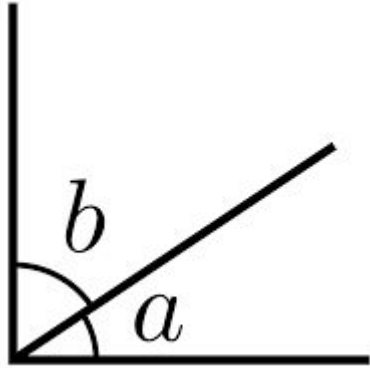# Pairs of Angles and Parallel Lines

Complementary Angles

If two angles add up to 90°, they are called Complementary Angles:

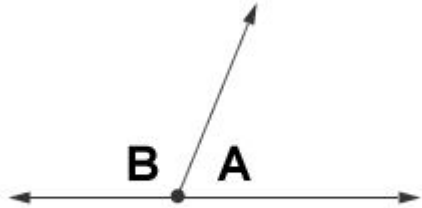$$\angle a + \angle b = 90°$$

Supplementary Angles
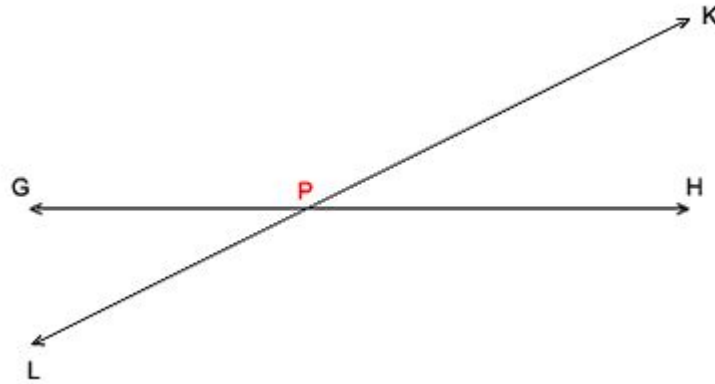
If two angles add up to 180°, they are called Supplementary Angles.
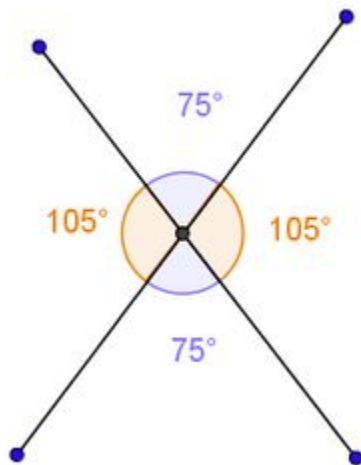
$$\angle a + \angle b = 180°$$

Intersecting Lines

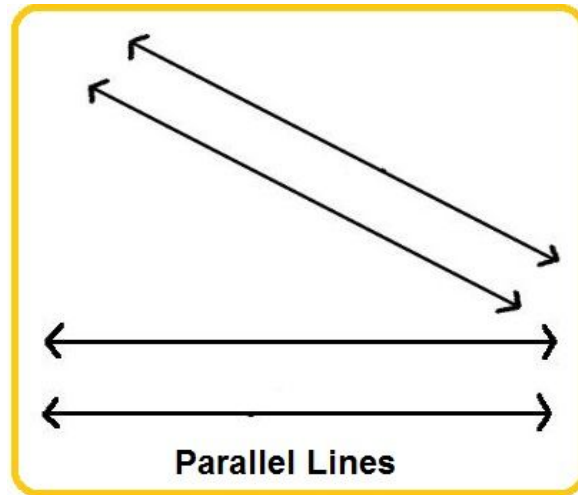When two lines intersect (meet a single point) there are four resulting angles:

Vertically Opposing Angles (Intersecting Lines)

When two lines intersect, the opposing angles are equal to each other. They are called Vertically Opposite Angles.
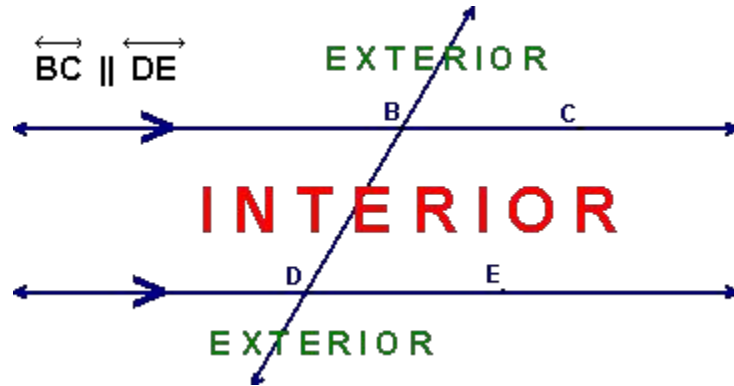
Parallel Lines

When two lines never meet (intersect), the two lines are called Parallel Lines.
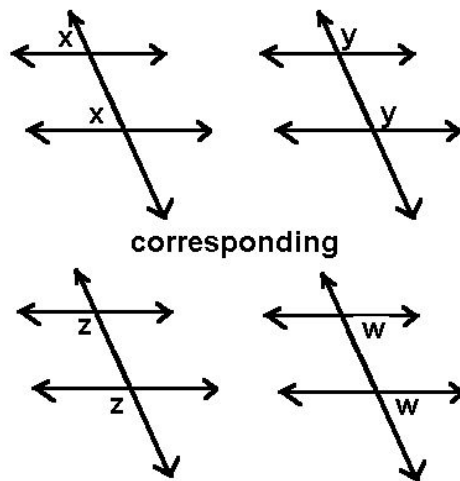

Parallel Lines

Transversal Lines

Any line that passes through a pair of parallel lines is called a Transversal Line.

From this diagram, there are three new pairs of equal angles that we can identify.

Corresponding Angles

Corresponding Angles are situated on the same side of the Transversal Line, one in the Interior Region of the Parallel Lines, and the other in the Exterior Region of the Parallel Lines.

corresponding

Alternate Interior Angles

Alternate – Interior Angles are situated on opposite sides of the Transversal Line in the Interior Region of the Parallel Lines.

alternate interior
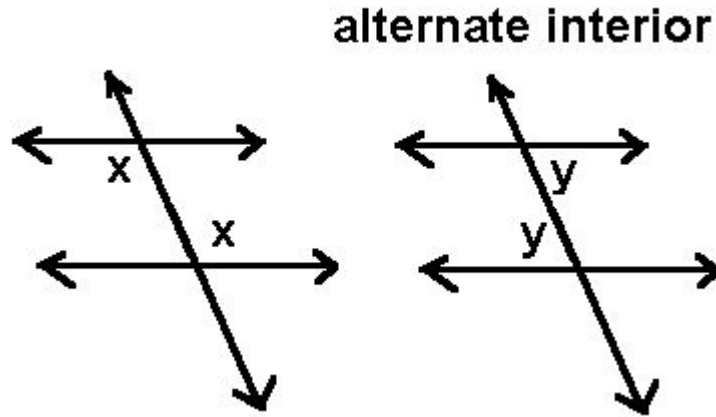
Alternate Exterior Angles

Alternate – Exterior Angles are situated on opposite sides of the Transversal Line in the Exterior Region of the Parallel Lines.