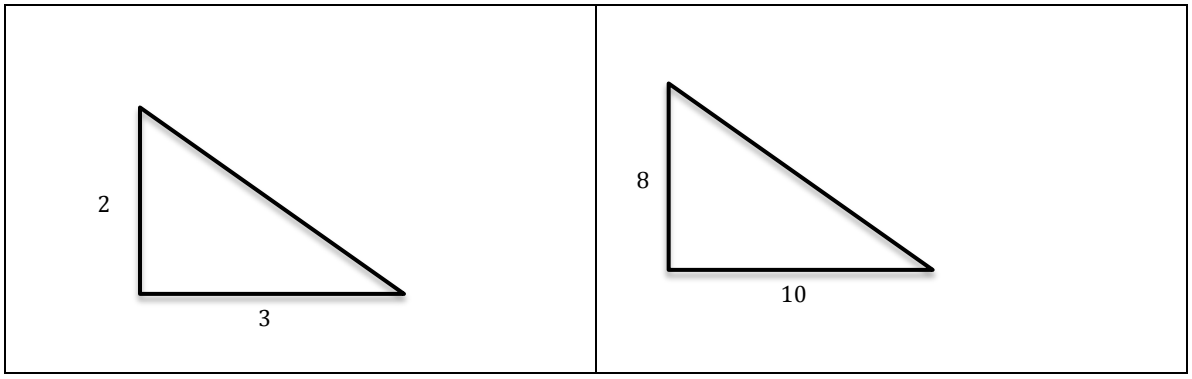
Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

Learning Objective: We will use the Pythagorean Theorem to determine the distance between two points on the coordinate plane. (Lesson 77)

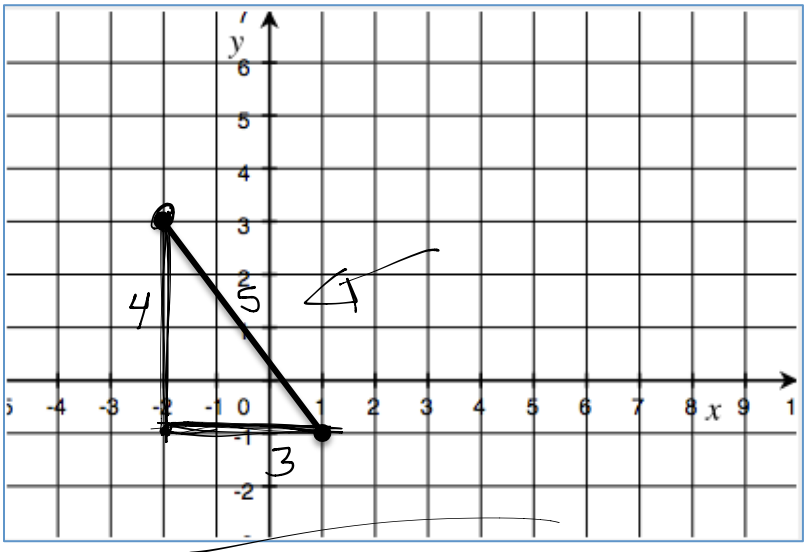
Activating Prior Knowledge:

We can use the Pythagorean Theorem to find the length of missing sides of a right triangle.



Concept Development:

If we had a coordinate plane, could we use the Pythagorean Theorem somehow to help us find the distance of the hypotenuse of a right triangle? How??



The Distance Formula: $\sqrt{(-2-1)^2+3-(-1)^2}$

$$\sqrt{(x_1-x_2)^2+(y_1-y_2)^2}=c$$

Name: _____ Math 7.2, Period _____

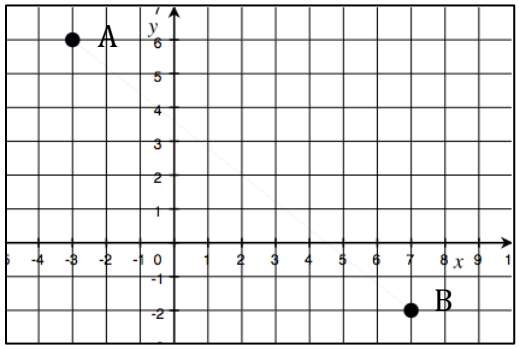
Mr. Rogove Date: _____

Guided Practice:

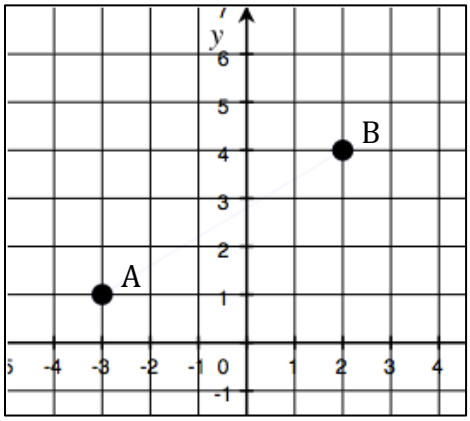
Steps for Finding the Distance Between 2 Points on the Coordinate Plane

1. Draw a right triangle, using the given diagonal length as your hypotenuse.
2. Use the Pythagorean Theorem ($a^2 + b^2 = c^2$) to determine the length of the hypotenuse.
3. Estimate the hypotenuse to the nearest tenth of a unit.

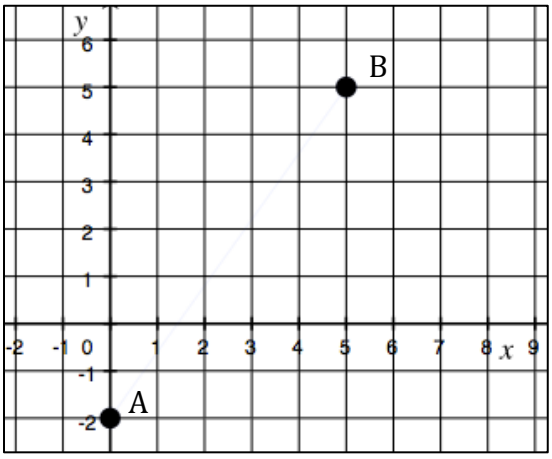
Find the distance between A and B.



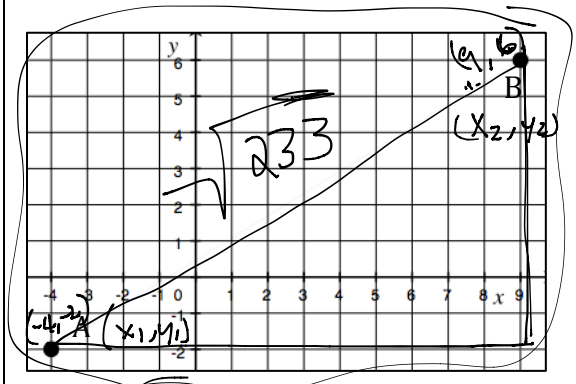
Find the distance between A and B.



Find the distance between A and B.



Find the distance between A and B.



$\sqrt{233}$

$c = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$

$\sqrt{(-4-9)^2 + (-2-6)^2}$

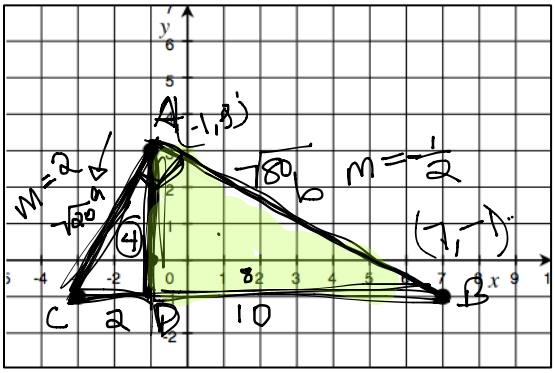
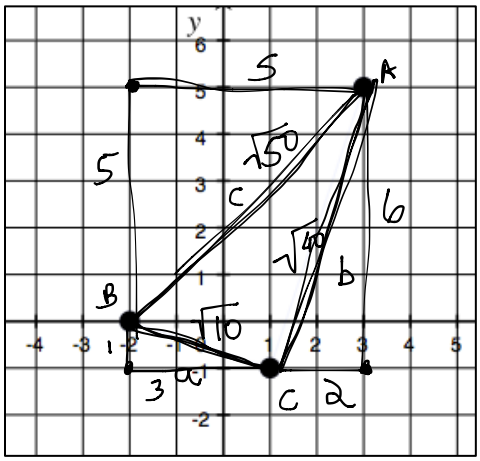
$\sqrt{(-13)^2 + (-8)^2}$

$\sqrt{169+64}$

$\sqrt{233}$

Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

Is the triangle formed by the 3 points a right triangle?	Is the triangle formed by the 3 points a right triangle?
	

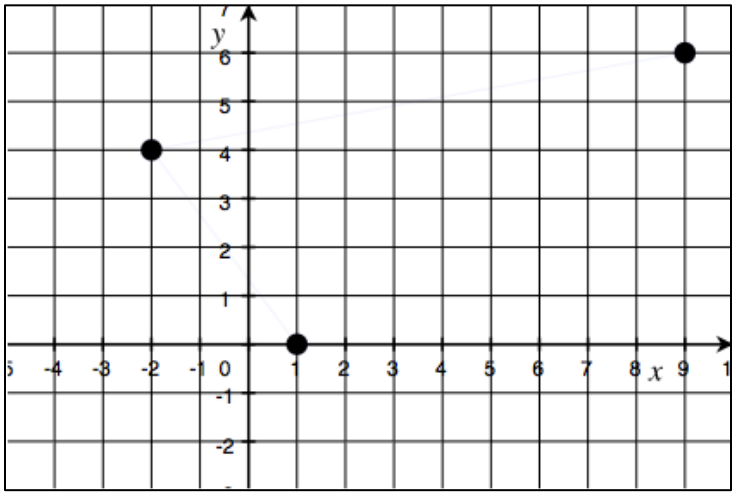
$(\sqrt{20})^2+(\sqrt{80})^2=10^2$

$20+80=100$

$\sqrt{10}+\sqrt{40}=\sqrt{50}$

Closure:

IS this a right triangle? How do you know?

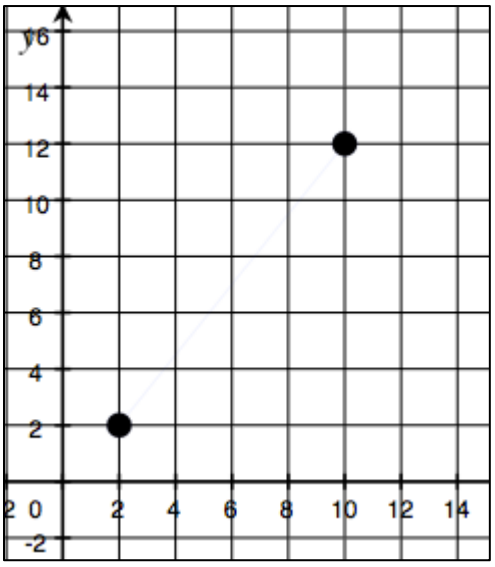


Name: _____ Math 7.2, Period _____

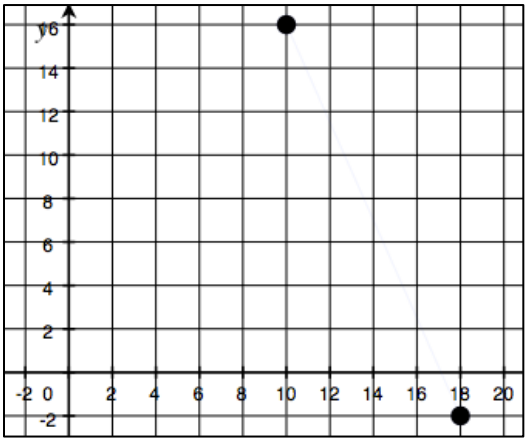
Mr. Rogove Date: _____

Independent Practice:

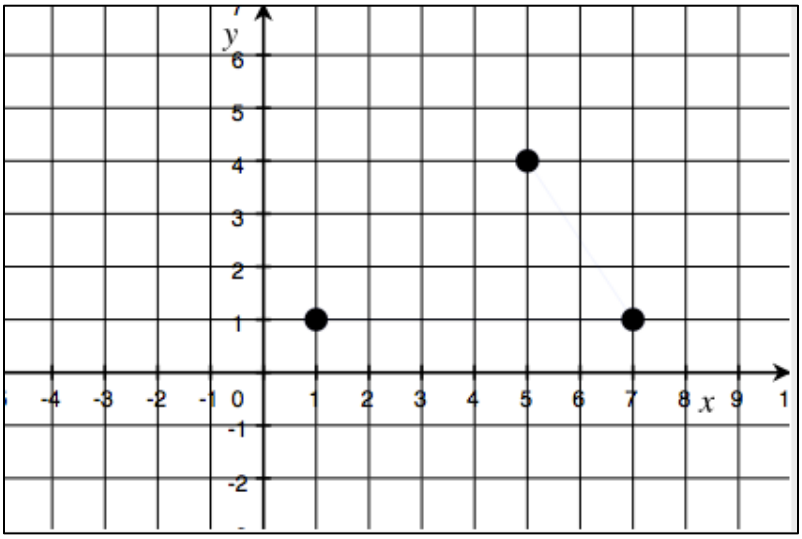
Find the Distance between the two points.



Find the distance between the two points.



Is this a right triangle? Why or why not?



Name: _____ Math 7.2, Period _____

Mr. Rogove Date: _____

NOTES: Lesson 17, Module 7 Grade 8