

Warmup 1/(Complement of a 59° angle)
*****GET A WHITEBOARD, MARKER, & PROTRACTOR!*****

1) How many pairs of congruent angles (angles with the same measure) are there in this picture? Find and name them all!

ANSWER

$\angle 1 \cong \angle 9$, $\angle 2 \cong \angle 10$, $\angle 5 \cong \angle 6$

- ***If I owe you a sticker (93% or above on the last quiz) don't forget to come pick one out! ***
- (before or after class)

CHECK FOR UNDERSTANDING: Protractors

- Your table has **FIVE MINUTES** to make sure everybody is prepared for the upcoming CFU on using a protractor.
- If people at your table got a problem incorrect, you **ALL NEED TO WORK TOGETHER** to make sure that they understand.
- If somebody at your group does not get a 100% on the CFU, it is partly your fault because your group didn't teach them well enough!!!
- I will accept measurements **WITHIN THREE DEGREES** as correct. Be precise!!!

1) 122°
 2) 76°
 3) 167°
 4 & 5) (look at your neighbors' angles for these)

How many names for this angle are there???

Angles in the Classroom

- Which type of angle is **most common** in this classroom?
- Challenge: Without moving, find as many examples of **acute** and **obtuse** angles in this classroom as you can!

WHITEBOARDS!

► Estimate the angle measure:

80°

A diagram of an acute angle. The vertex is at the bottom left. One ray points horizontally to the right. The other ray points up and to the right. The angle is labeled 80 degrees.

WHITEBOARDS!

► Estimate the angle measure:

53°

A diagram of an acute angle. The vertex is at the bottom left. One ray points horizontally to the right. The other ray points up and to the right. The angle is labeled 53 degrees.

WHITEBOARDS!

► Estimate the angle measure:

103°

A diagram of an obtuse angle. The vertex is at the bottom left. One ray points horizontally to the right. The other ray points up and to the left. The angle is labeled 103 degrees.

WHITEBOARDS!

► Estimate the angle measure:

45°

A diagram of an acute angle. The vertex is at the bottom left. One ray points vertically upwards. The other ray points up and to the right. The angle is labeled 45 degrees.

WHITEBOARDS!

► Estimate the angle measure:

27°

A diagram of an acute angle. The vertex is at the bottom left. One ray points up and to the right. The other ray points up and to the right, closer to the vertical. The angle is labeled 27 degrees.

WHITEBOARDS!

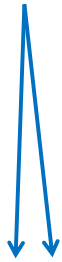
► Estimate the angle measure:

152°

A diagram of an obtuse angle. The vertex is at the bottom left. One ray points horizontally to the right. The other ray points up and to the left. The angle is labeled 152 degrees.

WHITEBOARDS!

► Estimate the angle measure:



8°

WHITEBOARDS!

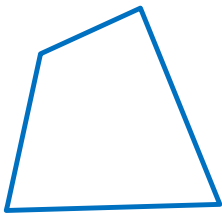
► Estimate the angle measure:



143°

WHITEBOARDS!

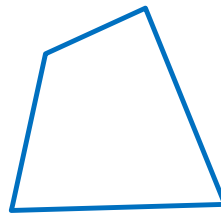
► **BOTTOM LEFT** angle:



76°

WHITEBOARDS!

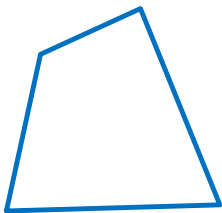
► **BOTTOM RIGHT** angle:



70°

WHITEBOARDS!

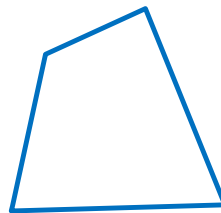
► **TOP LEFT** angle:



127°

WHITEBOARDS!

► **TOP RIGHT** angle:



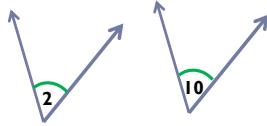
87°

IMPORTANT GEOMETRY VOCAB

- ▶ Two angles that have the same measure are called

CONGRUENT.

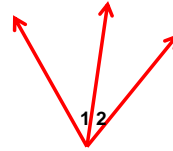
- ▶ Symbol: \cong



- ▶ Shown in a diagram using arc marks.

$$\angle 2 \cong \angle 10$$

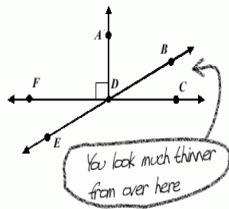
- ▶ **Adjacent Angles:** Share a side and vertex



- ▶ In the diagram, angles 1 and 2 are adjacent.

Complementary Angles

3. Name an angle complimentary to BDC:



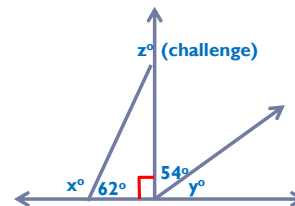
- ▶ **Complementary Angles** are two angles whose measures add up to 90° .

- ▶ **Supplementary Angles** are two angles whose measures add up to 180° .

- ▶ (They don't have to be adjacent!!!)

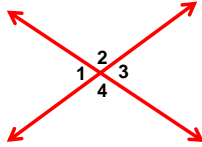
- ▶ What is the **complement** of a 50° angle?
- ▶ What is the **supplement** of a 50° angle?
- ▶ What is the **complement** of a 27° angle?
- ▶ What is the **supplement** of a 102° angle?
- ▶ What is the **supplement** of a 155.5° angle?
- ▶ What is the **complement** of a 45° angle?
- ▶ What is the **complement** of a 95° angle?

Find the missing angle measures:



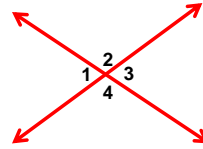
► **Vertical Angles:** Angles across from each other at the intersection of two straight lines.

► They are **always** congruent!!!



► $\angle 1 \cong \angle 3$ and $\angle 2 \cong \angle 4$

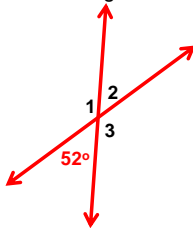
► Two angles that form a straight line will always be supplementary!



► $m\angle 1 + m\angle 2 = 180^\circ$

Example

► Find the other three angle measures.



Name an example of each of the following:

- An acute angle
- An obtuse angle
- A right angle
- A straight angle
- A pair of vertical angles
- A pair of complementary angles
- A pair of supplementary angles
- A pair of adjacent angles
- A pair of congruent angles

