LESSON MAKER PRO

Coordinate Distance Quest

Find horizontal and vertical distances with coordinates.

GRADE 6 · NY-6.NS.8

NY-6.NS.8 "Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate."

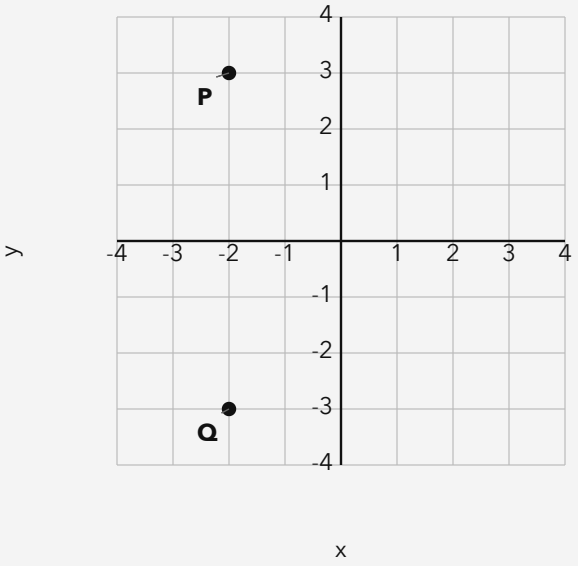
NAME _____ DATE _____

DISTANCE ON A GRID

Points with the same x-coordinate are directly above and below each other, so find the difference between their y-coordinates. Points with the same y-coordinate are side by side, so find the difference between their x-coordinates. Use absolute value so distance is always positive.

WORKED EXAMPLE

Use the grid. How far apart are P and Q?



1. P and Q share x-coordinate -2, so find the vertical distance.
2. Use absolute value: |3 - (-3)| = |6| = 6.
3. The distance is 6 units.

Answer: 6 units

PRACTICE 4 problems

1 Find the distance between A(7, 8) and B(7, -5).

ANSWER _____

2 Find the distance between C(-8, 4) and D(9, 4).

ANSWER _____

3 Point E(-7, 0) and point F(-7, 9) are on a grid. What is EF?

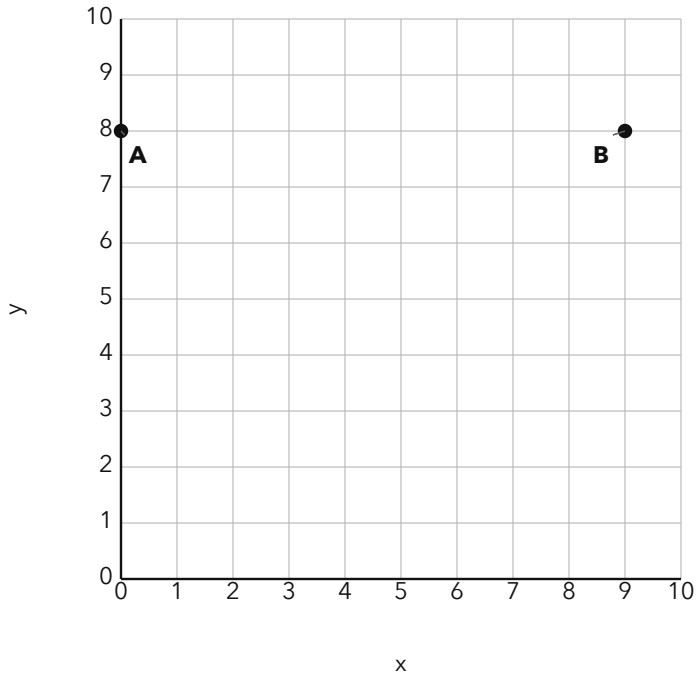
ANSWER _____

4 Find the distance between K(-9, 1) and L(5, 1).

ANSWER _____

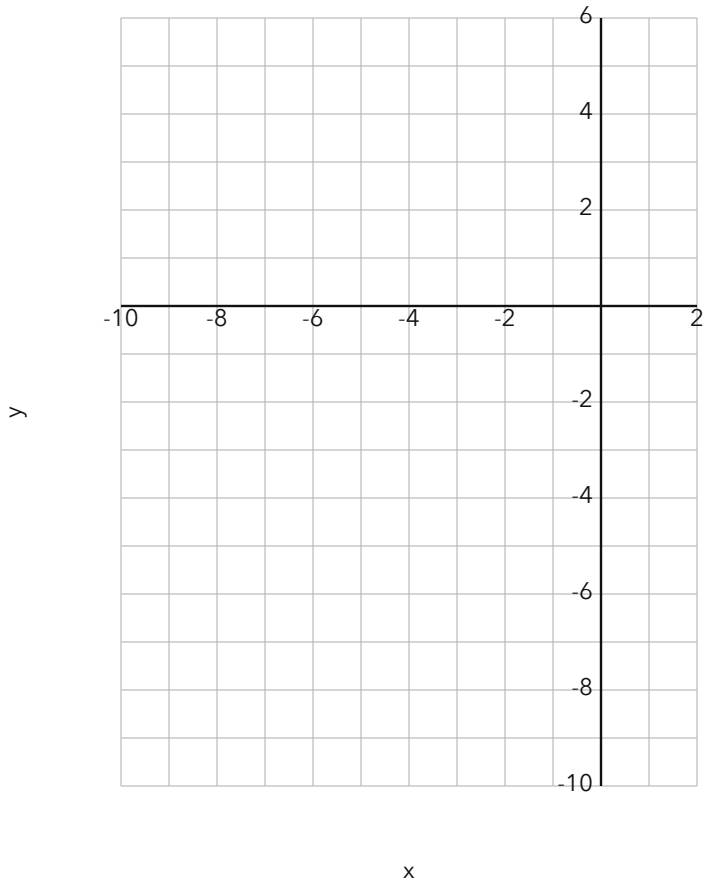
APPLY IT Show your work

1 The grid shows game supplies A and B. Find their distance.



ANSWER _____

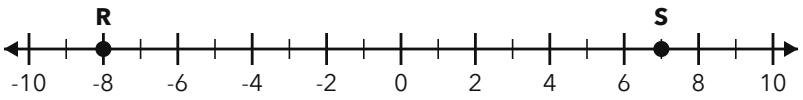
2 At a skate park, the water station W is at (-9,-8) and the ramp R is at (-9,5). On the blank coordinate grid, plot and label both locations. Draw their straight connecting path. Find the path length using coordinates and absolute value; explain how the graph confirms it.



ANSWER _____

CHALLENGE One step up

Points R(4, -8) and S(4, 7) have y-coordinates marked on the number line. Explain why RS is 15 units long.



WORK SPACE AND ANSWER

ANSWER KEY

Coordinate Distance Quest

GRADE 6 · NY-6.NS.8

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the distance between A(7, 8) and B(7, -5).	**13 units**
2	Find the distance between C(-8, 4) and D(9, 4).	**17 units**
3	Point E(-7, 0) and point F(-7, 9) are on a grid. What is EF?	**9 units**
4	Find the distance between K(-9, 1) and L(5, 1).	**14 units**

PART 2 · APPLY IT

1. **9 units** The supplies share y-coordinate 8, so subtract the x-coordinates. |9 - 0| = 9.
2. **13 units** Check actual W(-9,-8), R(-9,5) and the vertical segment connecting them. Both have x=-9, so |5-(-8)|=13 units; the graph shows 8 units to y=0 and 5 more to y=5.

CHALLENGE

R and S share x-coordinate 4, so the distance is vertical. |7 - (-8)| = 15, so RS is 15 units long.

Accept equivalent absolute-value calculations and answers labeled in units. For the challenge, students should state that matching x-coordinates mean a vertical distance. Apply 2 requires the actual labeled graph and connecting segment, not only a numerical answer.

Apply 2: W(-9,-8) to R(-9,5), vertical distance 13 units.

