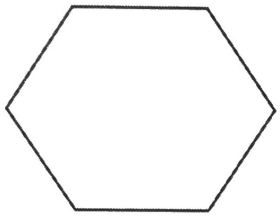
Sum of Interior Angles

Example:



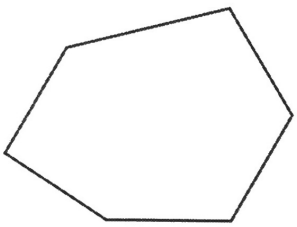
Sum of the interior angles = (Number of sides - 2) x 180^0

= (6 - 2) x 180^0

= 4 * 180^0 = **720^0**

Find the sum of interior angles for each polygon.

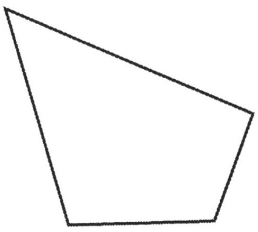
1)



Number of sides = **6**

Sum of the interior angles = **720^0**

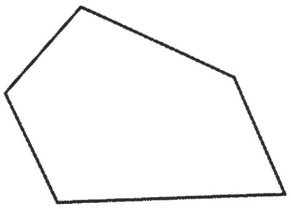
2)



Number of sides = **4**

Sum of the interior angles = **360^0**

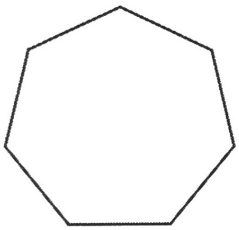
3)



Number of sides = **5**

Sum of the interior angles = **540^0**

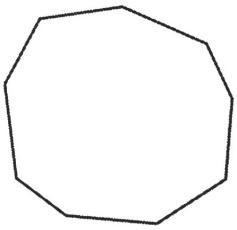
4)



Number of sides = **7**

Sum of the interior angles = **900^0**

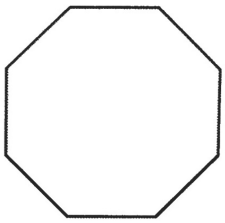
5)



Number of sides = **9**

Sum of the interior angles = **1260^0**

6)



Number of sides = **8**

Sum of the interior angles = **1080^0**

7) regular 11-gon

Number of sides = **11**

Sum of the interior angles = **1620^0**

8) regular 16-gon

Number of sides = **16**

Sum of the interior angles = **2520^0**

9) regular 19-gon

Number of sides = **19**

Sum of the interior angles = **3060^0**

10) regular 18-gon

Number of sides = **18**

Sum of the interior angles = **2880^0**

11) regular 14-gon

Number of sides = **14**

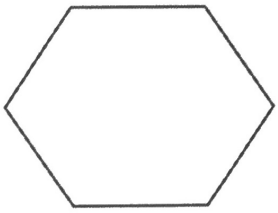
Sum of the interior angles = **2160^0**

12) regular 12-gon

Number of sides = **12**

Sum of the interior angles = **1800^0**

Example:



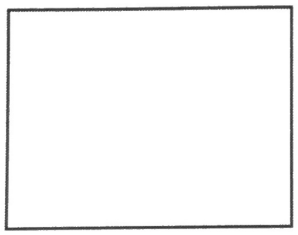
$$\text{Interior angle} = \frac{\text{sum of interior angles}}{\text{Number of sides}}$$

$$= \frac{720^\circ}{6}$$

$$= \mathbf{120^\circ}$$

Find the interior angle for each regular polygon. Round the answer to nearest tenths if necessary.

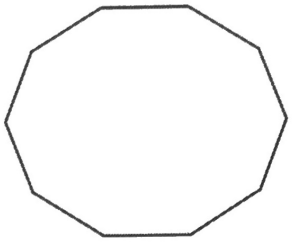
1)



Sum of the interior angles = **360°**

Each interior angle = **90°**

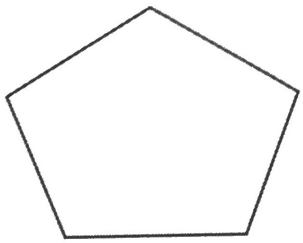
2)



Sum of the interior angles = **1440°**

Each interior angle = **144°**

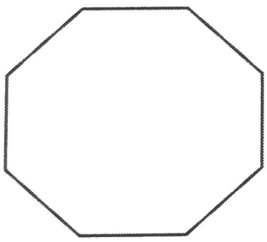
3)



Sum of the interior angles = **540°**

Each interior angle = **108°**

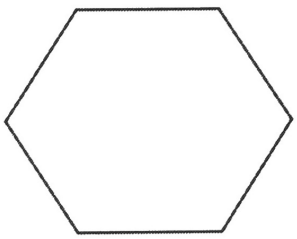
4)



Sum of the interior angles = **1080°**

Each interior angle = **135°**

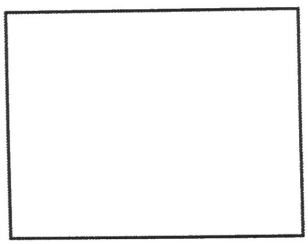
5)



Sum of the interior angles = **720°**

Each interior angle = **120°**

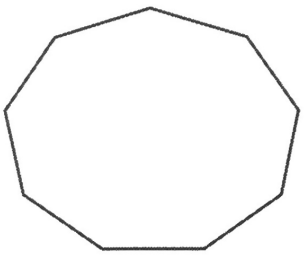
6)



Sum of the interior angles = **360°**

Each interior angle = **90°**

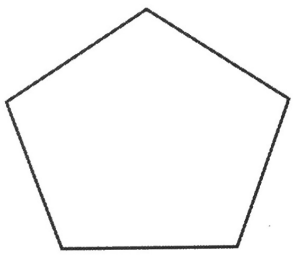
7)



Sum of the interior angles = **1260°**

Each interior angle = **140°**

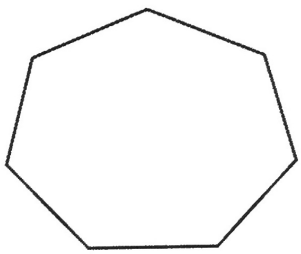
8)



Sum of the interior angles = **540°**

Each interior angle = **108°**

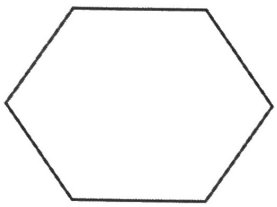
9)



Sum of the interior angles = **900°**

Each interior angle = **128.6°**

Example:



Sum of Exterior angles = 360^0

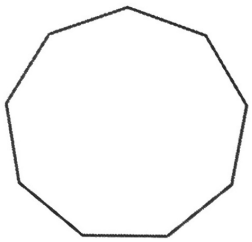
$$\text{Exterior angle} = \frac{\text{Sum of the exterior angles}}{\text{Number of sides}}$$

$$= \frac{360^0}{6}$$

$$= \mathbf{60^0}$$

Find the exterior angle for each regular polygon. Round the answer to nearest whole number.

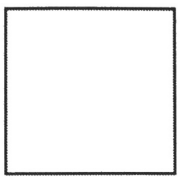
1)



Number of sides = **9**

Each exterior angle = **40^0**

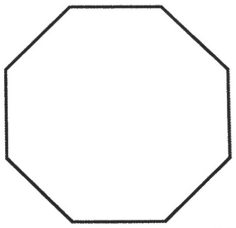
2)



Number of sides = **4**

Each exterior angle = **90^0**

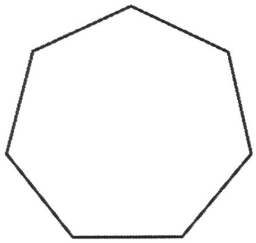
3)



Number of sides = **8**

Each exterior angle = **45^0**

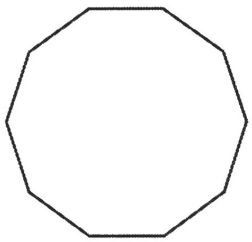
4)



Number of sides = **7**

Each exterior angle = **51^0**

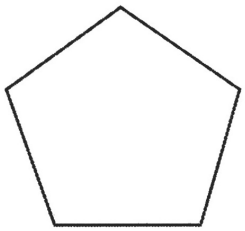
5)



Number of sides = **10**

Each exterior angle = **36^0**

6)



Number of sides = **5**

Each exterior angle = **72^0**

7) regular 18-gon

Number of sides = **18**

Each exterior angle = **20^0**

8) regular 20-gon

Number of sides = **20**

Each exterior angle = **18^0**

9) regular 15-gon

Number of sides = **15**

Each exterior angle = **24^0**

10) regular 14-gon

Number of sides = **14**

Each exterior angle = **26^0**

11) regular 12-gon

Number of sides = **12**

Each exterior angle = **30^0**

12) regular 19-gon

Number of sides = **19**

Each exterior angle = **19^0**