Your notes

KS3 Maths: revision notes

2D and 3D shapes

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Triangles and quadrilaterals

- Equilateral triangle: 3 equal sides and three 60° angles. Isosceles: 2 equal sides and 2 equal angles. Scalene: no equal sides. Right-angled: one 90° angle.
- Square and rectangle: four right angles. Rhombus: four equal sides, opposite angles equal. Parallelogram: opposite sides parallel and equal. Trapezium: one pair of parallel sides. Kite: two pairs of equal sides next to each other.

Polygons, symmetry and circles

- **Polygons**: pentagon (5 sides), hexagon (6), heptagon (7), octagon (8), decagon (10). A **regular polygon** has all sides and all angles equal.
- Line symmetry: a square has 4 lines of symmetry. **Rotational symmetry**: the order is how many times the shape fits onto itself in one turn (a square has order 4; a rectangle has order 2).
- Parts of a circle: **radius**, **diameter** (twice the **radius**), circumference, chord, tangent (touches the circle at one point), arc, sector and segment.

3D shapes

- **Faces**, **edges** and vertices: a cube has 6 **faces**, 12 edges and 8 vertices. A triangular prism has 5 faces, 9 edges and 6 vertices. A square-based pyramid has 5 faces, 8 edges and 5 vertices.
- A cylinder has 2 flat circular **faces** and 1 curved **face**. A cone has 1 flat **face** and a point.
- A net is a flat shape that folds up to make a 3D shape. Plans and elevations are views from above, the front and the side.
- **Congruent** shapes are identical in shape and size. **Similar** shapes are the same shape but a different size.

Key terms

Polygon	A 2D shape with straight sides.
Regular polygon	A polygon with all sides and all angles equal.
Quadrilateral	A polygon with four sides.
Line of symmetry	A line that divides a shape into two mirror images.
Rotational symmetry	When a shape looks the same after less than a full turn.
Radius	The distance from the centre of a circle to its edge.
Diameter	The distance across a circle through its centre (twice the radius).
Tangent	A straight line that touches a circle at one point.
Face	A flat or curved surface of a 3D shape.
Edge	Where two faces of a 3D shape meet.
Vertex	A corner of a shape (plural: vertices).
Net	A flat shape that folds up to make a 3D shape.
Congruent	Exactly the same shape and size.
Similar	The same shape but a different size.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. How many sides does a heptagon have?
2. Which triangle has exactly two equal sides?
3. Which quadrilateral has only one pair of parallel sides?
4. How many lines of symmetry does a square have?
5. What is the order of rotational symmetry of a rectangle?
6. What is the diameter of a circle with a radius of 6 cm?
7. How many edges does a cube have?
8. How many faces does a triangular prism have?

Answers

1. 7
2. Isosceles
3. Trapezium
4. 4
5. 2
6. 12 cm
7. 12
8. 5

Your notes

What to do next

Practise 14 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

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