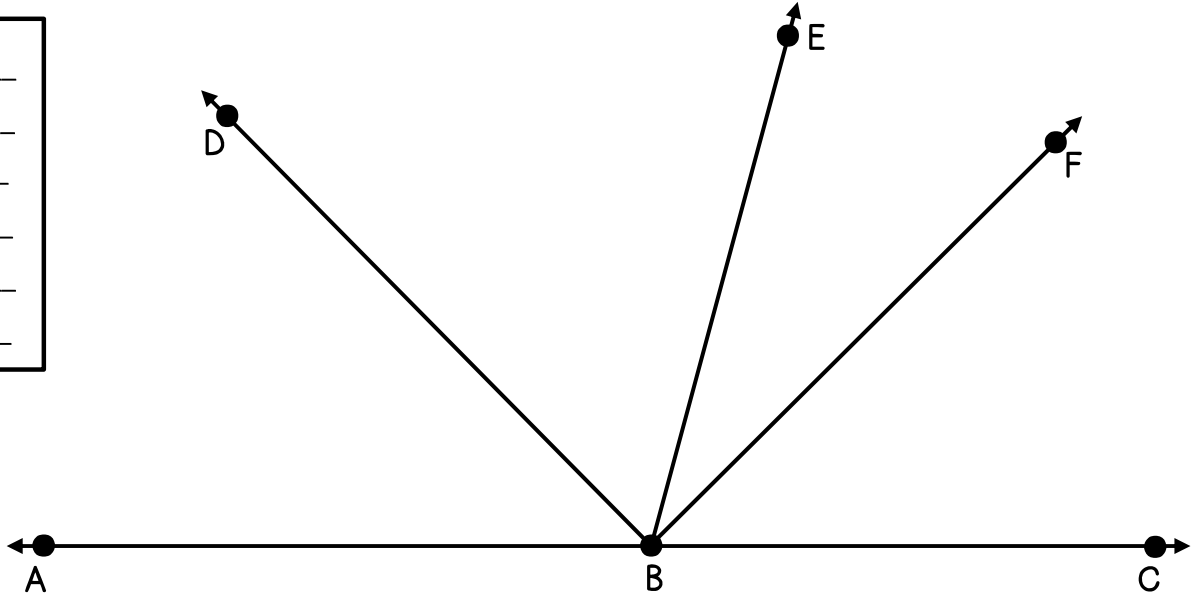


COMPLEMENTARY AND SUPPLEMENTARY ANGLES

Use a protractor to measure the size of each angle and complete the table below.

$m\angle ABC =$ _____
$m\angle ABD =$ _____
$m\angle EBF =$ _____
$m\angle EBC =$ _____
$m\angle DBC =$ _____
$m\angle DBE =$ _____

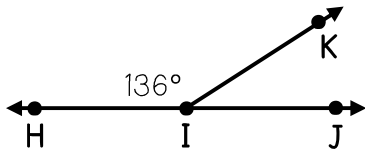


What is the sum of $\angle ABD$ and $\angle DBC$? How does it compare to the measure of $\angle ABC$?

	DEFINITION	EXAMPLES
ACUTE ANGLE	An angle that measures _____ 90° .	
OBTUSE ANGLE	An angle that measures between _____ and _____.	
RIGHT ANGLE	An angle that measures _____ 90° .	
STRAIGHT ANGLE	An angle that measures _____ 180° .	
COMPLEMENTARY ANGLES	A pair of angles that have a sum of _____.	
SUPPLEMENTARY ANGLES	A pair of angles that have a sum of _____.	

In 1-2, use your understanding of angle relationships to set up an equation and solve for the missing angle measure.

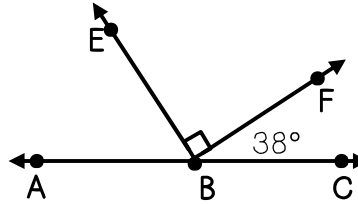
1. What is the measure of angle KIJ?



a. equation: _____

b. $m\angle KIJ$ _____

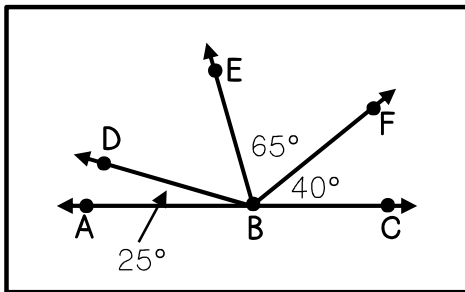
2. What is the measure of angle ABE?



a. equation: _____

b. $m\angle ABE$ _____

3. Use the diagram below to mark each statement as true or false.



_____ a. $\angle ABD$ and $\angle EBF$ are complementary angles

_____ b. $\angle DBE$ measures 50°

_____ c. $\angle FBC$ is an acute angle

_____ d. $\angle ABF$ and $\angle EBC$ are supplementary angles

Apply your understanding of angle relationships to answer the questions below.

4. Angles A and B are supplementary angles. The measure of angle A is 42° . Find the measure of $\angle B$.

a. equation: _____

b. $m\angle B$ _____

5. The measure of angle C is 12° . Angles C and D are complementary angles. Find $m\angle D$.

a. equation: _____

b. $m\angle D$ _____

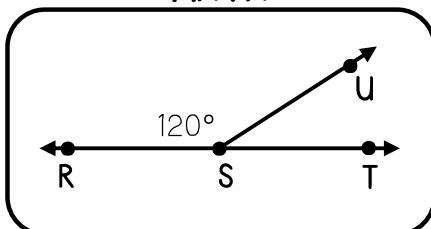
6. Angle F and angle G are complementary. Angle F measures $(4x+5)^\circ$ and angle G measures 15° . Find the value of x and the measure of each angle.

a. equation: _____

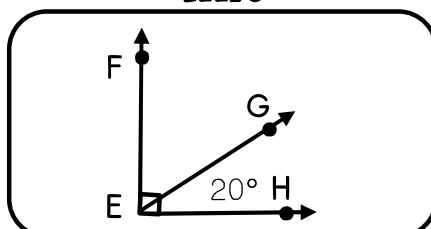
b. $x =$ _____, $m\angle F$ _____, $m\angle G$ _____

7. Three students were asked to sketch a diagram that included an angle measure of 60° . Circle the name of the student(s) who correctly completed the task.

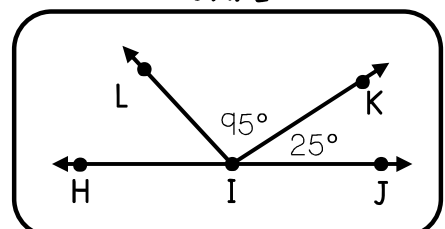
MAYA



ELLIS

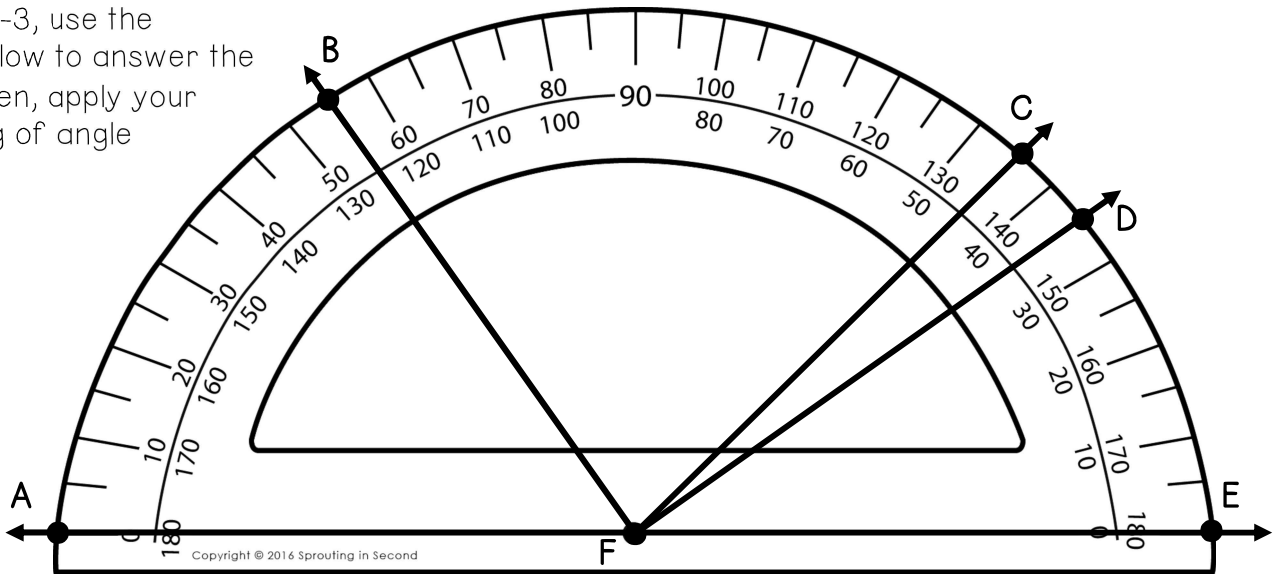


JAKE



COMPLEMENTARY AND SUPPLEMENTARY ANGLES

In questions 1-3, use the protractor below to answer the questions. Then, apply your understanding of angle relationships.



1. Determine the measure of each angle below.

A
 $m\angle AFC = \underline{\hspace{2cm}}$

B
 $m\angle CFB = \underline{\hspace{2cm}}$

C
 $m\angle AFD = \underline{\hspace{2cm}}$

D
 $m\angle EFC = \underline{\hspace{2cm}}$

2. Find the angle that makes each set supplementary angles.

- $\angle AFB$ and _____
- $\angle AFC$ and _____
- $\angle AFD$ and _____

3. Find the angle that makes each set complementary angles.

- $\angle BFC$ and _____
- $\angle AFB$ and _____

4. Angles A and B are supplementary angles. The measure of angle A is 38° . Find the measure of $\angle B$.

a. equation: _____

b. $m\angle B = \underline{\hspace{2cm}}$

5. The measure of angle C is 20.5° . Angles C and D are complementary angles. Find $m\angle D$.

a. equation: _____

b. $m\angle D = \underline{\hspace{2cm}}$

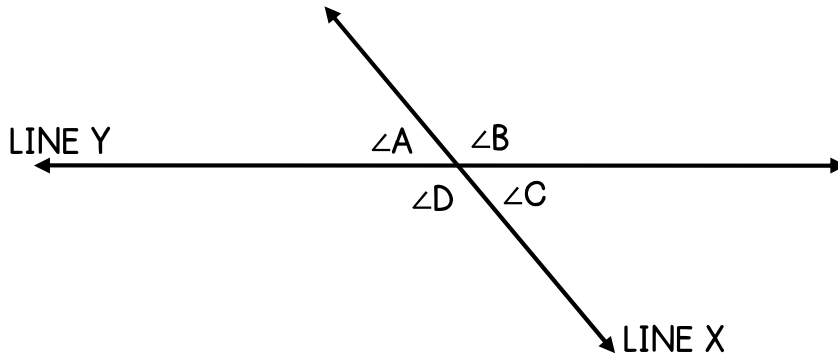
6. Angle F and angle G are complementary. Angle F measures $(2x+7)^\circ$ and angle G measures 18° . Find the value of x and the measure of each angle.

a. equation: _____

b. $x = \underline{\hspace{2cm}}$, $m\angle F = \underline{\hspace{2cm}}$, $m\angle G = \underline{\hspace{2cm}}$

VERTICAL AND ADJACENT ANGLES

In the picture below, Lines X and Y are straight lines that intersect. Use a protractor to measure each of the 4 angles that were formed and complete the table.



$m\angle A =$ _____
$m\angle B =$ _____
$m\angle C =$ _____
$m\angle D =$ _____

- What do you notice about the angle measures?
- What do you notice about the sum of all four angles above?

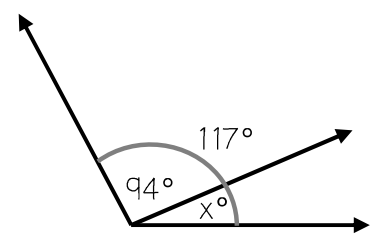
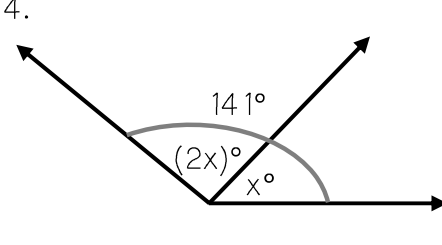
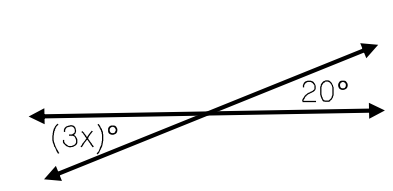
Two types of special angles are formed when two lines intersect. Use the picture above and the table to help you define and describe these types of angle pairs.

	DEFINITION	EXAMPLES
VERTICAL ANGLES	A pair of _____ angles formed by _____ lines; the angles are _____	\angle ____ and \angle ____ \angle ____ and \angle ____
ADJACENT ANGLES	Two angles that share a common _____ and a common _____; if the two angles form a straight line, they are supplementary and have a sum of _____	\angle ____ and \angle ____ \angle ____ and \angle ____

Use what you know about intersecting lines to label the missing angles in the pictures below.

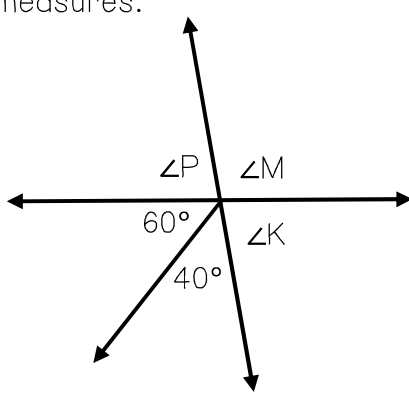
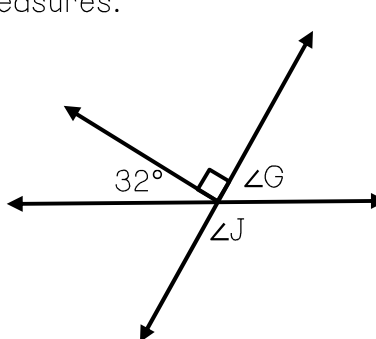
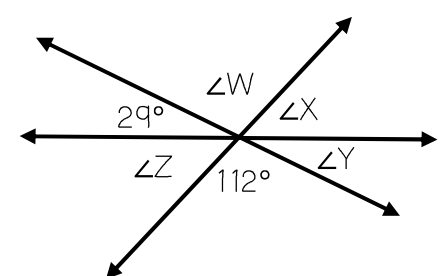
<p>1.</p> <p style="text-align: right;">$x =$ _____</p> <p>type of angle pair: _____</p>	<p>2.</p> <p style="text-align: right;">$x =$ _____</p> <p>type of angle pair: _____</p>
---	---

Use your understanding of angle relationships to set up and solve an equation to find the missing angle measures.

<p>3.</p>  <p>equation: _____</p> <p>value of x: _____</p> <p>angle measures: _____</p>	<p>4.</p>  <p>equation: _____</p> <p>value of x: _____</p> <p>angle measures: _____</p>	<p>5.</p>  <p>equation: _____</p> <p>value of x: _____</p> <p>angle measures: _____</p>
--	---	--

Angle relationships allow us to determine any unknown _____.

All angles around a _____ will always have a sum of _____.

<p>6. Determine the missing angle measures.</p>  <p>equation: _____</p> <p>$m\angle K =$ _____</p> <p>equation: _____</p> <p>$m\angle M =$ _____</p>	<p>7. Determine the missing angle measures.</p>  <p>equation: _____</p> <p>$m\angle G =$ _____</p> <p>equation: _____</p> <p>$m\angle J =$ _____</p>	<p>8. Determine the missing angle measures.</p>  <p>equation: _____</p> <p>$m\angle Z =$ _____</p> <p>Use your knowledge of vertical angles to find the measure of each angle.</p> <p>$m\angle W =$ _____</p> <p>$m\angle X =$ _____</p> <p>$m\angle Y =$ _____</p>
---	---	--

Summarize today's lesson:

VERTICAL AND ADJACENT ANGLES

Answer each question below. Match your answers in the table to solve the riddle.

<p>1 Find the value of x.</p>	<p>2 Find the value of x.</p>	<p>3 Find the value of x.</p>
<p>4 If the measure of $\angle ADC$ is 50°, then what is the measure of $\angle BDC$?</p>	<p>5 Find the value of x.</p>	<p>6 Find the value of x.</p>
<p>7 Find the measure of $\angle 1$.</p>	<p>8 If the measure of $\angle AED$ is 89°, then what is the measure of $\angle CED$?</p>	<p>9 Find the value of x.</p>

W: 76°	S: 25°	T: 44°	N: 90°	U: 20°
L: 23°	H: 119°	M: 106°	P: 148°	C: 95°
A: 107°	E: 17.3°	D: 67°	R: 45°	I: 48°

WHAT DIY TOOLS DO YOU USE IN MATH?

3
6
1
9
8
2
1
8
4
7
5