

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 _____

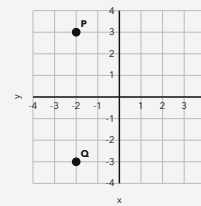
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DISTANCE ON A GRID

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?

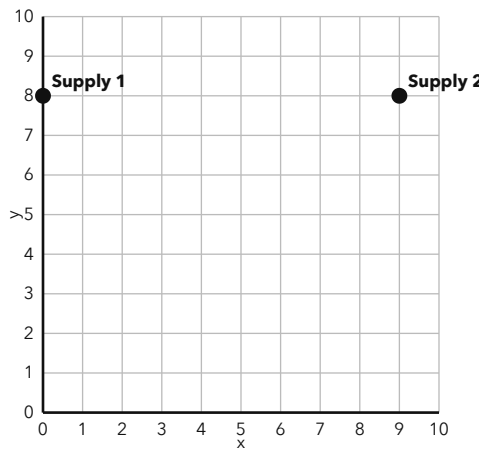
ANSWER _____

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

ANSWER _____

APPLY IT Show your work

- 1 Two game supplies are shown on the grid. How far apart are they?



ANSWER _____

- 2 At a skate park, the water station is at $(-9, -8)$ and the ramp is at $(-9, 5)$. A straight path connects them. How long is the path?

WORK SPACE

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

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

- 9 units** The supplies share y-coordinate 8, so subtract the x-coordinates. $|9 - 0| = 9$.
- 13 units** The locations share x-coordinate -9, so find the vertical distance. $|5 - (-8)| = 13$.

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.