram that is not a rectangle.

[1 mark]

- (b) On the same grid, draw a kite.

[1 mark]

10 Tick one box for each shape to show how many pairs of parallel sides it has.

[3 marks]

	0	1	2	3
Isosceles triangle	☐	☐	☐	☐
Trapezium	☐	☐	☐	☐
Rhombus	☐	☐	☐	☐
Regular hexagon	☐	☐	☐	☐
Parallelogram	☐	☐	☐	☐

11 Here are some statements about a parallelogram.

Which **two** statements are always true?

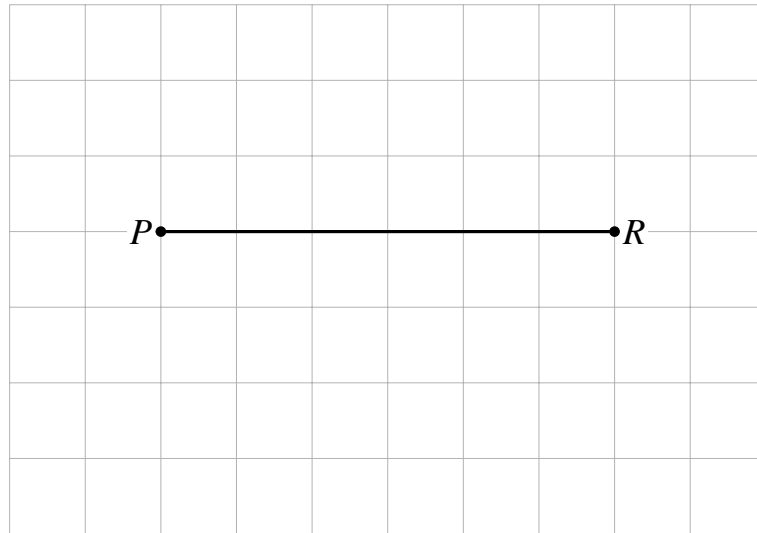
Tick two boxes.

[2 marks]

- ☐ Opposite angles are equal
- ☐ The diagonals are the same length
- ☐ It has two lines of symmetry
- ☐ Opposite sides are equal in length
- ☐ All four angles are 90°

- 12** $PQRS$ is a quadrilateral.
Its diagonals PR and QS cross at the point M .
- M is the midpoint of PR
 - QS is perpendicular to PR
 - Q is above PR and $QM = 2$ cm
 - $MS = 3$ cm

- (a) Draw $PQRS$ on the centimetre grid.
The diagonal PR has been drawn for you.



[3 marks]

- (b) Write down the mathematical name of quadrilateral $PQRS$.

[1 mark]

Answer _____