Name _____ Date _____

UNIT 13: ANGLES **Warm Up 7E**

TOPIC 2: Warm Up

Angle Relationships—Introduction

An **angle** is a geometric figure formed by two _____ with a common endpoint.

The endpoint where the rays meet is called the _____ of the angle.

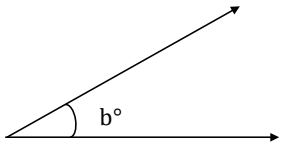
Angles are measured in _____.

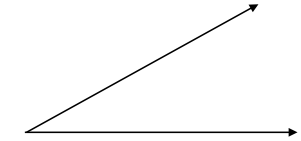
A _____ is used to measure angles.

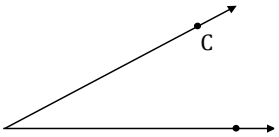
Angles with the **same measure** are called _____, the symbol is _____.

Naming an Angle:

Angles can be named 3 different ways.

a. 

b. 

c. 

A

Naming by the arc.

$\angle b°$

Naming by the vertex.

$\angle A$

Naming by three points.

$\angle CAD$ or $\angle DAC$

Classifying an Angle:

Angles can be classified by their measures.

An _____ angle measures between 0 and 90°.

A _____ angle measures exactly 90°. **Look for the box in the corner!*

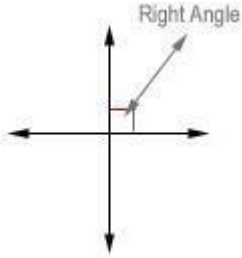
An _____ angle measures greater than 90° but less than 180 °.

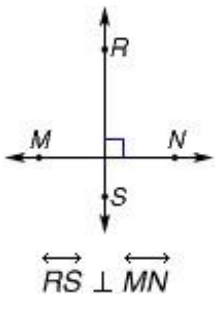
A _____ angle measures exactly 180°.

A _____ angle measures greater than 180° but less than 360 °.

Perpendicular Lines:

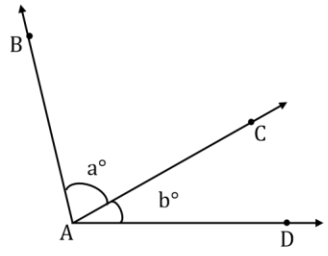
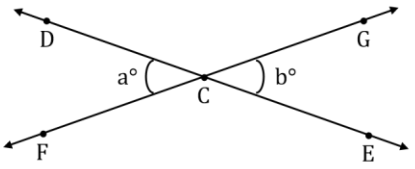
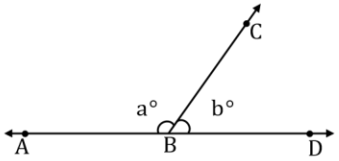
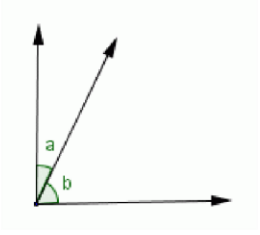
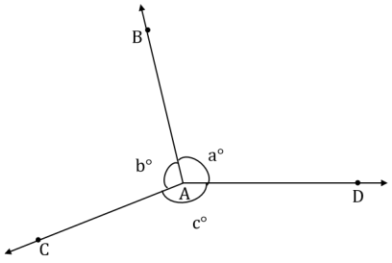
Perpendicular lines: *Lines that intersect to form 4 right angles*





TOPIC 2: Angle Relationships—Introduction

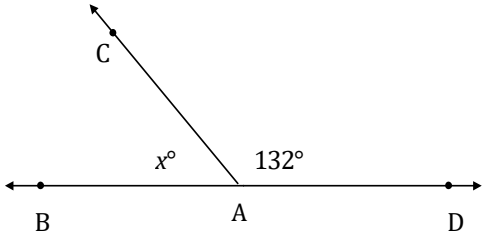
ANGLE RELATIONSHIPS

Angle Relationship	Angle Fact	Diagram
	FYI: *Adjacent angles* share a common vertex and a common side, but do not overlap. ***Next to each other*** **Examples**: --Angles a° and b ° are adjacent angles; --∠ BAC and ∠ CAD are adjacent angles.	
Vertical Angles	When two lines intersect, two pairs of opposite angles are formed—these angles are called *vertical angles*. Vertical angles are *congruent*. **Example**: --Angles a° and b ° are vertical angles.	
Supplementary Angles	*Supplementary angles* are two or more angles that add up to give a straight angle, 180° **Example**: --Angles a° and b ° are supplementary angles.	
Complementary Angles	*Complementary angles* are two or more angles that add up to give a right angle, 90° **Example**: --Angles a° and b ° are complementary angles.	
Angles at a Point	The measure of all angles formed by three or more rays with the same vertex is 360° **Example**: --Angles a°, b° and c° are angles at a point.	

Example 1:

a: Identify the ***angle relationship*** in the diagram.

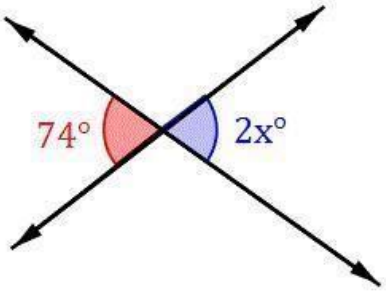
b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.



Example 2:

a: Identify the ***angle relationship*** in the diagram.

b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.

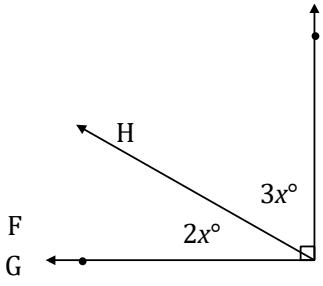


CHALLENGE:

Example 3: In the diagram to the right, **the ratio of <GFH to <EFH is 2:3.**

a: Identify the ***angle relationship*** in the diagram.

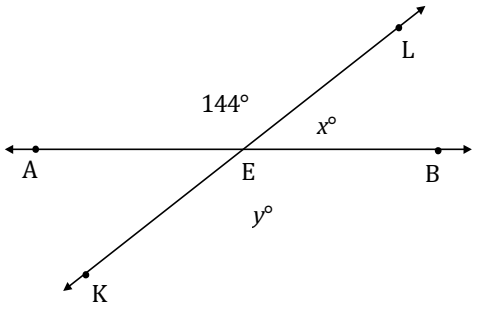
b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.



c: Find the measure of the missing angles.

Now You Try!

1. Identify the angle relationships.



<AEL and <LEB are _____ angles.

<LEB and <BEK are _____ angles.

<AEL and <BEK are _____ angles.

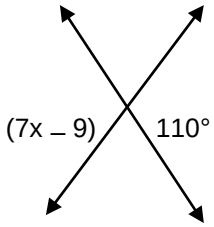
<AEL, <LEB, <BEK, and <KEA are _____ angles.

2. Find the measures of the missing angles in the space below. **Show work and/or justify your answer explain their relationship.**

<LEB	<BEK	<KEA

Problem Set 2: Angle Relationships—Introduction

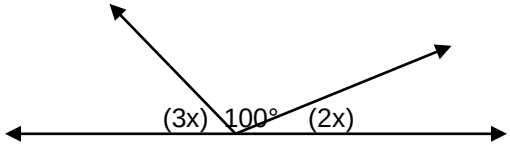
1. Use the figure to the right to answer the questions below



a:Identify the ***angle relationship*** in the diagram.

b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.

1. Use the figure to the right to answer the questions below

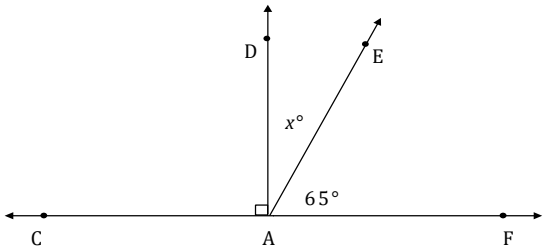


a: Identify the ***angle relationship*** in the diagram.

b: ***Write an algebraic equation*** for the angle relationship shown in the figure **<u>and solve</u>** for x.

c: Find the measures of the missing angles.

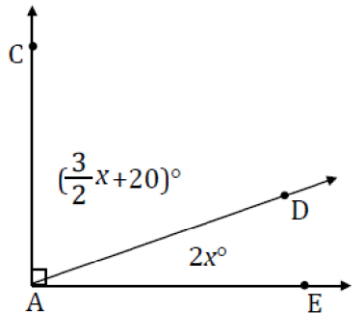
2. Use the figure to the right to answer the questions below



a: Identify the ***angle relationship*** in the diagram.

b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.

4. Use the figure to the right to answer the questions below a: Identify the ***angle relationship*** in the diagram.



b: ***Write an algebraic equation*** for the angle relationship shown in the figure and solve for x.

c. Check by finding the values of each angle.

Challenge

5. The **ratio** of the measures of a pair of **supplementary angles** on a line is 4:5. Write and solve an algebraic equation to find the measures of the two angles.

- ***Look back at Example 3 of your notes This means you!!!!***
- ***Make sure you know the difference between supplementary and complimentary***

RECALL:

6. If ***p*** and ***q*** are integers, then which of the following is **not** equivalent?

a: $-(\frac{-p}{-q})$ b: $\frac{-p}{q}$ c: $\frac{-p}{-q}$ d: $\frac{p}{-q}$

7. The top of a sailboat mast is 14.3 feet above the water surface. The bottom of the sailboat is 6.286 feet below the water surface. What is the difference in the elevations? Show ***all*** work! **No calculator**!