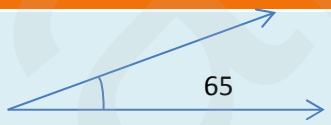
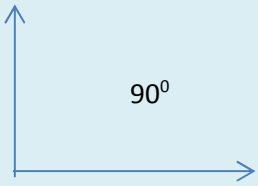
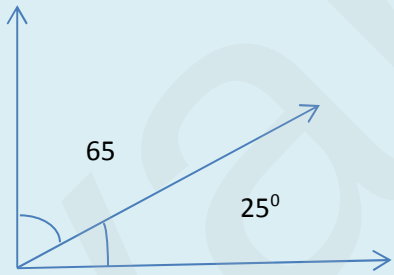
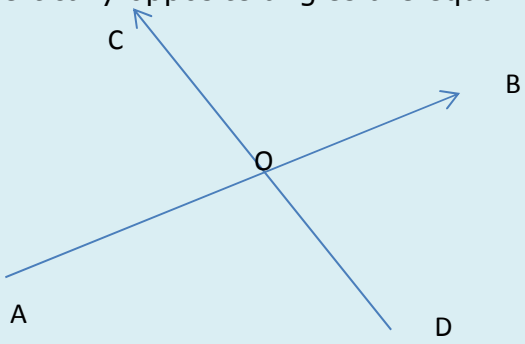
# Class 9
# Important Formulas

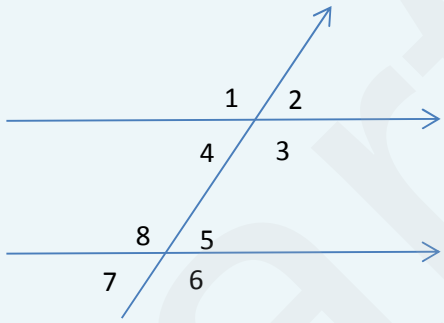
# Chapter 6 - Lines and Angles

What is angle: An angle is a formed of two rays with a common endpoint. The Common end point is known as the vertex of the angle and the rays as the sides, sometimes as the legs and sometimes the arms of the angle

## Types Of angles

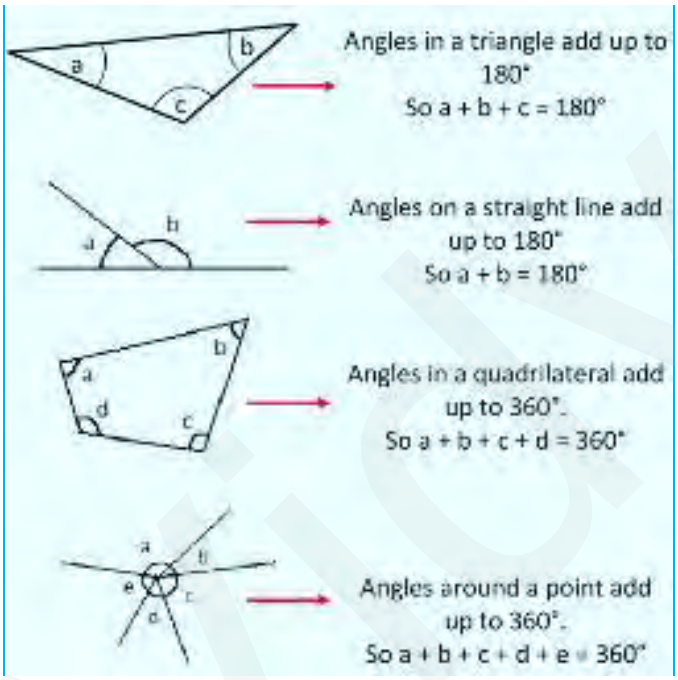
| ***Angle Type*** | **Figure** |
|---|---|
| ***Acute Angle***<br>**0< θ < 90** |  |
| ***Obtuse Angle***<br>**90< θ < 180** |  |
| ***Right Angle***<br>**θ =90** |  |
| ***Reflex Angle***<br>**180< θ < 360** |  |
| ***Straight Angle***<br>**θ =180** |  |

| S.no | Terms | Descriptions |
|---|---|---|
| **1** | Complimentary Angles | Two angles whose sum equal to $90^0$   |
| **2** | Supplementary Angles | Two angles whose sum equal to $180^0$  |
| **3** | Vertically Opposite angles | If two lines intersect with each other, then vertically opposite angles are equal   |

| | | |
|---|---|---|
| | | $\angle AOC = \angle BOD$ |
| **4** | Transversal across the parallel Lines | If the transversal intersect two parallel lines<br>  <br><br>a) Each pair of corressponding angles are equals<br>$\angle 1 = \angle 8 \quad \angle 2 = \angle 5 \quad \angle 4 = \angle 7 \quad \angle 3 = \angle 6$<br>b) Each pair of alternate interior angles are equal<br>$\angle 4 = \angle 5 \quad \angle 3 = \angle 8$<br>c) Each pair of interior angles on the same side of the transversal is supplimentary<br>$\angle 4 + \angle 8 = 180 \quad \angle 3 + \angle 5 = 180$ |
| **5** | Theorem on Transversal across the lines | If a transversal intersect two lines such that either<br>a) any one pair of corresponding angles are equal<br>b) any one pair of alternate interior angles are equal<br>c) any one pair of interior angles on the same side of the transversal is supplimentary<br>Then the two lines are parallel |

| | | |
|---|---|---|
| **6** | Parallel lines Note | Lines which are parallel to a given line are parallel with each other |

*Angles rules*




if the side of the triangle is produced ,the exterior angle formed is equal to the sum of the opposite interior angle

$$\angle 4 = \angle 1 + \angle 2$$