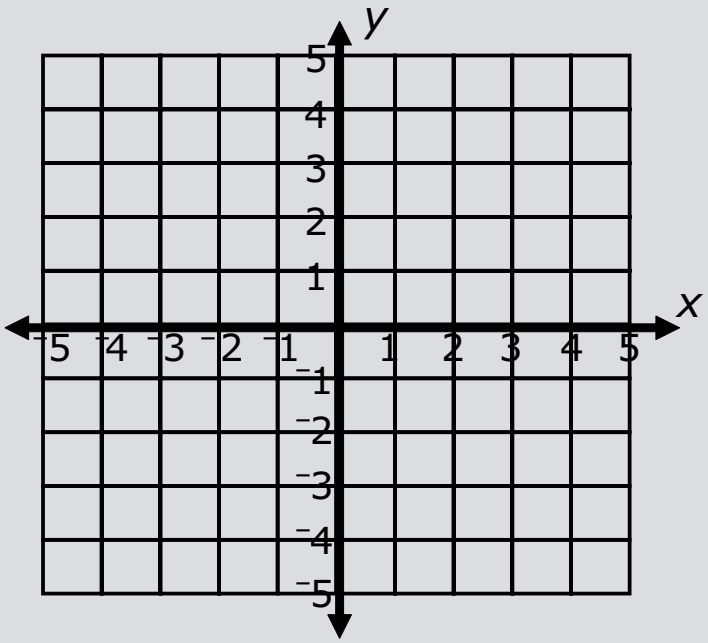
Warm–Up

Directions: Plot and label the following ordered pairs on the coordinate plane below.

A: $\left(\frac{1}{2}, 3.5\right)$	B: $\left(1, \frac{-3}{2}\right)$	C: $\left(-4.3, \frac{-5}{6}\right)$
D: $\left(-5, 0\right)$	E: $\left(0, \frac{4}{5}\right)$	F: $\left(-1\frac{3}{5}, 2\right)$



Directions: Complete the following SOLVE problem with your partner.

Laura is creating string art on the wall of her living room. She uses a coordinate plane to help plan her design. She currently has nails in the wall at the points (3.5, 1.4), (0.3, 1.4), (0.3, 4.6), and (3.5, 4.6). What shape does Laura create with the nails?

S Underline the question.

This problem is asking me to find _____
_____.

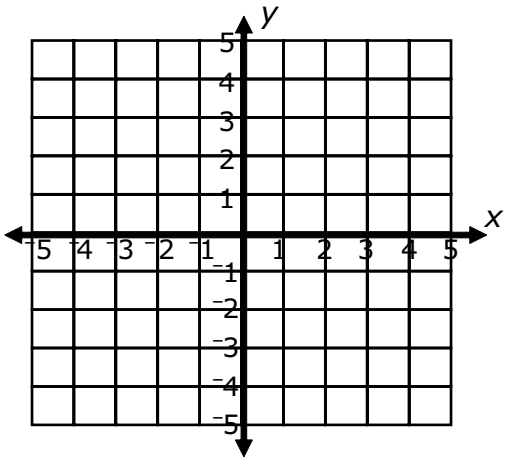
O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.

Carry out your plan.



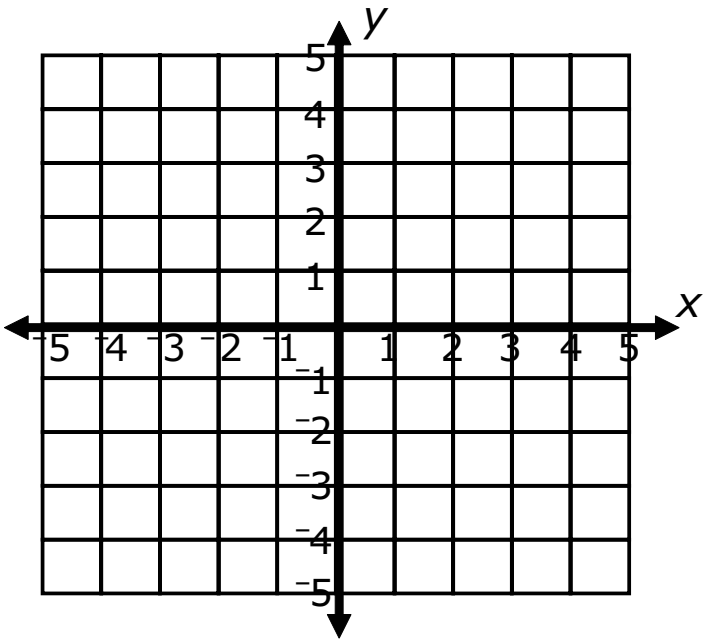
E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete this page with your teacher and partner.

Let's recreate the four points and the shape of the figure from the SOLVE problem on the previous page. Starting from the top left corner and moving clockwise, label the points *A* – *D*.



1. What do you notice about *ABCD*?

2. What is similar about the points?

Directions: Complete this page with your teacher and partner.

3. What do you notice about Points *A* and *B*?

4. How can we find the horizontal distance between Points *A* and *B*?

5. What is the horizontal distance between Points *A* and *B*? Justify your answer.

6. What is the horizontal distance between Points *C* and *D*? Justify your answer.

7. What do you notice about Points *A* and *D*?

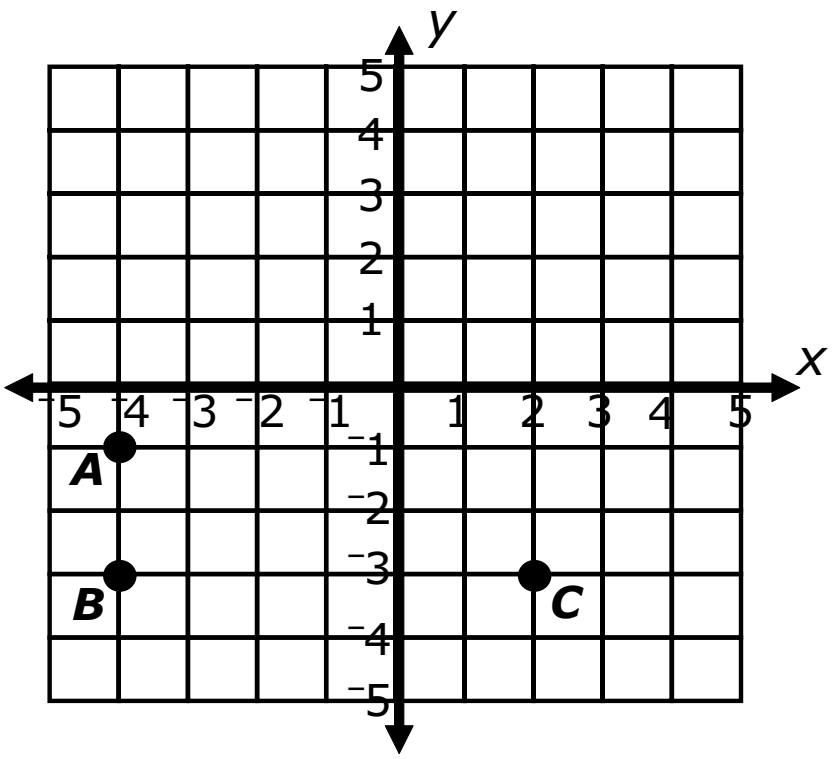
8. How can we find the vertical distance between Points *A* and *D*?

9. What is the vertical distance between Points *A* and *D*? Justify your answer.

10. What is the vertical distance between Points *B* and *C*? Justify your answer.

11. Being as specific as possible, what shape is *ABCD*? Justify your answer.

Directions: Complete this page with your teacher and partner.



Identify the ordered pairs of the three points plotted above. Continue to the next page to answer the questions about these points.

Point *A*	
Point *B*	
Point *C*	

Directions: Complete this page with your teacher and your partner.

<table>
<tr><th colspan="3">Point A to Point B</th></tr>
<tr><td colspan="3">1. What do you notice about Point A and Point B?

2. In which quadrant(s) are Points A and B located?</td></tr>
<tr><td>3. What is the distance from A to the x-axis?</td><td>4. What is the distance from B to the x-axis?</td><td>5. What is the distance from A to B?</td></tr>
<tr><td colspan="3">6. Does the distance between A and B relate to the distances of A and B to the x-axis? Explain your answer.</td></tr>
<tr><td colspan="3">7. What are we finding when we identify the distance from a point to an axis?</td></tr>
<tr><td colspan="3">8. Do the distances in Questions 3 and 4 relate to the numerical coordinates of Points A and B? Justify your answer.</td></tr>
<tr><td colspan="3">9. How does the distance from A to B relate to the answer to Question 8?</td></tr>
</table>

Directions: Complete this page with your teacher and your partner.

<table>
<tr><th colspan="3">Point B to Point C</th></tr>
<tr><td colspan="3">1. What do you notice about Point B and Point C?

2. In which quadrant(s) are Points B and C located?</td></tr>
<tr><td>3. What is the distance from B to the y-axis?</td><td>4. What is the distance from C to the x-axis?</td><td>5. What is the distance from B to C?</td></tr>
<tr><td colspan="3">6. Does the distance between B and C relate to the distances of B and C to the y-axis? Explain your answer.</td></tr>
<tr><td colspan="3">7. What are we finding when we identify the distance from a point to an axis?</td></tr>
<tr><td colspan="3">8. Do the distances in Questions 3 and 4 relate to the numerical coordinates of Points B and C? Justify your answer.</td></tr>
<tr><td colspan="3">9. How does the distance from B to C relate to the answer to Question 8?</td></tr>
<tr><td colspan="3">10. How can we find the distance between two points in the same quadrant?</td></tr>
<tr><td colspan="3">11. How can we find the distance between two points in different quadrants?</td></tr>
</table>

Directions: Complete the following SOLVE problem.

Rhonda is using a map to identify the distance she is from the book store. She is currently located at ($^{-}$3, $^{-}$4). She will drive up to the point ($^{-}$3, 2.5) and finish at (1.3, 2.5). Plot and label the locations. If each unit is equivalent to 1 mile, how many miles will Rhonda have to drive to the book store?

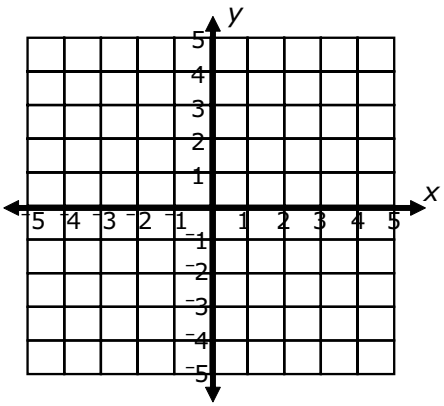
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the following SOLVE problem.

Laura continues to make string art in the shape of a quadrilateral. The three nails already in the wall are placed at (1, 1.5), $\left(4\frac{4}{5}, \frac{3}{2}\right)$, and (4.8, ⁻2.3). Where should Laura place the fourth nail in the wall to be sure all sides have the same length?

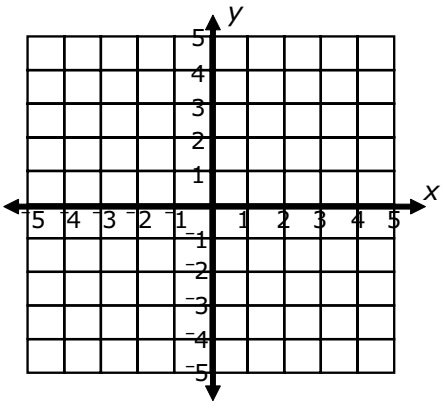
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the following SOLVE problem.

Christopher and Jonathan are meeting at a restaurant in town for a business lunch. Christopher is currently located at (-2.2, -1). Jonathan is working at (0.5, 4). They are meeting at the restaurant located at (0, 1). If they can only walk on the gridlines of the coordinate plane, without taking any shortcuts, who has the longer walk?

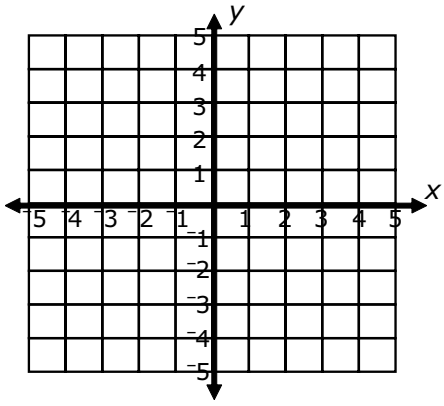
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the following SOLVE problem.

Joe is traveling from Pittsburgh to Philadelphia. The map shows Pittsburgh to be located at ($^-1$, 3.2) and Philadelphia to be located at $\left(2\frac{1}{10}, 3\frac{1}{5}\right)$. Each unit on the coordinate plane represents a distance of 100 miles. What is the distance from Pittsburgh to Philadelphia in miles?

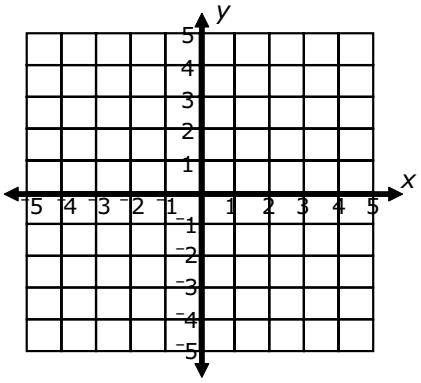
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the following SOLVE problem.

Jennifer is creating patterned paper on a computer program. The top left of the square is located at (2.6, 4.7). The bottom right corner of the square is located at (4.1, 3.2). What is the length of each of the sides of the square?

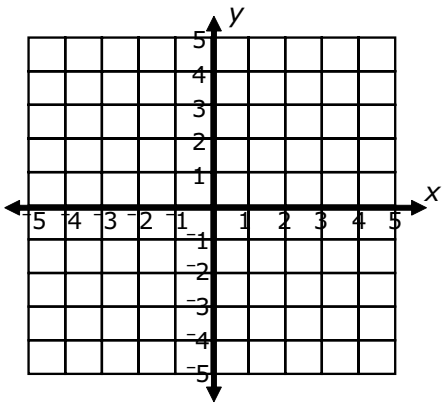
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the following SOLVE problem.

Sarah helped Laura with some of the string art on her wall. Sarah plotted three of the points using nails at the locations ($^{-}2.5$, 5), (4, 5), and $\left(^{-}2.5, \frac{-3}{2}\right)$. To create a rectangle, Sarah will place a nail in the wall for the fourth corner. What will be the length and the width of the rectangle once she places the final nail in the wall?

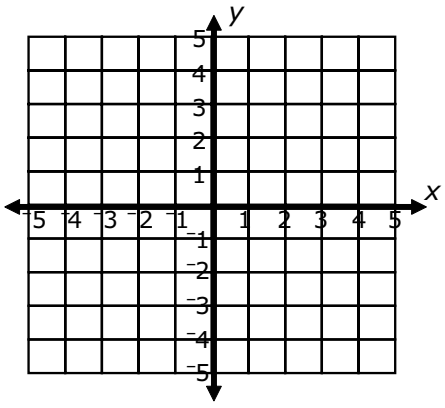
S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Write in words what your plan of action will be.

Choose an operation or operations.

V Estimate your answer.
Carry out your plan.

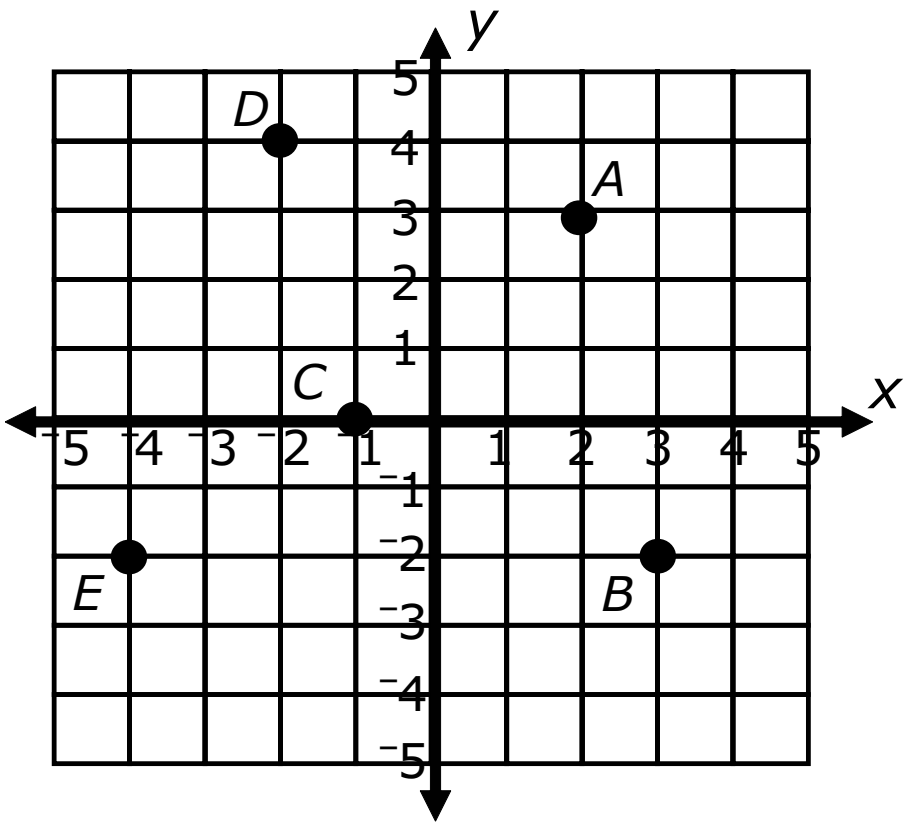


E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)
Write your answer in a complete sentence.

Directions: Complete the questions below.



POINT	LOCATION
Point *A*	Library
Point *B*	School
Point *C*	Store
Point *D*	Post Office
Point *E*	Bakery

If you may only travel using the gridlines, with no other shortcuts, find the distance between the locations in number of units.

Route	Distance	Route	Distance
Library to Bakery		Bakery to School	
Library to Post Office		Bakery to Store	
Library to Store		Post Office to School	
Library to School		Post Office to Store	
Bakery to Post Office		School to Store	

Homework

Name _____ **Date** _____

Directions: Complete the questions below.

Use the coordinate plane below to plot points. Find the distance between each pair of points using vertical and horizontal movement only.

Point A $\left(^{-}3.7, 3\frac{3}{5}\right)$ to Point B $(^{-}1, 0)$		Point B $(^{-}1, 0)$ to Point D $(^{-}4, ^{-}1)$	
Point A $\left(^{-}3.7, 3\frac{3}{5}\right)$ to Point C $\left(1.2, 2\frac{1}{5}\right)$		Point B $(^{-}1, 0)$ to Point E $(1, ^{-}4)$	
Point A $\left(^{-}3.7, 3\frac{3}{5}\right)$ to Point D $(^{-}4, ^{-}1)$		Point C $\left(1.2, 2\frac{1}{5}\right)$ to Point D $(^{-}4, ^{-}1)$	
Point A $\left(^{-}3.7, 3\frac{3}{5}\right)$ to Point E $(1, ^{-}4)$		Point C $\left(1.2, 2\frac{1}{5}\right)$ to Point E $(1, ^{-}4)$	
Point B $(^{-}1, 0)$ to Point C $\left(1.2, 2\frac{1}{5}\right)$		Point D $(^{-}4, ^{-}1)$ to Point E $(1, ^{-}4)$