

Distance in the Coordinate Plane

If the points lie in the same quadrant, subtract the absolute values of the coordinates.
 If the points lie in different quadrants, add the absolute values of the coordinates.

Find the distance between the pair of points.

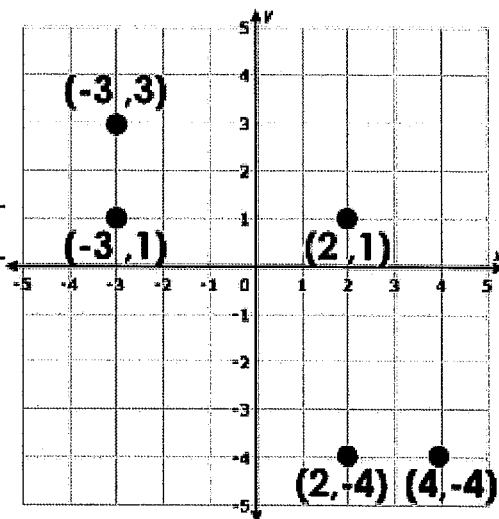
1. $(-3, 1)$ and $(2, 1)$

Different quadrants, so add the absolute values.

Horizontal distance from $(-3, 1)$ to y -axis: $|\underline{\quad}| = \underline{\quad}$

Horizontal distance from $(2, 1)$ to y -axis: $|\underline{\quad}| = \underline{\quad}$

Distance from $(-3, 1)$ to $(2, 1)$ is $\underline{\quad} + \underline{\quad} = \underline{\quad}$



2. $(-3, 3)$ and $(-3, 1)$

Same quadrant, so subtract the absolute values.

Vertical distance from $(-3, 3)$ to $(-3, 1)$:

$|\underline{\quad}| = \underline{\quad}$ and $|\underline{\quad}| = \underline{\quad}$ so $\underline{\quad} - \underline{\quad} = \underline{\quad}$

3. $(2, 1)$ and $(2, -4)$ _____ quadrant _____

4. $(2, -4)$ and $(4, -4)$ _____ quadrant _____

Plot and label the points on these grids, then find the distance between them.

5. A $(0, 5)$ and B $(0, -5)$ _____

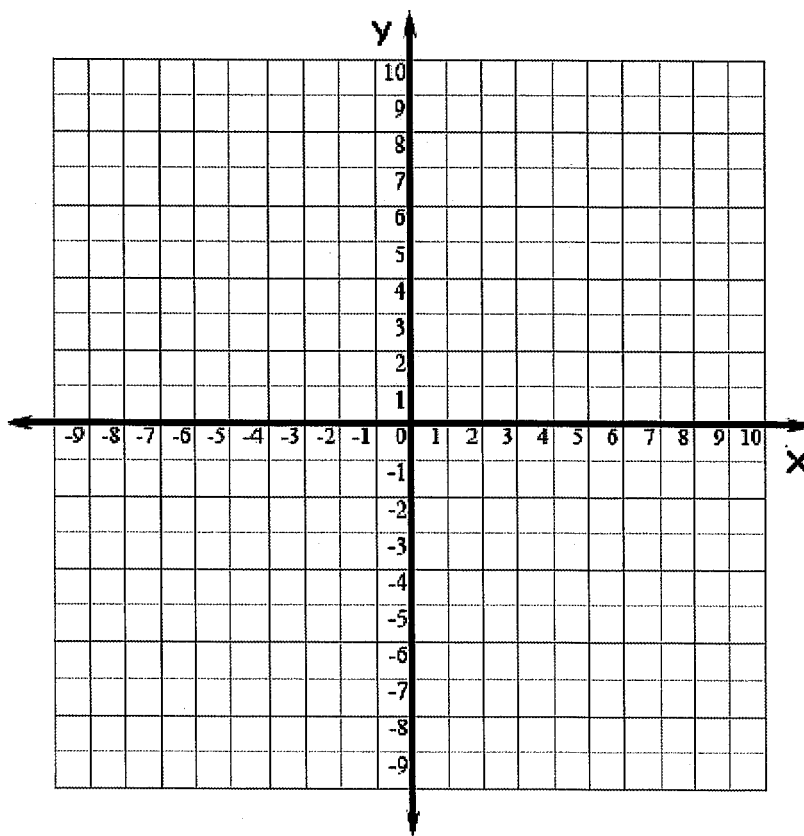
6. C $(1, 1)$ and D $(1, -3)$ _____

7. E $(-2, -5)$ and F $(-2, -1)$ _____

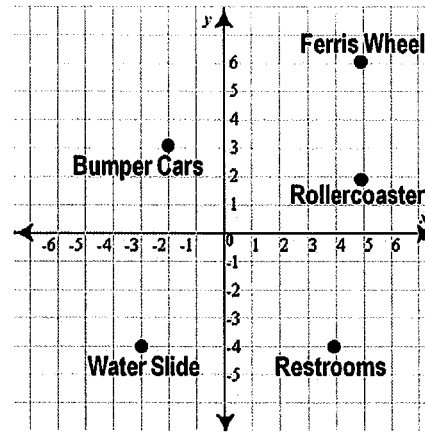
8. G $(-7, 3)$ and H $(5, 3)$ _____

9. I $(3, -6)$ and J $(3, -10)$ _____

10. K $(8, 0)$ and L $(8, -8)$ _____



The map shows the location of several areas in an amusement park. Each unit represents 1 kilometer.



How far is the Ferris wheel from the rollercoaster? _____

How far is the water slide from the restrooms? _____

Which of the following values could be the y -coordinate of the point $(10, \quad)$ that is 13 units from $(10, 6)$?

- A. 17 B. 3 C. -1 D. -7

What is the distance between the points $(4, -7)$ and $(-5, -7)$?

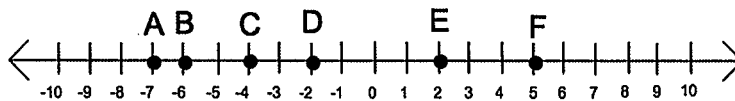
- A. 1 unit B. 3 units C. 7 units D. 9 units

Josie started at home at $(4, 5)$ and then went to the store at $(4, 2)$. She decided to then stop for gas at $(4, -3)$ and then to pick up her printed photos at $(4, -5)$. She then went home. What was Josie's total distance?

Two different points on the coordinate plane lie on the same vertical line. Do they have the same x -coordinate or the same y -coordinate?

Two different points on the coordinate plane lie on the same horizontal line. Do they have the same x -coordinate or the same y -coordinate?

Use the number line to find each measure.



- a. CF b. BD c. AE

Distance in Coordinate Plane

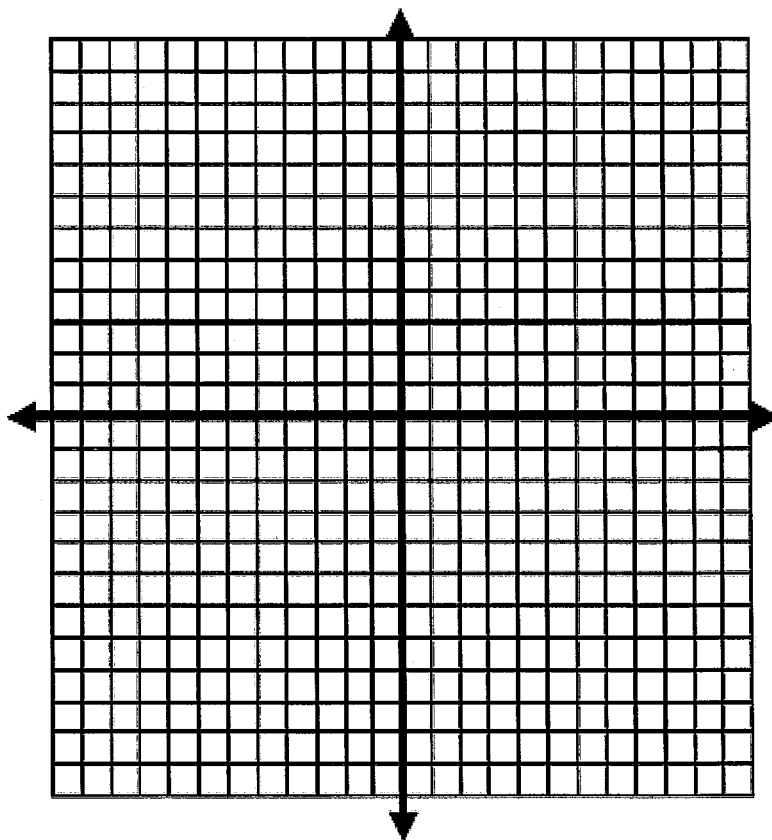
Use the graph to plot and label the coordinates and find the distance between the points.

1) $(4, 5)$ and $(4, -8)$

2) $(10, -7)$ and $(10, 3)$

3) $(-9, 6)$ and $(4, 6)$

4) $(-2, 5)$ and $(-3, 5)$



Find the distance between the points without using a graph. *Choose any 6 to do*

5) $(-2, 4)$ and $(3, 4)$

6) $(-3, 9)$ and $(-3, 13)$

7) $(8, -3)$ and $(8, -4)$

8) $(-7, -1)$ and $(-11, -1)$

9) $(8, -3)$ and $(13, -3)$

10) $(-4, 8)$ and $(-4, 11)$

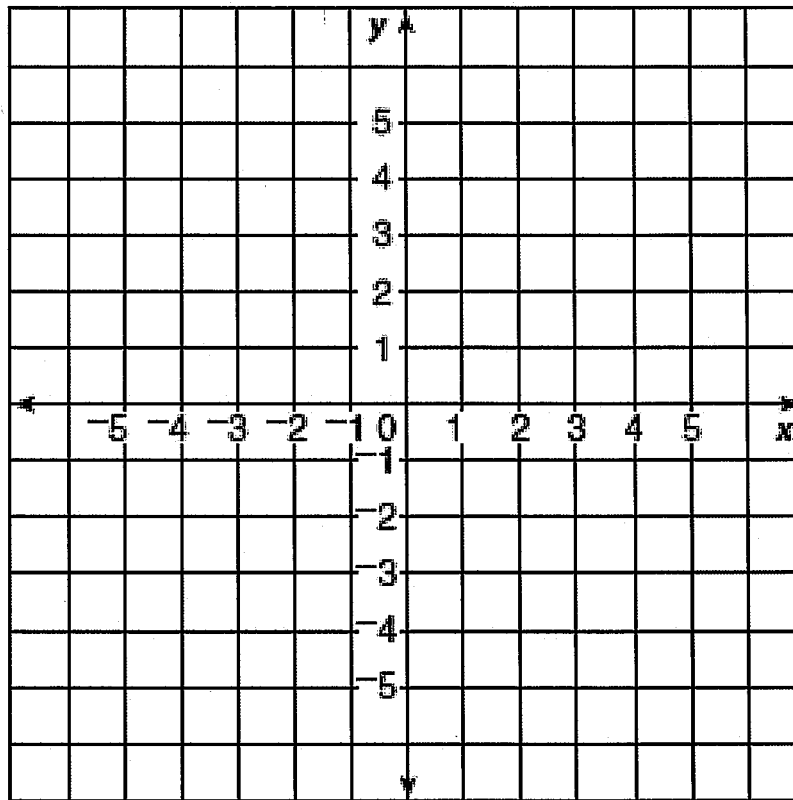
11) $(2, 8)$ and $(0, 8)$

12) $(-6, 6)$ and $(-6, 10)$

13) $(-1, -1)$ and $(-1, -2)$

14) $(3, 2)$ and $(0, 2)$

Use the graph to find the distance between the points. **You must do all**



15) A cat ran from $(0, 12)$ to $(0, -8)$.
How far did it run?

16) A duck swam from $(10, 6)$ to $(-3, 6)$.
How far did it swim?

17) A giraffe walked from $(6, -8)$ to $(6, 6)$
to $(-3, 6)$. How far did it walk?

18) A horse galloped from $(-3, 4)$ to
 $(-3, -9)$ and back to $(-3, 4)$. How far
did it gallop?

19) A rabbit hopped from $(-2, 3)$ to
 $(-2, -5)$. It stopped to eat some carrots.
Then it hopped to $(7, -5)$. It took a nap.
It hopped home to $(7, 0)$. How far did it
hop?

20) A leopard leaped from $(7, 0)$ to $(-4, 0)$.
Then it leaped to $(0, 0)$. How far did it
leap?