

Name: _____

Date: _____

Topic 2: Angle Relationships Basic

Classwork 10.2

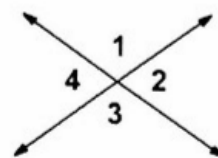
Aim: How can we find unknown angles using angle relationships?

Angle Relationship	Angle Fact	Diagram
VERTICAL ANGLES	<ul style="list-style-type: none"> - opposite angles formed by two intersecting lines - Vertical angles are <u>congruent</u>. $\angle 1$ and $\angle 3$ are vertical $\angle 2$ and $\angle 4$ are vertical 	
COMPLEMENTARY ANGLES	<ul style="list-style-type: none"> - two or more angles whose measures <u>have a sum of 90°</u> - form a right angle 	
SUPPLEMENTARY ANGLES	<ul style="list-style-type: none"> - two or more angles whose measures <u>have a sum of 180°</u> - form a straight angle 	

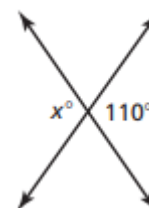
Example 1: Name 2 pairs of vertical angles. _____ & _____

_____ & _____

If $m\angle 2 = 50^\circ$, find the $m\angle 4$. _____

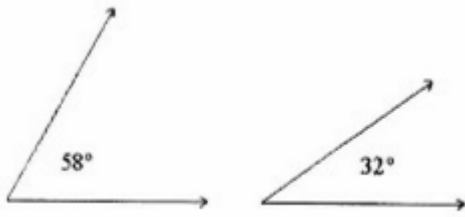


Try It: Find the measure of x and explain how you determined your answer.

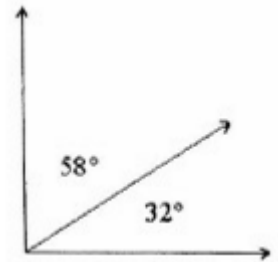


- Two angles are called **COMPLEMENTARY ANGLES** if their sum equals _____.

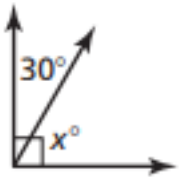
These two angles are complementary.



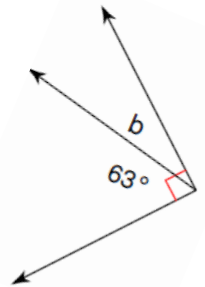
Notice how these two angles can be placed together to form a right angle!



Example 2: Find the measure of the missing angle using the diagram below.



Try It: Find the measure of angle b in the diagram below.



Example 3: Find the complement of:

a. 45° _____

b. 1° _____

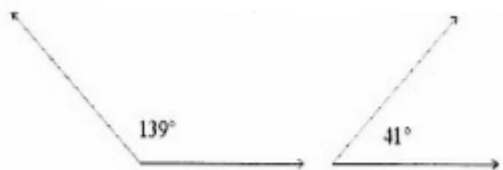
To find the complement of an angle, subtract the given angle from

_____.

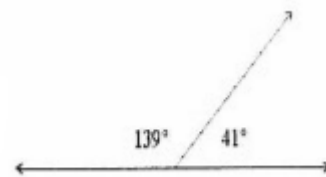
Try It: Find the complement of an angle whose measure is 29° .

➤ Two angles are called **SUPPLEMENTARY ANGLES** if their sum equals _____.

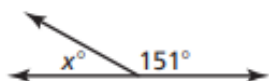
Example 4: These two angles are supplementary.



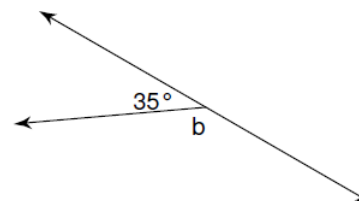
Notice how these two angles can be placed together to form a straight line!



Example 4: Find the measure of the missing angle using the diagram below.



Try It: Find the measure of angle b in the diagram below.



Example 4: Find the supplement of:

a. 100° _____

b. 44° _____

To find the
supplement of an
angle, subtract the
given angle from

_____.

Try It: If an angle measures 115° , what is the measure of its supplement?

On your own!

1. Which pair of angles are **supplementary**?

A 42° and 58°

B 100° and 80°

C 38° and 52°

D 300° and 60°

2. Which pair of angles are **complementary**?

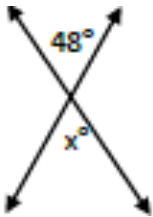
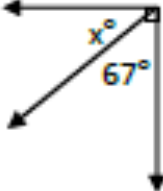

A 42° and 58°

B 100° and 80°

C 38° and 52°

D 300° and 60°

(#3-5) Identify the angle relationship on the line and then find the value of x. Show work!

<p>3.</p>  <p>_____</p>	<p>4.</p>  <p>_____</p>	<p>5.</p>  <p>_____</p>
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6. What is the complement of a 38° angle?

A 38°

B 52°

C 142°

D 322°

7. If an angle measures 112° , what is the measure of its supplement?