

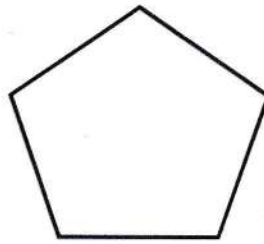
INTERIOR AND EXTERIOR ANGLES - PRACTICE QUESTIONS



metatutor

1.

Pictured below is a regular pentagon.



Find the interior and exterior angles of a regular pentagon.

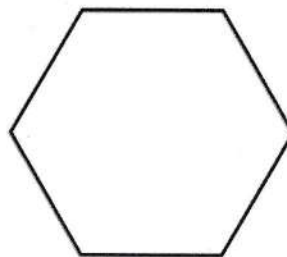
$$360 \div 5 = 72^\circ$$

$$180 - 72 = 108^\circ$$

$$\begin{aligned} \text{Exterior} &= 72^\circ \\ \text{Interior} &= 108^\circ \end{aligned}$$

2.

Pictured below is a regular hexagon.



Find the interior and exterior angles of a regular hexagon.

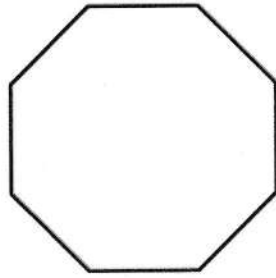
$$360 \div 6 = 60^\circ$$

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

$$\begin{aligned} \text{Exterior} &= 60^\circ \\ \text{Interior} &= 120^\circ \end{aligned}$$

3.

Pictured below is a regular octagon.



Find the interior and exterior angles of a regular octagon.

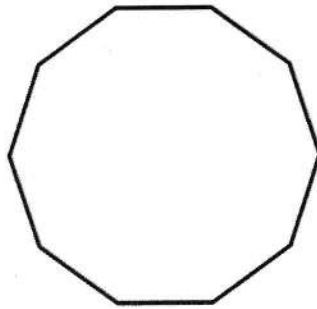
$$360 \div 8 = 45^\circ$$

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

$$\begin{aligned} \text{Exterior} &= 45^\circ \\ \text{Interior} &= 135^\circ \end{aligned}$$

4.

Pictured below is a regular decagon.



Find the interior and exterior angles of a regular decagon.

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

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

$$\begin{aligned} \text{Exterior} &= 36^\circ \\ \text{Interior} &= 144^\circ \end{aligned}$$

5.

A dodecagon is a polygon with 12 sides.

Find the interior and exterior angles of a regular dodecagon.

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

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

$$\text{Exterior} = 30^\circ$$

$$\text{Interior} = 150^\circ$$

6.

An octadecagon is a polygon with 18 sides.

Find the interior and exterior angles of a regular octadecagon.

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

$$180 - 20 = 160^\circ$$

$$\text{Exterior} = 20^\circ$$

$$\text{Interior} = 160^\circ$$

7.

An icosagon is a polygon with 20 sides.

Find the sum of the interior angles in a regular icosagon.

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

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

$$162 \times 20 = \underline{3240^\circ}$$

8.

The size of each exterior angle in a regular polygon is 40° .

How many sides does the regular polygon have?

$$360 \div 40 = \underline{9}$$

9.

The size of each exterior angle in a regular polygon is 24° .

How many sides does the regular polygon have?

$$360 \div 24 = \underline{15}$$

10.

The size of each exterior angle in a regular polygon is 15° .

How many sides does the regular polygon have?

$$360 \div 15 = \underline{24}$$

11.

The size of each interior angle in a regular polygon is 135° .

How many sides does the regular polygon have?

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

$$360 \div 45 = \underline{8}$$

12.

The size of each interior angle in a regular polygon is 150° .

How many sides does the regular polygon have?

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

$$360 \div 30 = \underline{12}$$

13.

The size of each interior angle in a regular polygon is 168° .

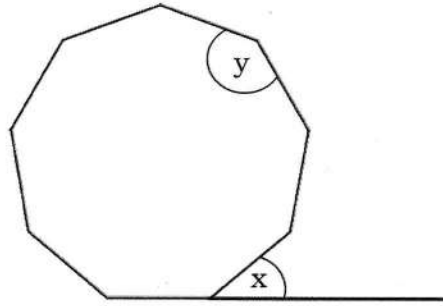
How many sides does the regular polygon have?

$$180 - 168 = 12$$

$$360 \div 12 = \underline{30}$$

14.

Pictured below is a regular nonagon.



(a) Find the size of angle x.

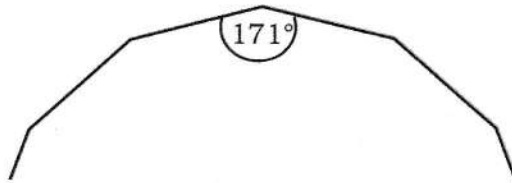
$$360 \div 9 = \underline{40^\circ}$$

(b) Find the size of angle y.

$$180 - 40 = \underline{140^\circ}$$

15.

Pictured below is part of a regular polygon.



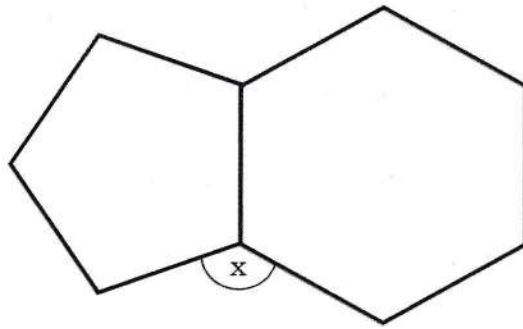
How many sides does the polygon have?

$$180 - 171 = 9^\circ$$

$$360 \div 9 = \underline{40}$$

16.

Pictured below is a regular pentagon joined to a regular hexagon.



Find x.

$$360 \div 5 = 72^\circ$$

$$180 - 72 = 108^\circ$$

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

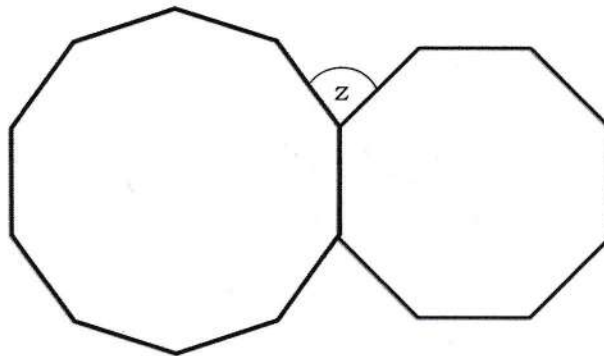
$$180 - 60 = 120^\circ$$

$$108 + 120 = 228^\circ$$

$$360 - 228 = \underline{132^\circ}$$

17.

Pictured below is a regular decagon joined to a regular octagon.



Find z.

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

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

$$360 \div 8 = 45^\circ$$

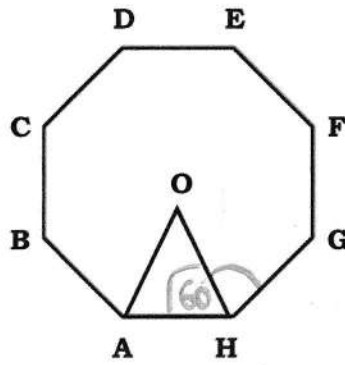
$$180 - 45 = 135^\circ$$

$$144 + 135 = 279^\circ$$

$$360 - 279 = \underline{81^\circ}$$

18.

Pictured below is an equilateral triangle AOH inside a regular octagon ABCDEFGH.



Find the size of angle OHG.

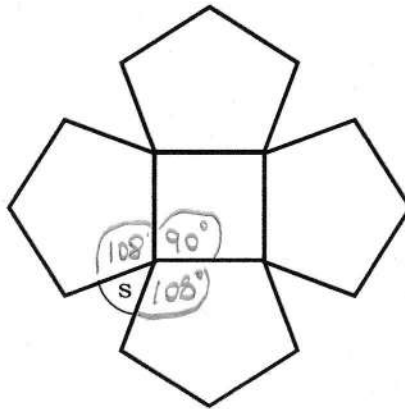
$$360 \div 8 = 45^\circ$$

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

$$135 - 60 = \underline{75^\circ}$$

19.

Pictured below is a square surrounded by regular pentagons.



Find s.

$$360 \div 5 = 72^\circ$$

$$180 - 72 = 108^\circ$$

$$108 + 108 + 90 = 306^\circ$$

$$360 - 306 = \underline{54^\circ}$$