

Grade 6 · The Coordinate Plane · Worksheet

Common Core 6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8, 6.G.A.3 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

These 20 problems practice working in all four quadrants of the coordinate plane from Common Core 6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8, and 6.G.A.3. Early problems name quadrants, read points, and reflect points across the axes; middle problems find distances and draw polygons.

Problems 15 through 20 are multi-step problems about rectangles, maps, and mirror images. Label each point, and show how you used absolute value to find distances.

Grade 6 Common Core: 6.NS.C.6b · 6.NS.C.6c · 6.NS.C.8 · 6.G.A.3

Problem 1: Name the quadrant

Name the quadrant of each point. If a point is on an axis, name the axis.

- a. (3,5)
- b. (-2,4)
- c. (-6,-1)
- d. (7,-3)
- e. (0,-4)

Problem 2: On Which Axis

Tell whether each point lies on the x-axis, on the y-axis, or on neither axis.

- a. (0,6)
- b. (-3,0)
- c. (4,4)
- d. (0,-2)
- e. (5,0)

Problem 3: Signs of Coordinates

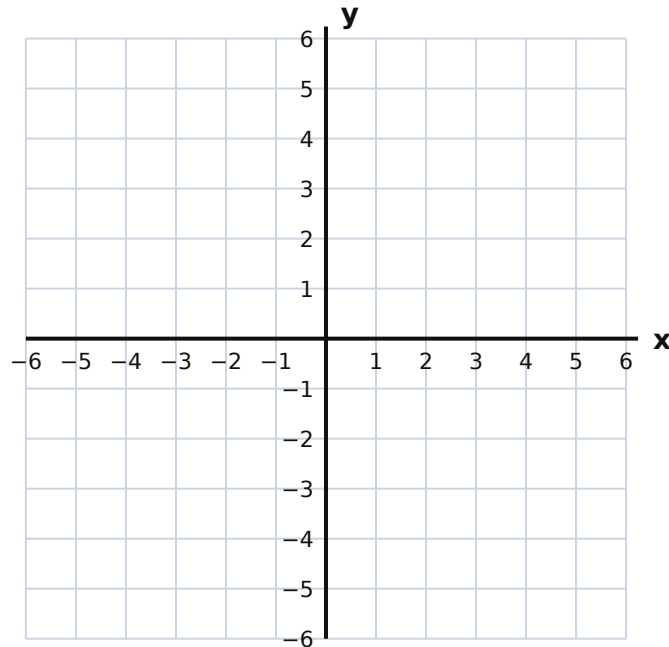
Name the quadrant that matches each description.

- a. The x-coordinate is negative and the y-coordinate is positive.
- b. The x-coordinate is positive and the y-coordinate is negative.

- c. Both coordinates are negative.
- d. The point $(-8, -9)$

Problem 4: Plot the points

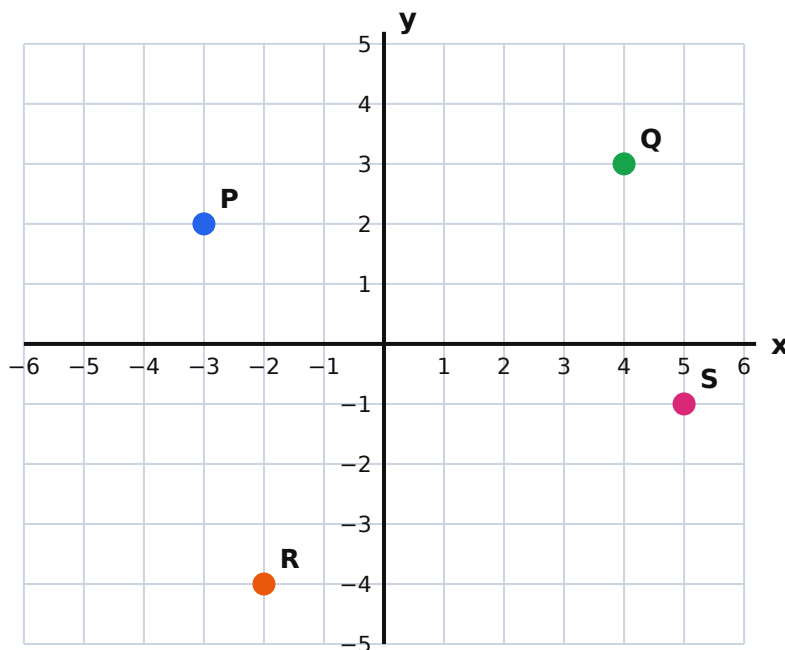
Plot and label these points on the coordinate plane: $A(2,3)$, $B(-4,1)$, $C(-3,-5)$, and $D(5,-2)$.



Plot the four points here.

Problem 5: Read ordered pairs

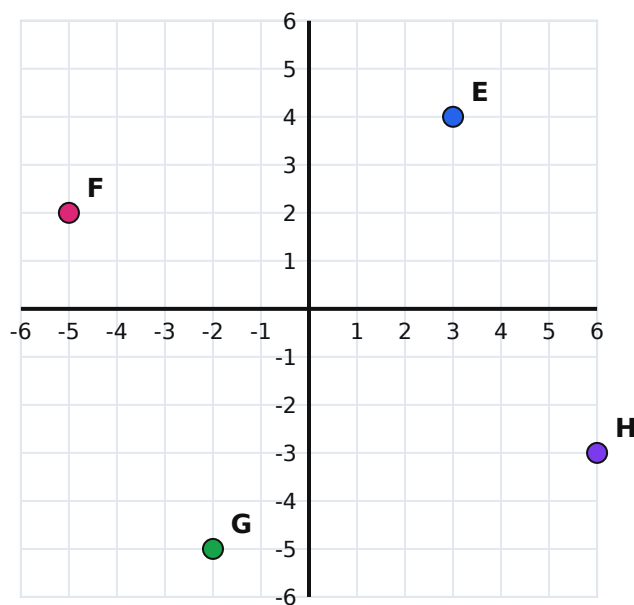
Write the ordered pair for each labeled point shown on the coordinate plane.



Points P, Q, R and S.

Problem 6: Reading Four Points

Write the ordered pair for each point on the coordinate plane, and name its quadrant or axis.

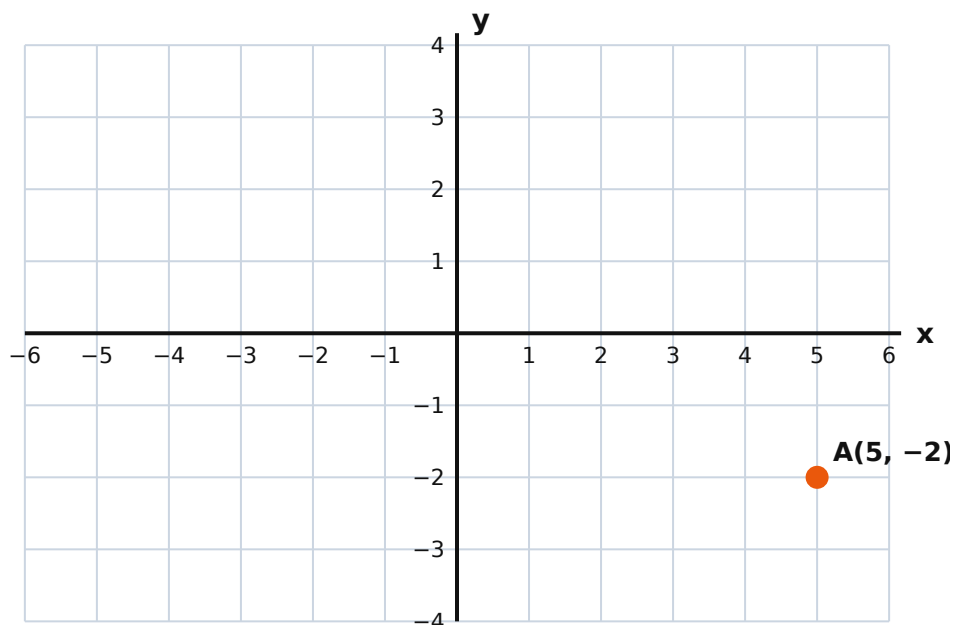


Points E, F, G, and H.

Problem 7: Reflect a point

The point $A(5, -2)$ is shown. Write the coordinates of its reflection across each line.

- The x-axis
- The y-axis
- The x-axis, then the y-axis



The point A.

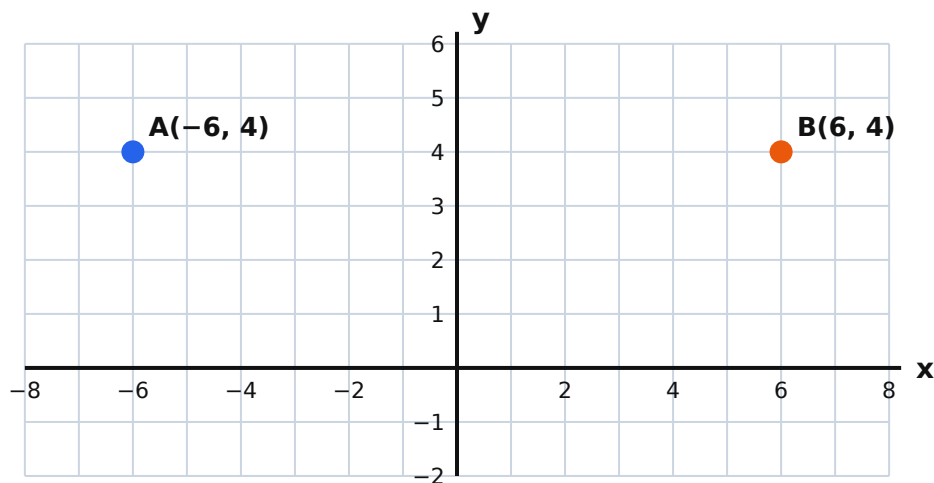
Problem 8: Reflect Three Points

Write the coordinates of the reflection of each point across the x-axis and across the y-axis.

- $K(3, -4)$
- $L(-5, 2)$
- $M(-1, -6)$

Problem 9: Points that mirror each other

Points $A(-6, 4)$ and $B(6, 4)$ are shown. Describe how the coordinates of A and B are related, name the axis that is the line of reflection, and find the distance from A to B.



Points A and B.

Problem 10: Which Axis Is the Mirror

Each pair of points is a reflection of one point over an axis or over both axes. Name the axis or axes of reflection.

- a. $(6, -3)$ and $(6, 3)$
- b. $(-2, 5)$ and $(2, 5)$
- c. $(-4, -1)$ and $(4, 1)$

Problem 11: Distance on a horizontal line

Find the distance between $(-7, 3)$ and $(2, 3)$.

Problem 12: Distance on a vertical line

Find each distance.

- a. $C(4, -8)$ and $D(4, -3)$
- b. $E(-2, 6)$ and $F(-2, -5)$

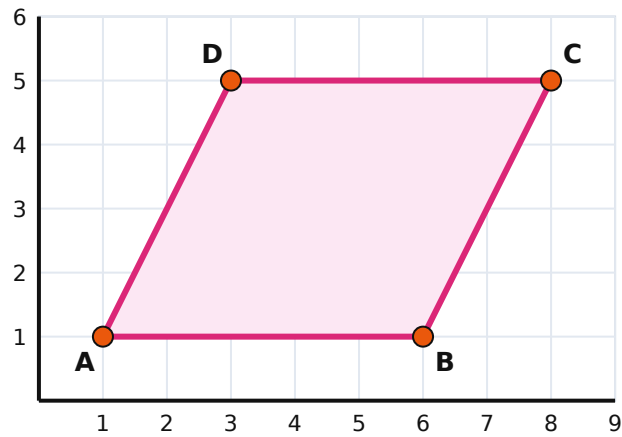
Problem 13: Distance with Absolute Value

Use absolute values to find the distance between each pair of points.

- a. $(-9, 4)$ and $(-9, -6)$
- b. $(-8, -2)$ and $(5, -2)$
- c. $(3.5, -2.5)$ and $(3.5, 6)$

Problem 14: Parallelogram on the Plane

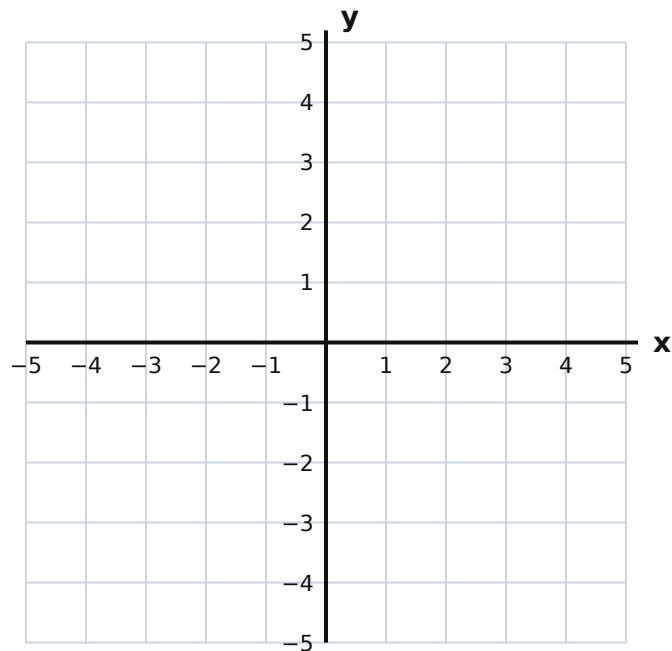
Parallelogram $ABCD$ has vertices $A(1,1)$, $B(6,1)$, $C(8,5)$, and $D(3,5)$. Find the length of base AB , the height of the parallelogram, and its area.



Parallelogram ABCD.

Problem 15: Draw a rectangle

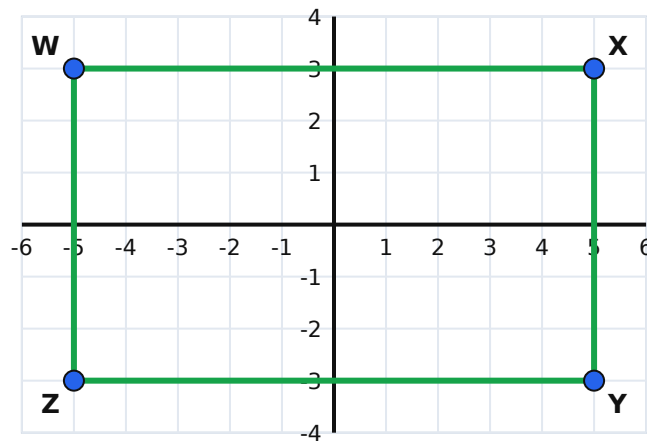
Plot the points $(-3,2)$, $(4,2)$, $(4,-3)$, and $(-3,-3)$. Connect them in order to form a rectangle. Find the length of each side and the perimeter.



Draw the rectangle here.

Problem 16: Soccer Field Map

On a town map, each unit is 10 yards. A soccer field has corners at $W(-5,3)$, $X(5,3)$, $Y(5,-3)$, and $Z(-5,-3)$. Find the length and width of the field in yards, then find its perimeter and area.



Each unit is 10 yards.

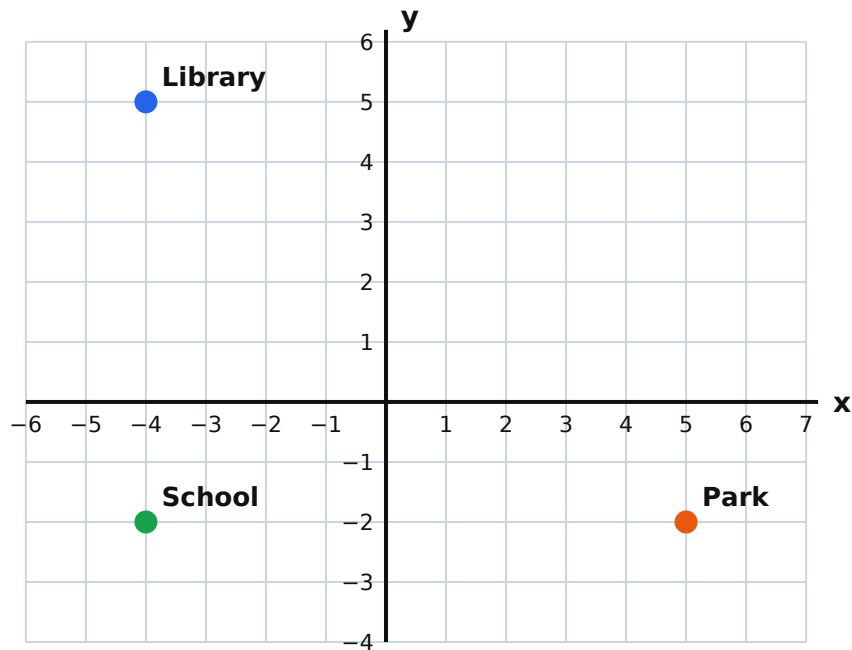
Problem 17: Scavenger Hunt Route

A camp map uses one unit for one block. Mei starts at the camp store at $(-3,-4)$. She walks to the flagpole at $(-3,5)$, then to the lake at $(6,5)$, then to the dock at $(6,-1)$.

- Find the length of each part of her walk.
- Find the total distance.
- Mei walks 3 blocks per minute. Find the time for the whole walk.
- Name the quadrant of the dock.

Problem 18: Walking route

On a town map, each unit is one city block. The library is at $(-4,5)$, the school is at $(-4,-2)$, and the park is at $(5,-2)$. Priya walks from the library to the school, and then to the park. Find the distance of each part and the total distance.

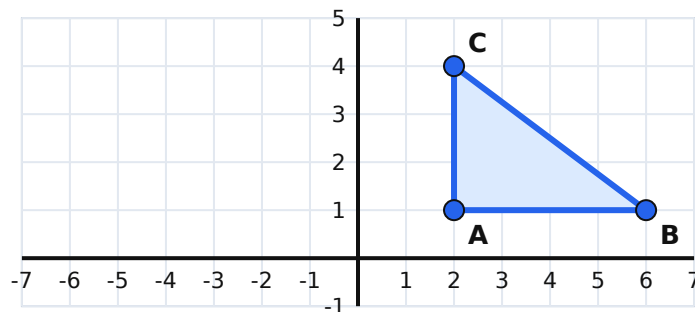


Each unit is one city block.

Problem 19: Mirror-Image Flower Beds

A park plans a triangular flower bed ABC with $A(2,1)$, $B(6,1)$, and $C(2,4)$. Each unit is 1 yard. The designer wants a matching bed on the other side of a path that runs along the y-axis, so the second bed is the reflection of the first across the y-axis.

- Write the coordinates of A' , B' , and C' .
- Find the distance from A to A' and from B to B' .
- Find the area of one bed and the total area of both beds.



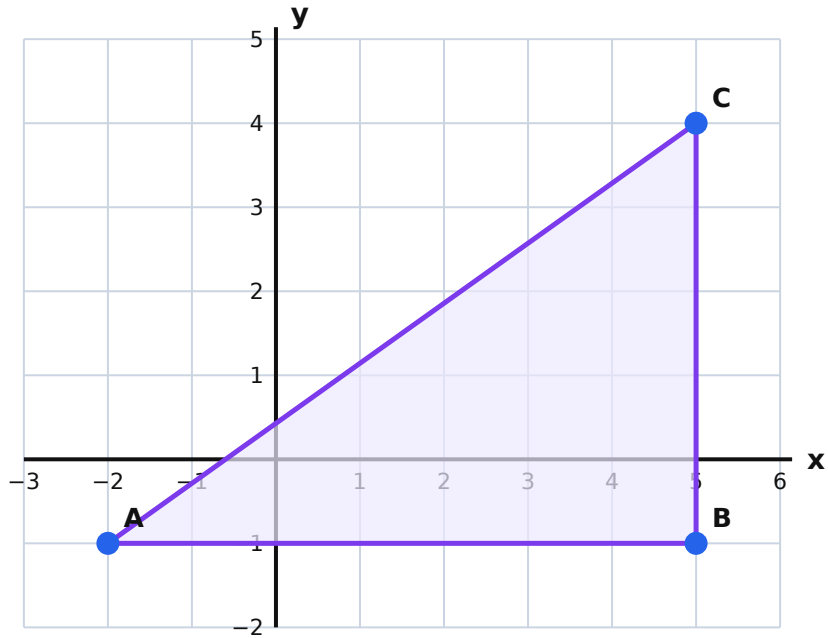
The first bed.

Problem 20: Triangle and its reflection

Triangle ABC has vertices $A(-2,-1)$, $B(5,-1)$, and $C(5,4)$.

- Find the lengths of sides AB and BC .

- b. Reflect the triangle across the x-axis. Write the coordinates of A' , B' , and C' .
- c. Find the lengths of $A'B'$ and $B'C'$, and compare them with part a.



Triangle ABC.