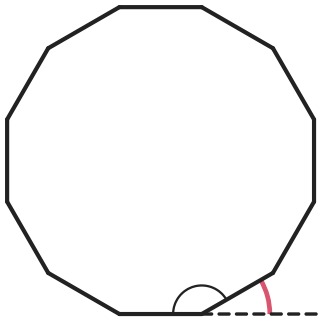
Angles in regular polygons

1

A regular dodecagon has 12 sides.
Find the exterior angle and the interior angle.

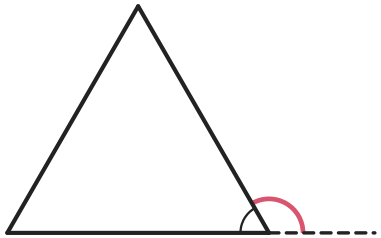


exterior angle $360° \div 12 = \square$

interior angle $180° - \square = \square$

2

An equilateral triangle is a regular polygon with 3 sides. Find the exterior angle and the interior angle.

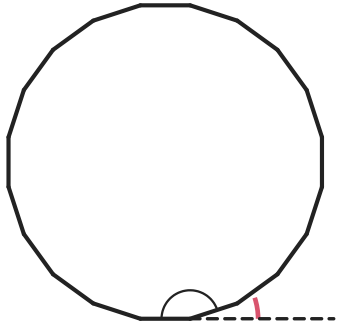


exterior angle $360° \div \square = \square$

interior angle $180° - \square = \square$

3

This is a regular polygon with 20 sides.
Find the exterior angle and the interior angle.

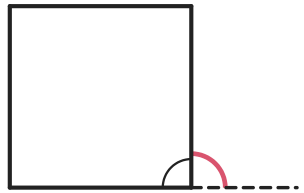


exterior angle

interior angle

4

A square is a regular polygon with 4 sides.
Find the exterior angle and the interior angle.



exterior angle

interior angle

5

Each exterior angle of a regular polygon is 20°. How many sides does it have?



$360° \div 20° = \square$

Sides: _____

6

Jas says each interior angle of a regular polygon with 36 sides is $360° \div 36 = 10°$.
Explain what Jas has done wrong.
Then find the interior angle.



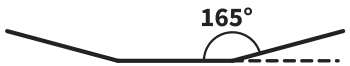
_____

_____

Interior angle: _____

7

Each interior angle of a regular polygon is 165°. How many sides does it have?



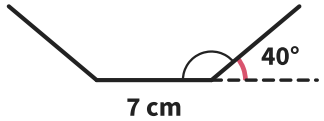
exterior angle

_____

Sides: _____

8

Each exterior angle of a regular polygon is 40°. Each side is 7 cm long.
Work out its perimeter.



sides

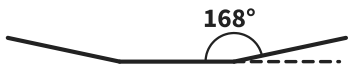
perimeter

Perimeter: _____

Angles in regular polygons *further practice*

9

Each interior angle of a regular polygon is 168°. How many sides does it have?



Answer _____

10

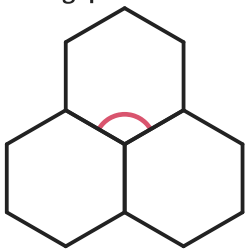
Each row of the table is a regular polygon. Complete the table.

Number of sides	Exterior angle	Interior angle
6		
	40°	
		150°

_____

11

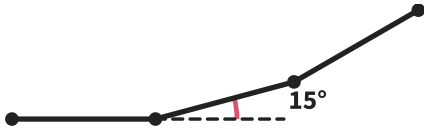
Floor tiles are regular hexagons. Show that three tiles fit together at a point with no gap.



Answer _____

12

A toy train track is a loop of straight pieces. At every join, it turns through 15°. The loop is a regular polygon. How many straight pieces are there?



Answer _____

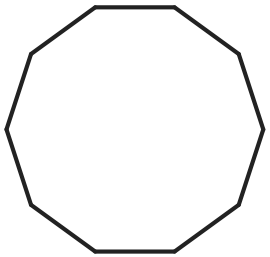
13

Can a regular polygon have an interior angle of 130°? Explain how you know.

Answer _____

14

Work out the sum of the interior angles of a regular polygon with 10 sides in two different ways.



Answer _____

15

A pond is a regular polygon. Each interior angle is 144°. One edging stone 80 cm long fits each side. How long is the edging all the way round, in metres?

Answer _____

16

Explain why no regular polygon can have an exterior angle bigger than 120°.

Answer _____