

11-16-17 5th Geo

- ① How many degrees are in the interior of a decagon?

$$(n-2) \cdot 180$$

$$(10-2) \cdot 180$$

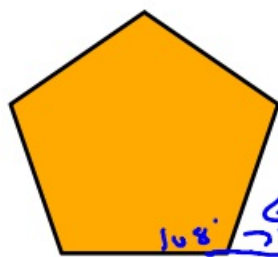
$$1440$$

- ② In a regular octagon, what is the measure of each interior angle?

$$(n-2) \cdot 180$$

$$(8-2) \cdot 180$$

$$\frac{1080}{8} = 135^\circ$$



$$\text{exterior angle} = \frac{360}{n}$$

$$72 = \frac{360}{5}$$

- ③ What is the exterior angle of a regular dodecagon?

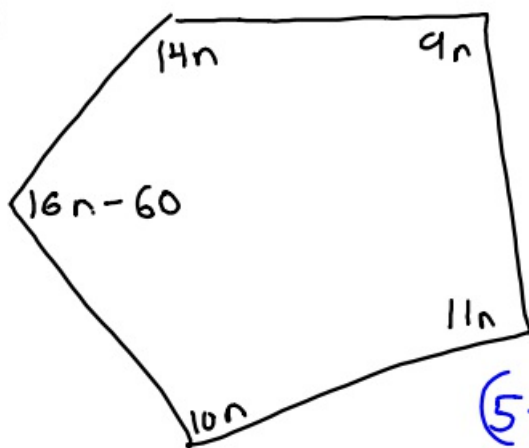
$$\begin{aligned}\text{exterior } \angle &= \frac{360}{n} \\ &= \frac{360}{12} \\ &= 30^\circ\end{aligned}$$

- ④ What is the interior angle of a regular 18 sided polygon?

$$\begin{aligned}\text{ext. } \angle &= \frac{360}{18} \\ &= 20^\circ\end{aligned}$$

\therefore interior \angle is 160°

⑤



Find n .

$$\begin{aligned}(5-2) \cdot 180^\circ \\ 540^\circ\end{aligned}$$

$$16n-60+10n+11n+9n+14n=540$$

$$60n-60=540$$

$$\begin{array}{r} 60n-60=540 \\ +60 \quad +60 \\ \hline 60n=600 \end{array}$$

$$60n=600$$

$$n=10$$

$$na = \frac{360}{n} \cdot n \rightarrow \frac{a}{1} = \frac{360}{n}$$

$$\frac{an}{a} = \frac{360}{a}$$

$$n = \frac{360}{a}$$

$$\frac{an}{a} = \frac{360}{a}$$

$$n = \frac{360}{a}$$

$$\text{Ext } \angle = \frac{360}{n}$$
$$n = \frac{360}{\text{ext. } \angle}$$

- ⑥ How many sides does a polygon have if its exterior angle is 18° ?

$$n = \frac{360}{\text{ext. } \angle}$$

$$n = \frac{360}{18}$$

$$n = 20$$

- ⑦ How many sides does a regular polygon have if its interior angle is 144° ?

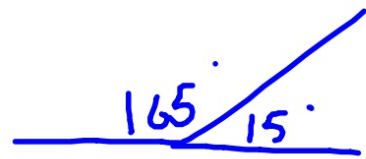
If interior \angle is 144° , the ext \angle is 36° .

$$n = \frac{360}{36}$$

$$n = 10$$

⑧ If interior angle is 165° , how many sides does the regular polygon have?

$$\text{ext } \angle = 15^\circ$$



$$n = \frac{360}{\text{ext. } \angle}$$

$$n = \frac{360}{15}$$

$$n = 24$$

11-16-17 6th Geo

- ① How many degrees is in the interior of a decagon?

$$(n-2) \cdot 180^\circ$$

$$(10-2) \cdot 180^\circ$$

$$8 \cdot 180^\circ$$

$$1440^\circ$$

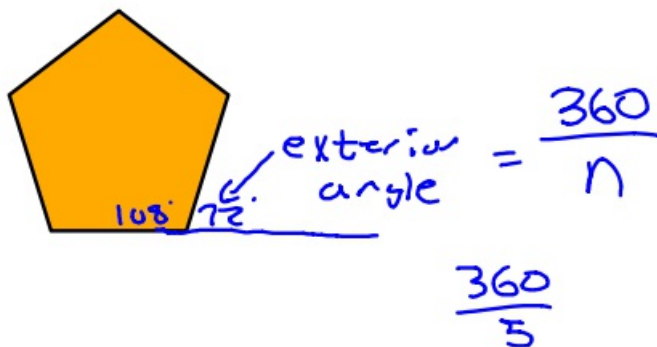
- ② What is each angle in a regular octagon?

$$(n-2) \cdot 180^\circ$$

$$(8-2) \cdot 180^\circ$$

$$6 \cdot 180^\circ$$

$$\frac{1080^\circ}{8} = 135^\circ$$

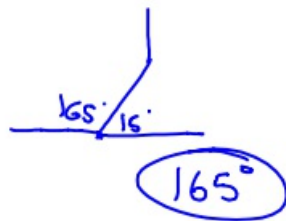


- ③ What is the exterior angle of a do-decagon (regular)?

$$\begin{aligned}\text{ext. } \angle &= \frac{360}{12} \\ &= 30^\circ\end{aligned}$$

- ④ What is the interior angle of a regular 24 sided polygon?

$$\begin{aligned}\text{ext. } \angle &= \frac{360}{24} \\ &= 15^\circ\end{aligned}$$



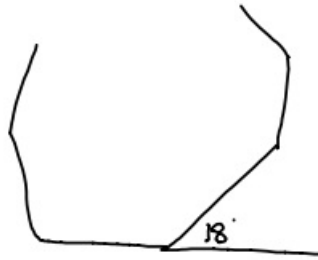
$$n \cdot a = \frac{360}{A} \cdot A$$

$$\frac{n \cdot a}{a} = \frac{360}{a}$$

$$n = \frac{360}{a}$$

$$\text{ext } \angle = \frac{360}{n}$$

$$n = \frac{360}{\text{ext. } \angle}$$

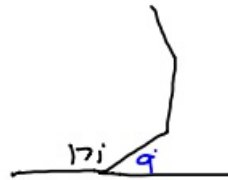


How many sides is this polygon

$$n = \frac{360}{\text{ext. } \angle}$$

$$n = \frac{360}{18} = 20$$

- ⑤ How many sides is the regular polygon if its interior angle is 171° ?

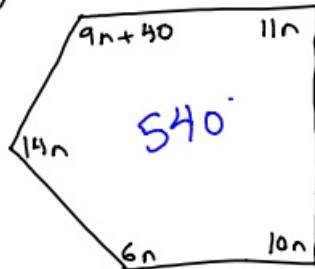


$$n = \frac{360}{\text{ext. } \angle}$$

$$= \frac{360}{9}$$

$$= 40 \text{ sides}$$

⑥



Find n .

$$(5-2) \cdot 180^\circ$$

$$540^\circ$$

$$9n+40+14n+6n+10n+11n=540^\circ$$

$$50n+40=540$$

$$50n=500$$

$$n=10$$

- ⑦ Interior angle of a regular polygon is 170° . How many sides is the polygon?

ext \angle is 10°

$$n = \frac{360}{10} = 36 \text{ sides}$$