

**YEAR 8**

Angles and Shape

Give a reason for each answer where you can. The diagrams you meet in an exam are rarely to scale, so work from the angle facts rather than from what the picture looks like.

Name: _____

Date: _____

Score: _____

Section A · Angles on a line and at a point

Angles on a straight line add to 180° . Angles at a point add to 360° .

- 1 Angles on a straight line: one is 118° . Find the other angle.

- 2 Angles on a straight line: one is 47° . Find the other angle.

- 3 Three angles meet at a point: 90° , 145° and x . Find x .

- 4 Three equal angles meet at a point. Find the size of each one.

- 5 Two angles on a straight line are equal. Find the size of each one.

Section B · Triangles and quadrilaterals

Angles in a triangle add to 180° . Angles in a quadrilateral add to 360° .

- 1 A triangle has angles 43° , 78° and x . Find x .

- 2 An isosceles triangle has an apex angle of 40° . Find each base angle.

- 3 Find each angle in an equilateral triangle.

- 4 A quadrilateral has angles 85° , 92° , 113° and x . Find x .
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- 5 A right-angled triangle has one other angle of 34° . Find the third angle.
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Section C • Parallel lines

Corresponding and alternate angles are equal. Co-interior angles add to 180° .

- 1 Two parallel lines are cut by a straight line. One angle is 64° . Find the corresponding angle.
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- 2 Two parallel lines are cut by a straight line. One angle is 118° . Find the alternate angle.
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- 3 Two parallel lines are cut by a straight line. One angle is 105° . Find the co-interior (allied) angle.
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- 4 Two parallel lines are cut by a straight line. One angle is 72° . Find the co-interior (allied) angle.
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Section D • Polygons

Interior angle sum = $(n - 2) \times 180^\circ$. Exterior angles add to 360° .

- 1 Find the sum of the interior angles of a hexagon.
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- 2 Find each interior angle of a regular octagon.
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- 3 Find each exterior angle of a regular decagon (10 sides).
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- 4 A regular polygon has an exterior angle of 24° . How many sides does it have?
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- 5 The interior angles of a polygon add up to 1440° . How many sides does it have?
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