

$$1 \text{ No. of sides} = \frac{\text{Sum of all ext. angles}}{\text{one ext. angle.}}$$

$$= \frac{360^\circ \cdot 9}{40^\circ}$$

$$= 9 \text{ sides}$$

NB. 1. A nine sided polygon is called a nonagon

2. A hexagon is a six sided polygon.

$$2. \text{ No. of sides} = \frac{\text{Sum of all ext. } \angle\text{s}}{\text{one ext } \angle}$$

$$= \frac{360^\circ \cdot 6}{60^\circ}$$

$$= 6 \text{ sides}$$

3

$$\text{Ext} + \text{int} \angle = 180^\circ$$

$$\text{Ext} \angle + 120^\circ = 180^\circ$$

$$\text{Ext} \angle + 120^\circ - 120^\circ = 180^\circ - 120^\circ$$

$$\text{Ext} \angle = 60^\circ$$

$$\begin{aligned} \text{No. of sides} &= \frac{\text{Sum of all ext } \angle\text{s}}{\text{One ext } \angle} \\ &= \frac{360^\circ}{60^\circ} \\ &= 6 \text{ sides} \end{aligned}$$

4

$$\text{Ext. angle} + \text{Int. angle} = 180^\circ$$

$$\text{Ext} \angle + 150^\circ = 180^\circ$$

$$\text{Ext} \angle + 150^\circ - 150^\circ = 180^\circ - 150^\circ$$

$$\text{Ext} \angle = 30^\circ$$

$$\begin{aligned} \text{No. of sides} &= \frac{\text{Sum of all ext } \angle\text{s}}{\text{One ext } \angle} \\ &= \frac{360^\circ}{30^\circ} \\ &= 12 \text{ sides} \end{aligned}$$