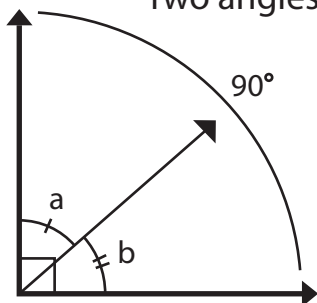# Complementary and Supplementary Angles

Complementary Angles

Two angles are complementary if they add up to 90 degrees (a right angle).

If $\angle a + \angle b = 90°$, then $\angle a$ and $\angle b$ are complementary angles.

Examples:
- 60° and 30° angles are complementary angles
- 80° and 10° angles are complementary angles
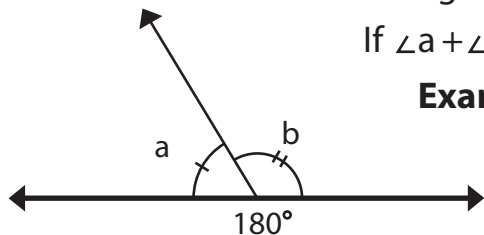- 20° and 30° angles **are not** complementary angles

Practice Problems: solve for the missing complementary angle, *x*.

$\angle 45 + \angle x = 90°, \angle x = $ _____ $\angle x + \angle 32 = 90°, \angle x = $ _____ $\angle 80 + \angle x = 90°, \angle x = $ _____

Supplementary Angles

Two angles are supplementary if they add up to 180 degrees.

If $\angle a + \angle b = 180°$, then $\angle a$ and $\angle b$ are supplementary angles.

Examples:
- 150° and 30° angles are supplementary angles
- 80° and 100° angles are supplementary angles
- 70° and 90° angles **are not** supplementary angles

Practice Problems: solve for the missing supplementary angle, *x*.

$\angle x + \angle 75 = 180°, \angle x = $ _____ $\angle x + \angle 50 = 180°, \angle x = $ _____ $\angle x + \angle 45 = 180°, \angle x = $ _____

Determine whether $\angle a$ and $\angle b$ are complementary or supplementary.

$\angle a = 50, \angle b = 40$ _____ $\angle a = 80, \angle b = 100$ _____

$\angle a = 35, \angle b = 145$ _____ $\angle a = 75, \angle b = 15$ _____

$\angle a = 20, \angle b = 70$ _____ $\angle a = 60, \angle b = 120$ _____

$\angle a = 65, \angle b = 115$ _____ $\angle a = 65, \angle b = 25$ _____