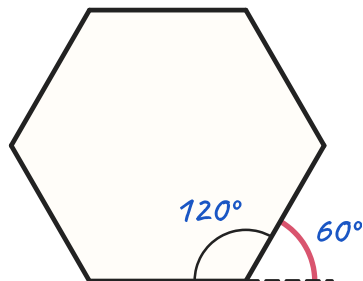


Angles in Regular Polygons

ANSWERS

1

A regular hexagon has 6 sides.
Find e and i .

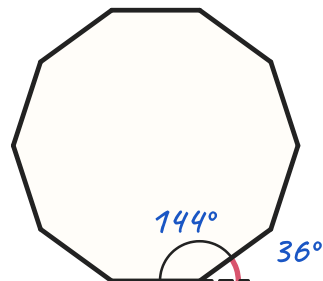


$$e = 360 \div 6 = 60^\circ$$

$$i = 180 - 60 = 120^\circ$$

2

A regular decagon has 10 sides.
Find e and i .

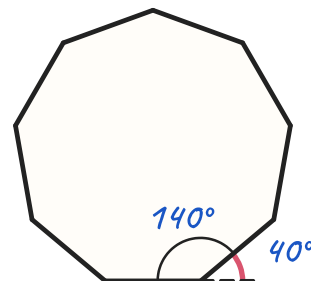


$$e = 360 \div 10 = 36^\circ$$

$$i = 180 - 36 = 144^\circ$$

3

A regular nonagon has 9 sides.
Find e and i .

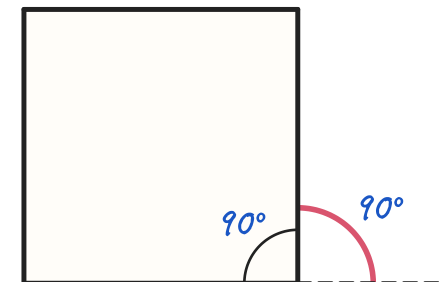


$$e = 360 \div 9 = 40^\circ$$

$$i = 180 - 40 = 140^\circ$$

4

A square has 4 sides. Find e and i .

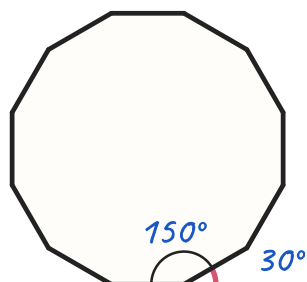


$$e = 360 \div 4 = 90^\circ$$

$$i = 180 - 90 = 90^\circ$$

5

A regular polygon has 12 sides.
Find e and i .

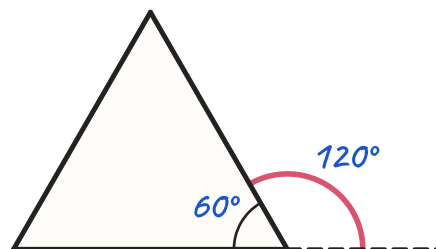


$$e = 360 \div 12 = 30^\circ$$

$$i = 180 - 30 = 150^\circ$$

6

An equilateral triangle has 3 sides.
Find e and i .

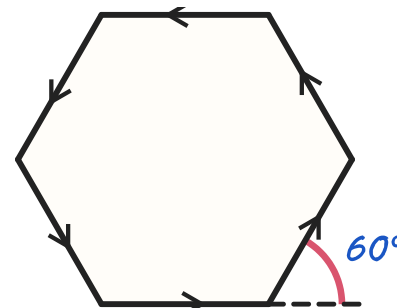


$$e = 360 \div 3 = 120^\circ$$

$$i = 180 - 120 = 60^\circ$$

7

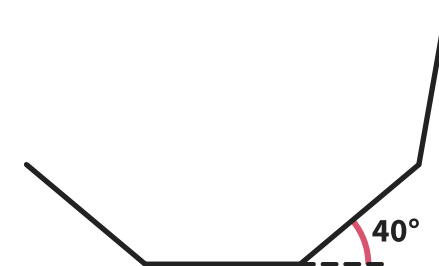
A robot drives round a path.
The path is a regular hexagon.
How many degrees does it turn at each corner?



$$e = 360 \div 6 = 60^\circ$$

8

Each exterior angle of a regular polygon is 40° . How many sides does it have?



$$e = 360 \div ? = 40^\circ$$

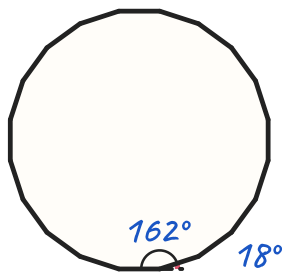
Sides _____ ?

Angles in Regular Polygons *further practice*

ANSWERS

9

A regular polygon has 20 sides. Find e and i .

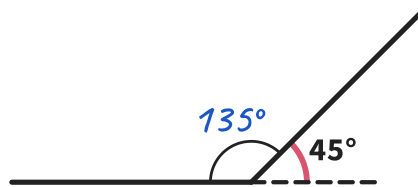


$$e = 360 \div 20 = 18^\circ$$

$$i = 180 - 18 = 162^\circ$$

10

Each exterior angle of a regular polygon is 45° . Find the interior angle i .



$$i = 180 - 45 = 135^\circ$$

11

A robot drives round a path shaped like a regular polygon. It turns 30° at each corner. How many corners does the path have?

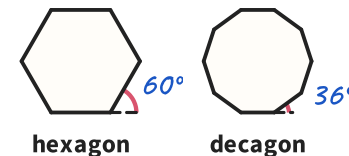


$$e = 360 \div 12 = 30^\circ$$

Corners 12

12

Which has the bigger exterior angle, a regular hexagon or a regular decagon?



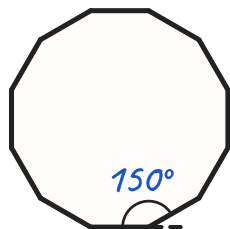
$$e = 360 \div 6 = 60^\circ$$

$$e = 360 \div 10 = 36^\circ$$

Bigger hexagon

13

A £1 coin is a regular polygon with 12 sides. Find the size of each interior angle.



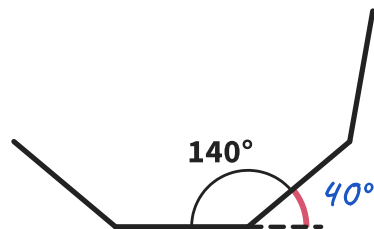
$$360 \div 12 = 30$$

$$180 - 30 = 150$$

Answer 150°

14

Each interior angle of a regular polygon is 140° . How many sides does it have?



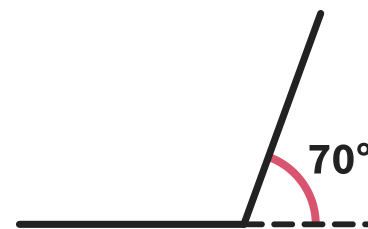
$$e = 180 - 140 = 40$$

$$360 \div 40 = 9$$

Answer 9 sides

15

Can a regular polygon have an exterior angle of 70° ? Show how you know.



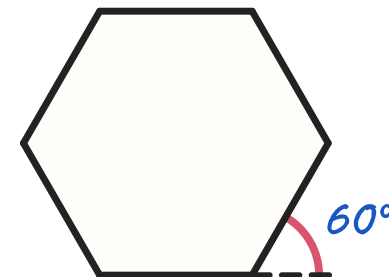
$$70 \times 5 = 350, 70 \times 6 = 420$$

360 is not in the 70 times table

Answer No

16

Sam says $e = 180 \div 6 = 30^\circ$. What has he done wrong?



The exterior angles add up to 360°, not 180°.

So $e = 360 \div 6 = 60^\circ$