## Geometry

### Types Of angles

<table>
<thead>
<tr>
<th>Angle Type</th>
<th>Description</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute Angle</strong></td>
<td>$0 &lt; \theta &lt; 90$</td>
<td><img src="image" alt="Acute Angle Diagram" /></td>
</tr>
<tr>
<td><strong>Obtuse Angle</strong></td>
<td>$90 &lt; \theta &lt; 180$</td>
<td><img src="image" alt="Obtuse Angle Diagram" /></td>
</tr>
<tr>
<td><strong>Right Angle</strong></td>
<td>$\theta = 90$</td>
<td><img src="image" alt="Right Angle Diagram" /></td>
</tr>
<tr>
<td><strong>Reflex Angle</strong></td>
<td>$180 &lt; \theta &lt; 360$</td>
<td><img src="image" alt="Reflex Angle Diagram" /></td>
</tr>
<tr>
<td><strong>Straight Angle</strong></td>
<td>$\theta = 180$</td>
<td><img src="image" alt="Straight Angle Diagram" /></td>
</tr>
</tbody>
</table>
Complimentary Angles:

Two angles whose sum equal to $90^\circ$

Supplementary Angles

Two angles whose sum equal to $180^\circ$

Angles rules

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

\[ \angle 4 = \angle 1 + \angle 2 \]

**Vertically Opposite angles**

If two lines intersect with each other, then vertically opposite angles are equal

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Transversal across the parallel Lines

If the transversal intersect two parallel lines

\[ \angle AOC = \angle BOD \]

\[ \angle AOD = \angle COB \]

a) Each pair of corresponding angles are equals

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

b) Each pair of alternate interior angles are equal
\[ \angle 3 = \angle 8 \quad \angle 4 = \angle 5 \]

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

\[ \angle 4 + \angle 8 = 180 \quad \angle 3 + \angle 5 = 180 \]

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

*Parallel lines Note*

Lines which are parallel to a given line are parallel with each other