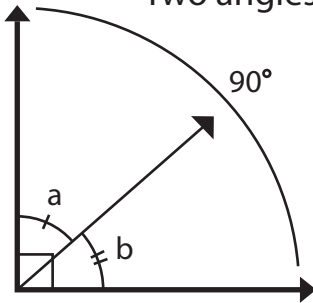


Complementary and Supplementary Angles

Complementary Angles

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

If $\angle a + \angle b = 90^\circ$, 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

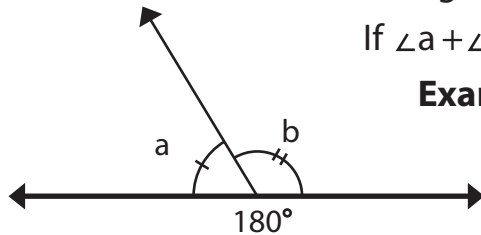
Practice Problems: solve for the missing complementary angle, x .

$$\angle 45 + \angle x = 90^\circ, \angle x = \underline{\hspace{2cm}} \quad \angle x + \angle 32 = 90^\circ, \angle x = \underline{\hspace{2cm}} \quad \angle 80 + \angle x = 90^\circ, \angle x = \underline{\hspace{2cm}}$$

Supplementary Angles

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

If $\angle a + \angle b = 180^\circ$, 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 .

$$\angle x + \angle 75 = 180^\circ, \angle x = \underline{\hspace{2cm}} \quad \angle x + \angle 50 = 180^\circ, \angle x = \underline{\hspace{2cm}} \quad \angle x + \angle 45 = 180^\circ, \angle x = \underline{\hspace{2cm}}$$

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

$\angle a = 50, \angle b = 40 \quad \underline{\hspace{2cm}}$

$\angle a = 80, \angle b = 100 \quad \underline{\hspace{2cm}}$

$\angle a = 35, \angle b = 145 \quad \underline{\hspace{2cm}}$

$\angle a = 75, \angle b = 15 \quad \underline{\hspace{2cm}}$

$\angle a = 20, \angle b = 70 \quad \underline{\hspace{2cm}}$

$\angle a = 60, \angle b = 120 \quad \underline{\hspace{2cm}}$

$\angle a = 65, \angle b = 115 \quad \underline{\hspace{2cm}}$

$\angle a = 65, \angle b = 25 \quad \underline{\hspace{2cm}}$