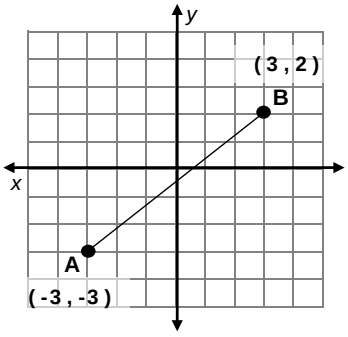
DISTANCE OF A LINE SEGMENT

ANSWERS

YOU CAN USE THE DISTANCE FORMULA OR THE PYTHAGOREAN THEOREM TO FIND THE DISTANCE OF A LINE SEGMENT. WHEN YOU USE THE DISTANCE FORMULA YOU NEED TO KNOW THE COORDINATES, BUT WHEN YOU USE THE PYTHAGOREAN THEOREM YOU PHYSICALLY COUNT THE LENGTH OF EACH LEG.



USING THE DISTANCE FORMULA

TO CALCULATE THE DISTANCE BETWEEN TWO POINTS YOU NEED TO FIND THE COORDINATES AND PUT THEM INTO THE FORMULA.

Distance Formula

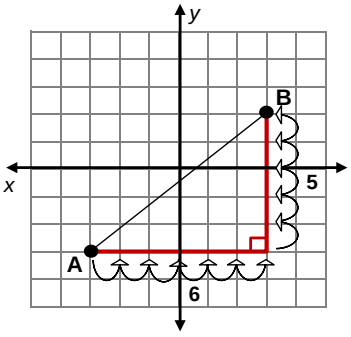
$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

	x_2	y_2	
A	(-3 ,	-3)	Place the coordinates on top of each other and subtract.
- ***B***	(3 ,	2)	
	-6 ,	-5	

$$\sqrt{(-6)^2 + (-5)^2}$$

$$\sqrt{36 + 25}$$

$$\sqrt{61} \approx 8$$



USING THE PYTHAGOREAN THEOREM

TO CALCULATE THE DISTANCE BETWEEN TWO POINTS YOU NEED TO CREATE A TRIANGLE AND COUNT HOW LONG EACH LEG IS. THIS WILL BE "a" AND "b" IN THE THEOREM.

Pythagorean Theorem

$$c = \sqrt{a^2 + b^2}$$

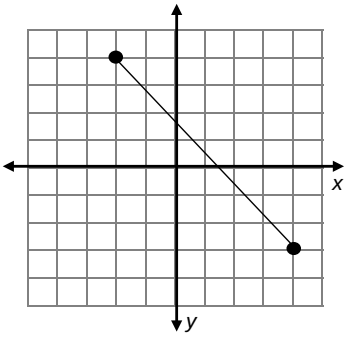
$$\sqrt{(6)^2 + (5)^2}$$

$$\sqrt{36 + 25}$$

$$\sqrt{61} \approx 8$$

Find the distance for each line segment. Round all answers to the nearest whole number.

1.



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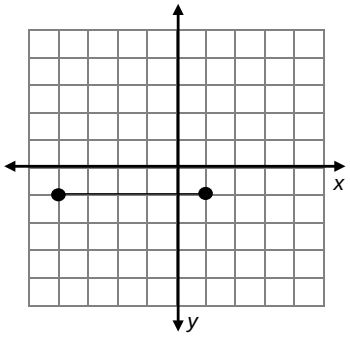

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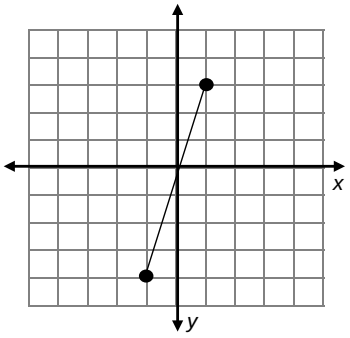

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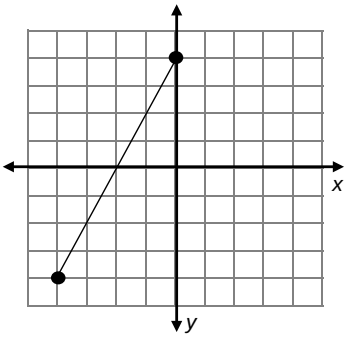

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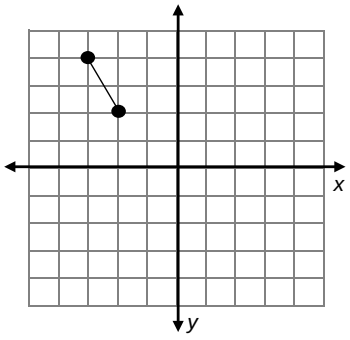

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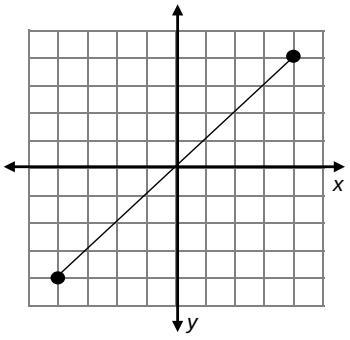

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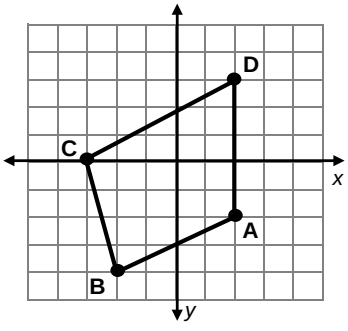
Use the figure to find the distance for the given line segments. Round all answers to the nearest whole number.



7. Distance $\overline{CD}$

6

8. Distance $\overline{BC}$

4

9. Distance $\overline{AD}$

5

Use the coordinates to find the distance for each line segment. Round all answers to the nearest whole number.

10. (-2 , 6) , (-5 , -4)

10

11. (8 , -4) , (0 , 3)

11

12. (14 , -5) , (1 , -5)

13

13. (-9 , 3) , (-8 , 2)

1