

**Warm-up:**

Review tests.



# **What am I learning today?**

## **Learning Objective 2.1**

How can I describe and use different angle pair relationships?

## **What am I going to do today?**

- Complete and grade warm-up
- Take notes on angle pair relationships
- Practice angle pair relationships

## **What will I do to show that I have learned it?**

I can understand a certain angle pair relationship and use that relationship to build an equation to solve for a value.

**Supplementary Angles** – Two or more angles with a sum of  $180^\circ$  that can be created with adjacent and non-adjacent angles

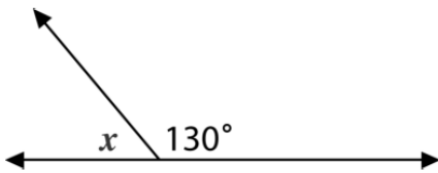


\*\* Adjacent supplementary angles form a linear pair since the angles form a straight line \*\*

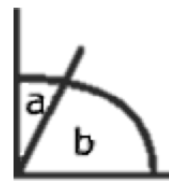
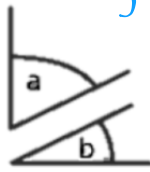
**EQUATION SETUP:**  $m\angle 1 + m\angle 2 = 180^\circ$

$$130^\circ + x^\circ = 180^\circ$$

$$x = 50^\circ$$



**Complementary Angles** – Two or more angles with a sum of  $90^\circ$  that can be created with adjacent and non-adjacent angles

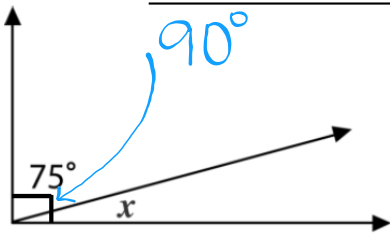


\*\*Adjacent complementary angles form a corner!\*\*

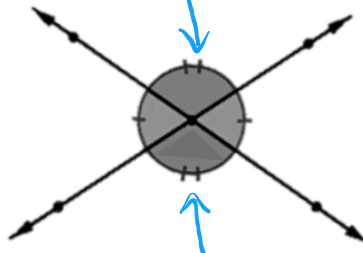
**EQUATION SETUP:**  $m\angle 1 + m\angle 2 = 90^\circ$

$$75^\circ + x^\circ = 90^\circ$$

$$x = 15^\circ$$

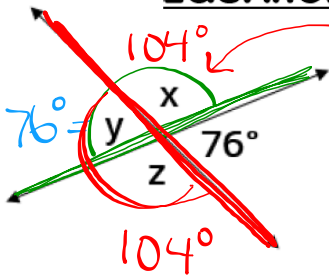


**Vertical Angles** – Two angles opposite of each other with the same vertex



\*\*Vertical <sup>angles</sup> lines are ONLY created by two intersecting lines! \*\*

**EQUATION SETUP:**  $m\angle 1$  =  $m\angle 2$

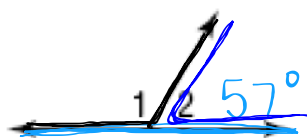


$$x + 76^\circ = 180^\circ$$

$$x = 104^\circ$$

**Find the measure of ALL numbered angles.**

1.  $m\angle 2 = 57$

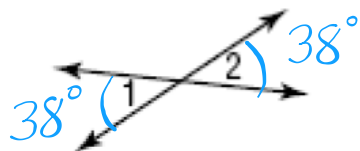


$$x + 57^\circ = 180^\circ$$
$$x = 123^\circ$$



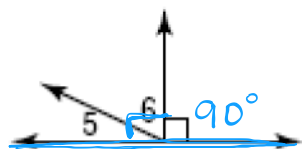
**Find the measure of ALL numbered angles.**

2.  $m\angle 1 = 38$



**Find the measure of ALL numbered angles.**

3.  $m\angle 5 = 22$



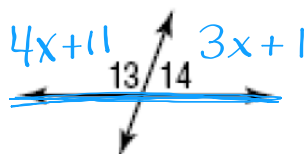
$$22^\circ + x = 90^\circ$$

$$22^\circ + x + 90^\circ = 180^\circ$$

$$x = 68^\circ$$

**Find the measure of ALL numbered angles.**

4.  $m\angle 13 = 4x + 11, \rightarrow 4(24) + 11 = 107^\circ$   
 $m\angle 14 = 3x + 1 \rightarrow 3(24) + 1 = 73^\circ$



$$(4x+11) + (3x+1) = 180$$

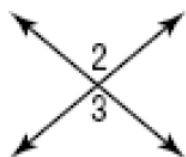
$$7x + 12 = 180$$

$$7x = 168$$

$$x = 24$$

Find the measure of ALL numbered angles.

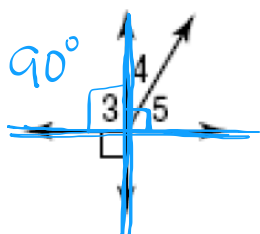
5.  $m\angle 2 = 4x - 26, \rightarrow 4(30) - 26 = 94^\circ$   
 $m\angle 3 = 3x + 4 \rightarrow 3(30) + 4 = 94^\circ$



$$4x - 26 = 3x + 4$$
$$x - 26 = 4$$
$$x = 30$$

Find the measure of ALL numbered angles.

$$6. \quad m\angle 4 = 2x - 5 \rightarrow 2(18) - 5 = 31^\circ$$
$$m\angle 5 = 4x - 13 \rightarrow 4(18) - 13 = 59^\circ$$



$$2x - 5 + 4x - 13 = 90$$

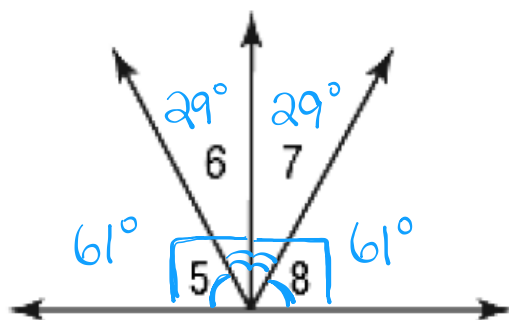
$$6x - 18 = 90$$

$$6x = 108$$

$$x = 18$$

**Find the measure of ALL numbered angles.**

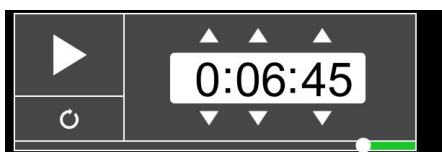
7.  $\angle 7$  and  $\angle 8$  are complementary.  $\angle 5 \cong \angle 8$  and  $m\angle 6 = 29$ .



**Summarize:**

Take 5 minutes to summarize both lessons (composition of transformations and angle pair relationships). Use the guided questions to help you create a summary for you to study later on.

**Classwork:**



Complete the classwork by using angle pair relationships.

**HW:** On top of the bin.



