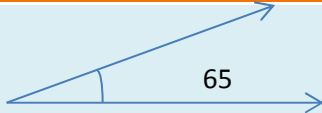
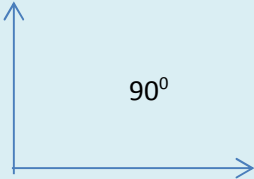
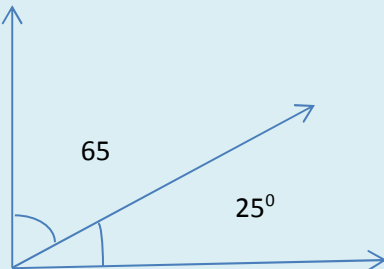
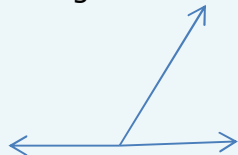
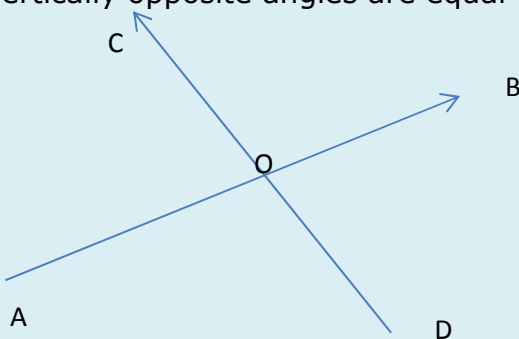


Lines and Angles

What is angle: An angle is 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

<u>Angle Type</u>	Figure
<u>Acute Angle</u> $0 < \theta < 90$	 A diagram showing an acute angle. Two rays originate from a common vertex. One ray is horizontal and points to the right. The other ray points upwards and to the right. An arc is drawn between the two rays, and the number 65 is written next to it.
<u>Obtuse Angle</u> $90 < \theta < 180$	 A diagram showing an obtuse angle. Two rays originate from a common vertex. One ray is horizontal and points to the right. The other ray points upwards and to the left. An arc is drawn between the two rays, and the number 165° is written next to it.
<u>Right Angle</u> $\theta = 90$	 A diagram showing a right angle. Two rays originate from a common vertex. One ray is horizontal and points to the right. The other ray is vertical and points upwards. An arc is drawn between the two rays, and the number 90° is written next to it.
<u>Reflex Angle</u> $180 < \theta < 360$	 A diagram showing a reflex angle. Two rays originate from a common vertex. One ray is horizontal and points to the right. The other ray points upwards and to the left. An arc is drawn between the two rays, and the number 210° is written next to it.
<u>Straight Angle</u> $\theta = 180$	 A diagram showing a straight angle. Two rays originate from a common vertex. One ray is horizontal and points to the right. The other ray is horizontal and points to the left. An arc is drawn between the two rays.

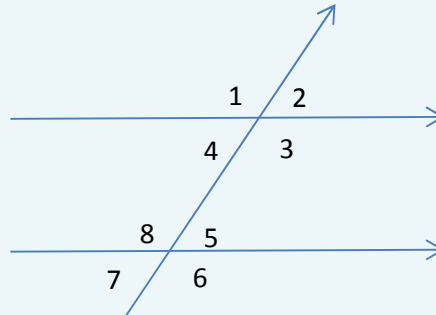
S.no	Terms	Descriptions
1	Complimentary Angles	Two angles whose sum equal to 90° 
2	Supplementary Angles	Two angles whose sum equal to 180° 
3	Vertically Opposite angles	If two lines intersect with each other, then vertically opposite angles are equal 

$$\angle AOC = \angle BOD$$

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Transversal across the parallel Lines

If the transversal intersect two parallel lines



a) Each pair of corresponding angles are equal

$$\angle 1 = \angle 8 \quad \angle 2 = \angle 5 \quad \angle 4 = \angle 7 \quad \angle 3 = \angle 6$$

b) Each pair of alternate interior angles are equal

$$\angle 4 = \angle 5 \quad \angle 3 = \angle 8$$

c) Each pair of interior angles on the same side of the transversal is supplementary

$$\angle 4 + \angle 8 = 180 \quad \angle 3 + \angle 5 = 180$$

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Theorem on Transversal across the lines

If a transversal intersect two lines such that either

a) any one pair of corresponding angles are equal

b) any one pair of alternate interior angles are equal

c) any one pair of interior angles on the same side of the transversal is supplementary

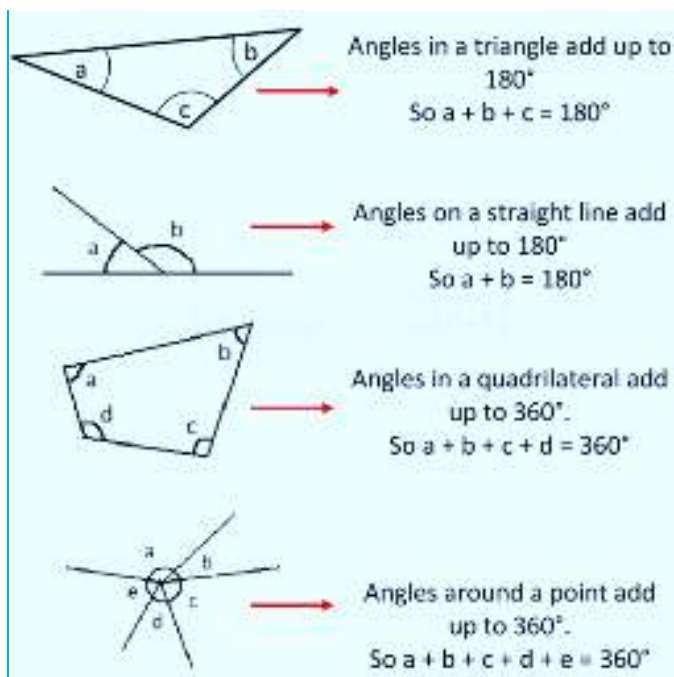
Then the two lines are parallel

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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

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

