Regular and irregular polygons

Know that regular polygons have equal sides and equal angles





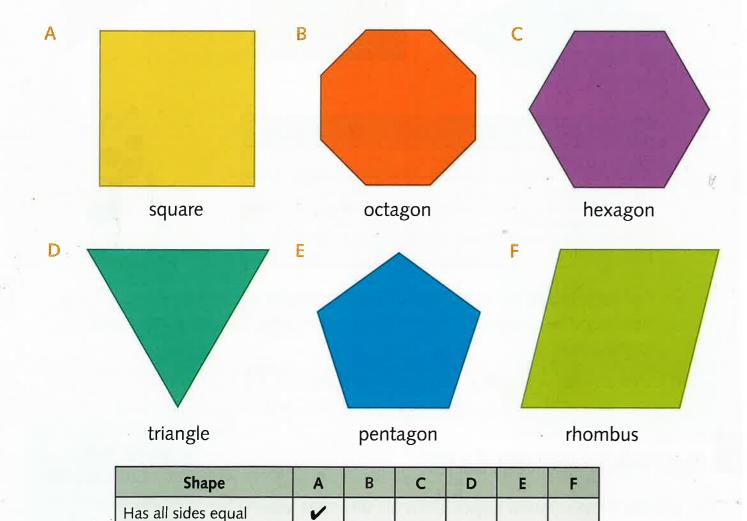
- 1 For each shape below, measure the length of all the sides to the nearest millimetre.
- 2 Measure the size of all of the angles.
- Copy and complete the table below. Use ✓ for yes and ✗ for no.

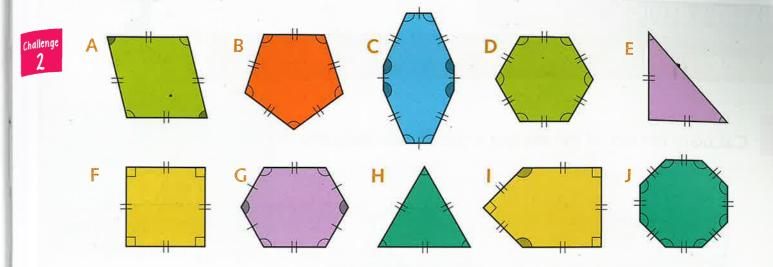
Has all angles equal

Is a regular shape

You will need:

- ruler
- protractor





1 The equal sides and equal angles are marked in each of the shapes. Copy and complete the table. Use ✓ for yes and ✗ for no.

Shape	A	В	С	D	E	F	G	Н	I	J
All sides equal	~		1							
All angles equal	X									

2 Look at the columns in the above table that show one or more x responses. Write a sentence to say why the shape for that column cannot be a regular polygon.

Example

In shape A all the sides are equal but all the angles are not equal. Shape A is an irregular polygon.



Using Resource 48: Regular polygons or the Geometry set tool, investigate how many diagonals you can draw, without any intersections, in a regular polygon with three to eight sides.

You will need:

- Resource 48: Regular polygons or
- Geometry set tool

Make a table of your results. Look for a pattern and use it to predict the number of pairs of non-intersecting diagonals there will be in a nine-sided regular polygon.



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