

Geometry: 1.6 Angle Pairs

Complementary and Supplementary Angles

$\angle 1$ and $\angle 2$ $\angle A$ and $\angle B$

complementary angles

Two positive angles whose measures have a sum of 90° . Each angle is the *complement* of the other.

$\angle 3$ and $\angle 4$ $\angle C$ and $\angle D$

supplementary angles

Two positive angles whose measures have a sum of 180° . Each angle is the *supplement* of the other.

Adjacent Angles

Complementary angles and supplementary angles can be *adjacent angles* or *nonadjacent angles*. **Adjacent angles** are two angles that share a common vertex and side, but have no common interior points.

common side
common vertex

$\angle 5$ and $\angle 6$ are adjacent angles.

$\angle 7$ and $\angle 8$ are nonadjacent angles.

Complimentary: Add to 90 degrees.

Supplementary: Add to 180 degrees.

Adjacent: Share a vertex & side.

1.6 Describing Angle Pairs

Angles $\angle ABC$ and $\angle KJF$ are **Complimentary**.
 $m\angle KJF = 37.5^\circ$. Find $m\angle ABC$.

$$\angle ABC + \angle KJF = 90^\circ$$

$$\begin{array}{r} \angle ABC + 37.5^\circ = 90^\circ \\ -37.5 \quad -37.5 \end{array}$$

$$\underline{m\angle ABC = 52.5^\circ}$$

Angles $\angle FGH$ and $\angle POT$ are **Supplimentary**.
 $m\angle FGH = 61.3^\circ$. Find $m\angle POT$.

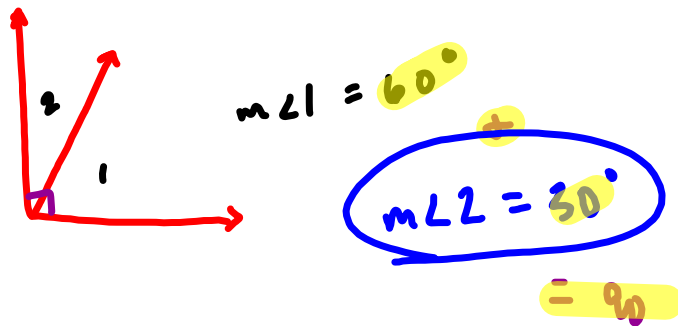
$$\angle FGH + \angle POT = 180^\circ$$

$$\begin{array}{r} 61.3^\circ + \angle POT = 180^\circ \\ -61.3^\circ \quad -61.3^\circ \end{array}$$

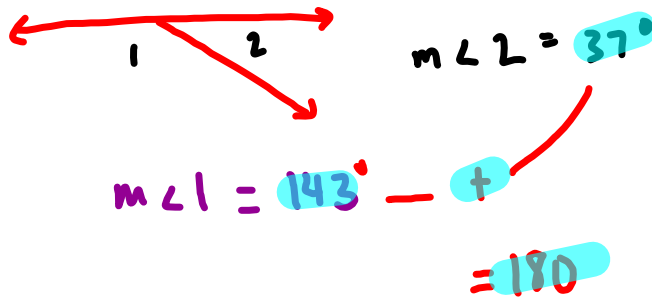
$$m\angle POT = 118.7^\circ$$

1.6 Describing Angle Pairs

Ex: Angle 2 is a **compliment** of Angle 1. Find $m\angle 2$.



Ex: Angle 1 is a **Supplement** of Angle 2. Find $m\angle 1$.

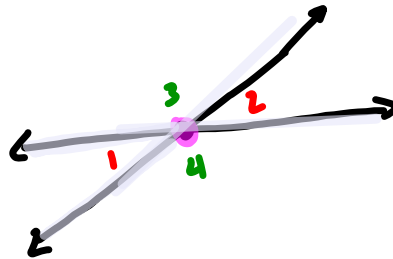
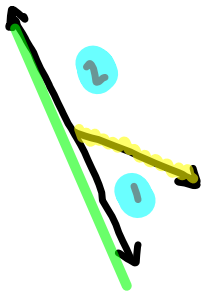


1.6 Describing Angle Pairs

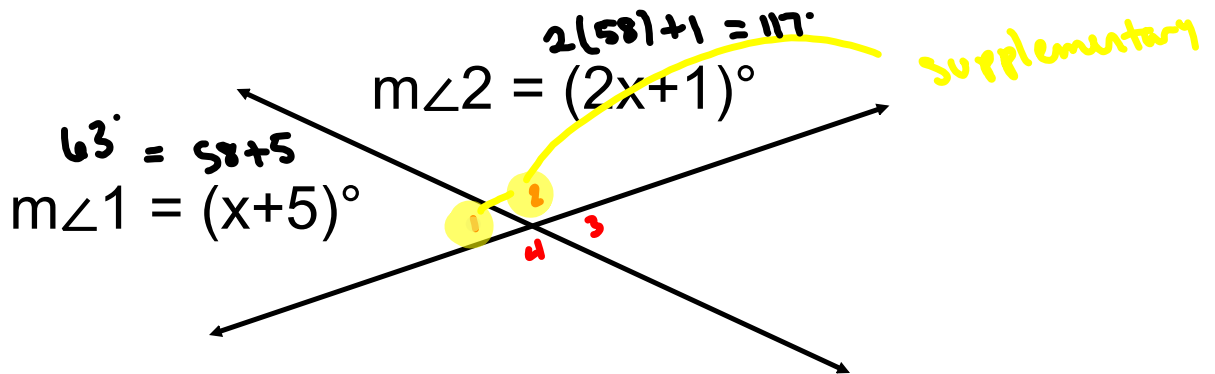
Vocab:

Linear Pairs: Supplementary Angles that share a common side.

Vertical Angles: 2 equal angles formed by sides extended through the vertex.



1.6 Describing Angle Pairs



Ex: Find the value of x .

$$x + 5 + 2x + 1 = 180$$

Find the measure of angle 3.

$$3x + 6 = 180$$

$$\begin{array}{r} -6 \\ -6 \end{array}$$

Find the measure of angle 4.

$$\frac{3x}{3} = \frac{174}{3}$$

$m\angle 1 = m\angle 3$ b/c they
are vertical angles

so $m\angle 3 = 63^\circ$

$$x = 58^\circ$$

$m\angle 2 = m\angle 4$ b/c
they are vertical
angles

so $m\angle 4$ is 117°

1.6 Describing Angle Pairs

Homework:

Pages 50-51

Numbers: 7-14, 17-19, 21

On 17 and 18 you don't need to write down your reasoning.

Attachments

MOfficePNG.png