

Name _____



Let's get ready for grade 8 math!

Due: Wednesday, August 26, 2026 (1st day of school)



**Choose ONE OR MORE of the following options to complete this summer.
Doing this work will help you to feel ready to start Grade 8 math!**

☐ **Option 1:**

Complete the pages labeled PREREQUISITE in this packet. These pages will help you review the coordinate plane and angles so that you will feel ready to start your first Grade 8 math unit on transformations and congruence.

☐ **Option 2:**

Complete the pages labeled GRADE 8 WORK in this packet. These pages are on the topic you'll be learning in your first Grade 8 math unit on transformations and congruence.

After you complete the above options, you can also work on your **iReady Math My Path** online lessons. iReady lessons do not work on a phone, so you will need access to a computer. The computers at the Chelsea Public Library are an option.

Go your school's launch page to access i-Ready:

<https://browne.chelseaschools.com/s-launcher>

<https://clark.chelseaschools.com/s-launcher>

<https://wright.chelseaschools.com/s-launcher>

Questions? Email your school's math coach.

Browne Middle School: flickj@chelseaschools.com

Clark Avenue Middle School: burucas@chelseaschools.com

Wright Science and Technology Academy: weaverj@chelseaschools.com

Questions? Email Browne Middle School math coach: flickj@chelseaschools.com

PREREQUISITE

Allyn is a college student. She started her day in her room. Then she attended classes in the Science, Education, and Art buildings. She ate lunch at the dining hall before meeting a friend at the Music building.

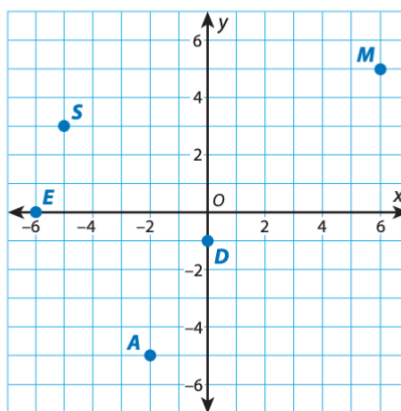
The coordinate plane represents a map of Allyn's college campus. Graph each building as a point on a coordinate plane labeled with the first letter of the building.

Building	Science	Education	Art	Dining	Music
Coordinate	$(-5, 3)$	$(-6, 0)$	$(-2, -5)$	$(0, -1)$	$(6, 5)$

You can graph the ordered pairs to describe the locations.

You can use words to describe the locations.

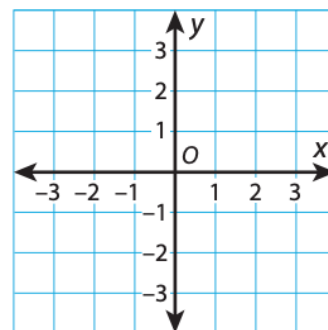
Building	Location from the Origin
Science	5 units left, 3 units up
Education	6 units left
Art	2 units left, 5 units down
Dining	1 unit down
Music	6 units right, 5 units up



Use the example above to help you complete the problem below:

Graph and label these locations on a coordinate plane. Explain how each point is related to the origin.

Location	Coordinate
Home	$(0, -3)$
School	$(-2, -3)$
Library	$(-1, 3)$
Park	$(2, -3)$



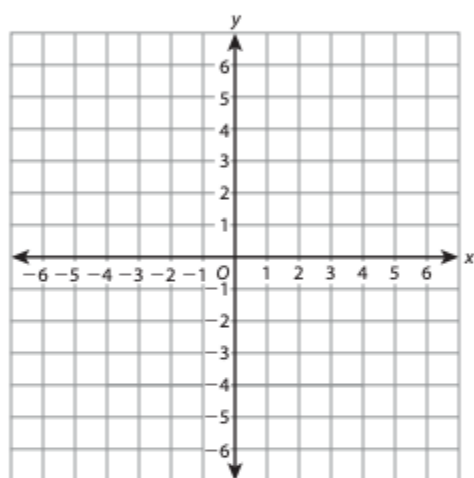
PREREQUISITE

Use this information for problems 5–6.

You can use a coordinate plane to represent the locations of different activities at a summer camp. The ordered pairs in the table show the location of each activity.

Activity	Canoeing	Swimming	Hiking	Art	Fishing
Coordinates	$(-6, 5)$	$(2, -2)$	$(-3, -3)$	$(4, 6)$	$(-4, 0)$

- 5 Graph each activity as a point on the coordinate plane. Label each point with the first letter of the activity.

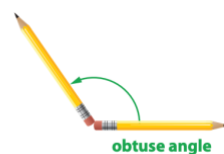
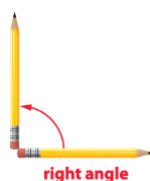


- 6 Describe the location from the origin of each point in problem 5.

- 7 What are the signs of the coordinates of a point in each of the four quadrants?

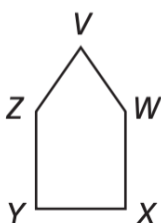
PREREQUISITE

- A **right angle** measures exactly 90 degrees.
- An **acute angle** measures less than 90 degrees.
- An **obtuse angle** measures more than 90 degrees.



Use the above information to complete the problem below:

Logan sketched the front of his townhouse. He labeled the angles in his sketch. Fill in the table below to identify angles V through Z as acute, right, or obtuse.



Acute angle < 90 degrees	Right angle = 90 degrees	Obtuse angle > 90 degrees

Example

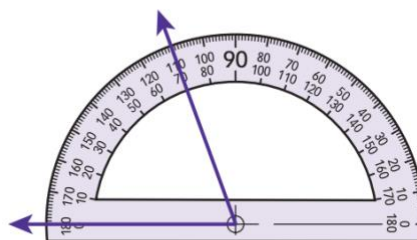
Omar drew the angle at the right. What is the measure of the angle?

Line up the 0° or the 180° mark on a protractor with one ray of the angle.

Line up the center point of the protractor with the vertex of the angle.

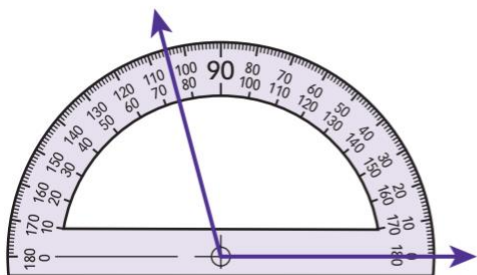
Look at the other ray. Read the number of degrees on the protractor. Read the number that is less than 90, since the angle is less than 90° .

The angle measures 70° .



Use the above example to complete this problem:

Read the number of degrees on the protractor to find the measure of the angle.



The angle measures _____ degrees.

PREREQUISITE

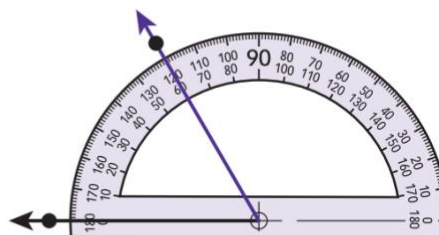
Example

Stephanie wants to draw a 60° angle. She drew a ray and positioned the endpoint of the ray on a protractor's center point. Then she drew a point at 0° on the ray. How does she draw the other ray to form a 60° angle?

Find 60° on the protractor.

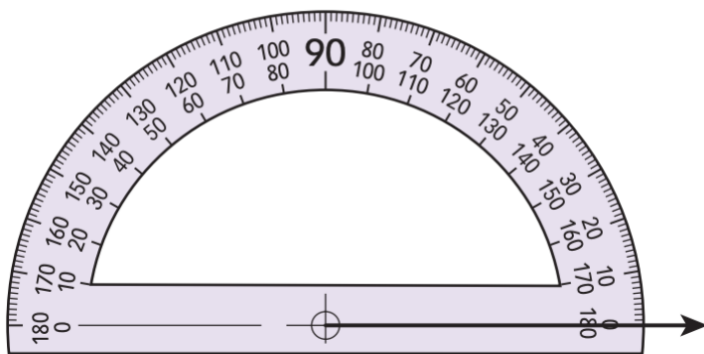
Draw a point at the 60° -degree mark.

Draw a ray from the vertex through this point.



Use the above example to complete this problem:

Draw a ray to show a 70° angle.



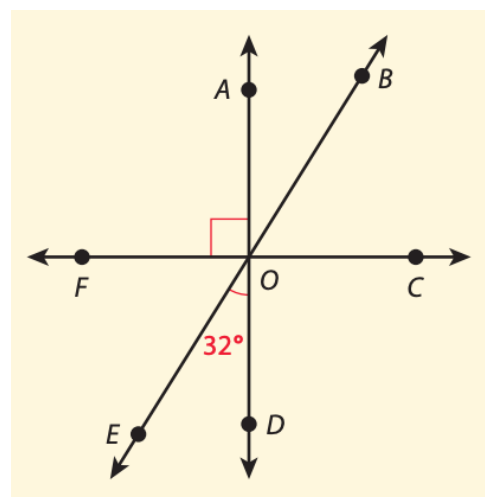
In this diagram, $\angle EOD$ and $\angle AOB$ are called **vertical angles**. They are opposite angles formed by two intersecting lines. Both angles have the same measurement.

What is **another pair of vertical angles** in the diagram?

$\angle$ _____ & $\angle$ _____

$\angle FOE$ and $\angle EOD$ are called **complementary angles** because their measurements add up to 90 degrees.

What is the measurement of $\angle FOE$? _____ degrees

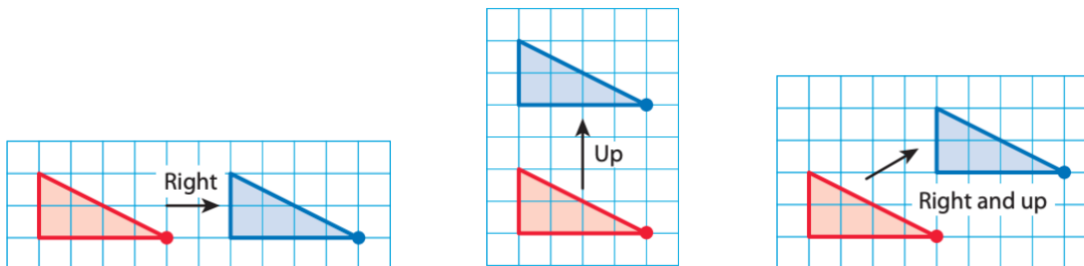


$\angle EOD$ and $\angle EOA$ are called **supplementary angles** because their measurement add up to 180 degrees.

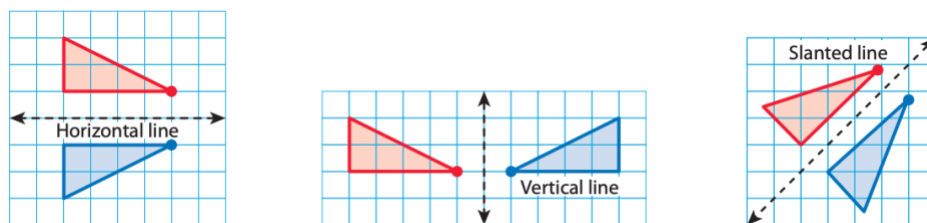
What is the measurement of $\angle EOA$? _____ degrees

GRADE 8 WORK

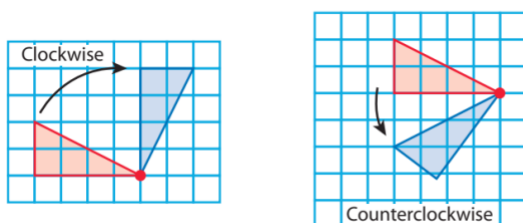
A **translation**, or slide, moves every point of a figure the same distance and in the same direction. The figure moves left, right, up, or down. Here are some examples of translations.



A **reflection**, or flip, flips a figure across an imaginary line that can be horizontal, vertical, or slanted. The line is called a **line of reflection**. Imagine folding on the line of reflection. The original figure and its image would match exactly. Corresponding points on the original figure and its image are the same distance from the line of reflection. Here are some examples of reflections.



A **rotation**, or turn, moves a figure about, or around, a fixed point. The fixed point is called the **center of rotation**. The figure turns in either a clockwise or counterclockwise direction. Here are some examples of rotations.

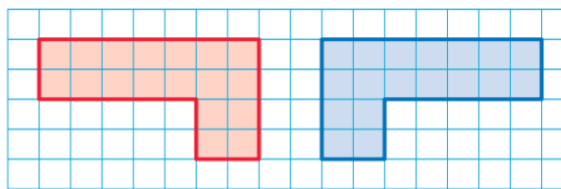


► Reflect

- 1 When a figure is translated, reflected, or rotated, what's the same about the original figure and its image? What's different?

GRADE 8 WORK

The figure on the right is a transformation of the figure on the left. Each square represents 1 unit.



- 2** Is the transformation a translation, reflection, or rotation? Explain your reasoning.

- 3** How do the lengths of the sides in the original figure compare to the lengths of the sides in its image? How do you know?

- 4** Describe the angles in the original figure. _____

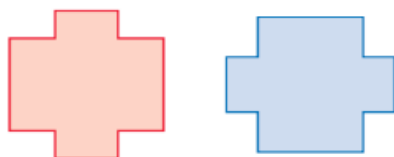
Describe the angles in the image. _____

- 5** Are any of the sides of the original figure parallel? _____

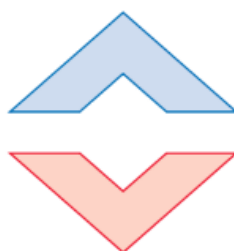
Are any of the sides parallel in the image? _____

- 6** For each problem, **which (if any) transformation** is shown? If there is no transformation shown, explain why.

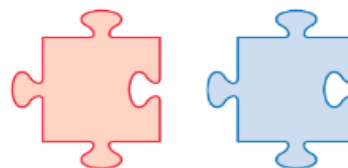
a.



b.

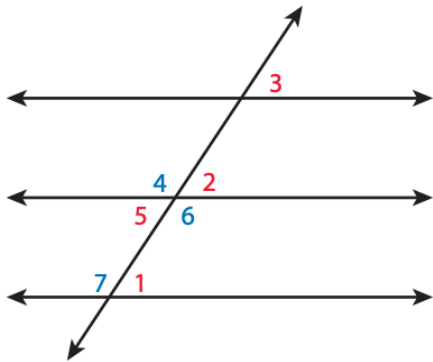


c.



GRADE 8 WORK

When you have parallel lines cut by another line (called a transversal), there are some special angle relationships, as shown in the table. This symbol means congruent, or the same measurement: $\cong$



$\angle 2$ and $\angle 5$ are vertical angles	$\angle 2 \cong \angle 5$
$\angle 1$ and $\angle 2$ are corresponding angles	$\angle 1 \cong \angle 2$
$\angle 1$ and $\angle 5$ are alternate interior angles	$\angle 1 \cong \angle 5$
$\angle 5$ and $\angle 6$ are a linear pair	$m\angle 5 + m\angle 6 = 180^\circ$

- 1** Name other pairs of corresponding angles, alternate interior angles, vertical angles, and angles in a linear pair.

2

In this diagram, lines m and n are parallel. Line p is the transversal.

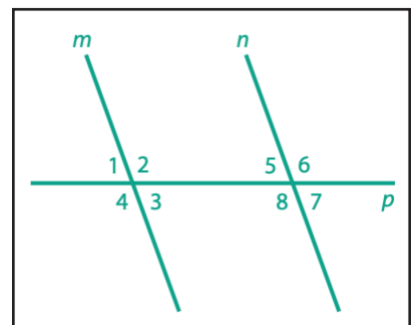
List a pairs of angles for each:

Vertical angles: _____ & _____

Corresponding angles: _____ & _____

Alternate interior angles: _____ & _____

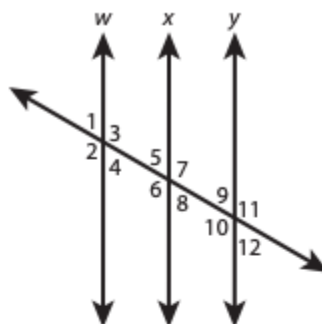
Linear pair: _____ & _____



GRADE 8 WORK

Example

In the diagram, lines w , x , and y are parallel. Use the terms *corresponding angles*, *alternate interior angles*, and *linear pair* to describe some of the angle relationships in the diagram.



$\angle 1$ and $\angle 9$ are corresponding angles.

Corresponding angles formed by a transversal crossing parallel lines are congruent, so $\angle 1 \cong \angle 9$.

$\angle 4$ and $\angle 5$ are alternate interior angles. Alternate interior angles between parallel lines are congruent, so $\angle 4 \cong \angle 5$.

$\angle 1$ and $\angle 3$ form a linear pair. Linear pairs are supplementary, so $m\angle 1 + m\angle 3 = 180^\circ$.

- 1 Use the diagram in the example. Name a different pair of corresponding angles, a different pair of alternate interior angles, and a different linear pair.

corresponding angles: _____

alternate interior angles: _____

linear pair: _____

- 2 Use the diagram in the example. If $m\angle 7 = 108^\circ$, what is $m\angle 12$? Explain how you found the measure.

Vocabulary

transversal a line that crosses two lines.

corresponding angles angles in the same position in the intersections of a transversal and two or more parallel lines.

alternate interior angles angles between two parallel lines and on opposite sides of a transversal.

linear pair adjacent supplementary angles.

