

# TYPES OF ANGLE AND ANGLES IN POLYGONS

## Geometry and Measures

### Key Concepts

**Regular polygons** have equal lengths of sides and equal angles.

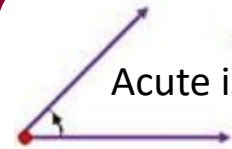
### Angles in polygons

Sum of interior angles  
 $= (\text{number of sides} - 2) \times 180$

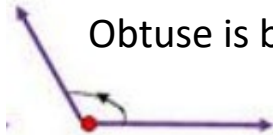
Exterior angles of **regular** polygons  
 $= \frac{360}{\text{number of sides}}$

### Types of angle

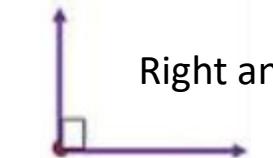
There are four types which need to be identified – acute, obtuse, reflex and right angled.



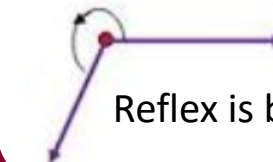
Acute is less than  $90^\circ$



Obtuse is between  $90^\circ$  and  $180^\circ$



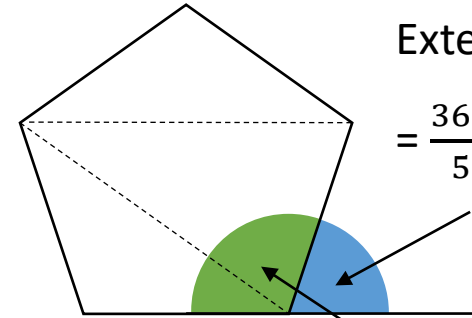
Right angled is  $90^\circ$



Reflex is between  $180^\circ$  and  $360^\circ$

### Examples

Regular Pentagon



Exterior angles

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

$$\begin{aligned} \text{Sum of interior angles} &= (5 - 2) \times 180 \\ &= 540^\circ \end{aligned}$$

$$\text{Interior angle} = \frac{540}{5} = 108^\circ$$



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### Key Words

Polygon  
 Interior angle  
 Exterior angle  
 Acute  
 Obtuse  
 Right angle  
 Reflex

### Questions

- 1) Calculate the sum of the interior angles for this regular shape.
- 2) Calculate the exterior angle for this regular shape.
- 3) Calculate the size of one interior angle in this regular shape.

