LESSON MAKER PRO

Coordinate Quest

Plot points and measure straight-line grid distances.

GRADE 6 · 6.PAR.8.3

6.PAR.8.3 "Solve problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same x-coordinate or the same y-coordinate."

NAME _____ DATE _____

FIND THE DISTANCE

Use the signs of the coordinates to locate a point in one of the four quadrants. If two points have the same x-coordinate, subtract their y-coordinates and use absolute value for the vertical distance. If they have the same y-coordinate, subtract their x-coordinates and use absolute value for the horizontal distance.

WORKED EXAMPLE

Find the distance between M(11, -8) and N(11, 3).

1. The points have the same x-coordinate, so the distance is vertical.
2. Subtract the y-coordinates: 3 - (-8) = 11.
3. Use absolute value: |11| = 11.

Answer: 11 units

PRACTICE 6 problems

1 Plot A(7, 10). In which quadrant is A?

ANSWER _____

2 Plot B(-5, 12). In which quadrant is B?

ANSWER _____

3 Plot C(-12, -7). In which quadrant is C?

ANSWER _____

4 Plot D(10, -1). In which quadrant is D?

ANSWER _____

5 Points E(1, 5) and F(1, -10) are graphed. Use absolute value to find the distance between them.

ANSWER _____

6 Points G(-7, 12) and H(5, 12) are graphed. Use absolute value to find the distance between them.

ANSWER _____

APPLY IT Show your work

1 On a video game map, a player is at (10, 7) and a supply crate is at (10, -5). Plot both points. How many grid units must the player travel straight up or down to reach the crate?

WORK SPACE

ANSWER _____

2 On a school festival map, the snack stand is at (-10, -7) and the photo booth is at (5, -7). Plot both points. How many grid units apart are the two locations?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A route goes from P(-12, 10) to Q(-12, -5) and then to R(7, -5). How far is the whole route? Explain how the shared coordinates help you find each part of the distance.

_____

_____

ANSWER KEY

Coordinate Quest

GRADE 6 · 6.PAR.8.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Plot A(7, 10). In which quadrant is A?	**Quadrant I**
2	Plot B(-5, 12). In which quadrant is B?	**Quadrant II**
3	Plot C(-12, -7). In which quadrant is C?	**Quadrant III**
4	Plot D(10, -1). In which quadrant is D?	**Quadrant IV**
5	Points E(1, 5) and F(1, -10) are graphed. Use absolute value to find the distance between them.	**15 units**
6	Points G(-7, 12) and H(5, 12) are graphed. Use absolute value to find the distance between them.	**12 units**

PART 2 · APPLY IT

1. **12 units** The points have the same x-coordinate, so find the vertical distance. |7 - (-5)| = 12.
2. **15 units** The points have the same y-coordinate, so find the horizontal distance. |-10 - 5| = 15.

CHALLENGE

PQ = |-5 - 10| = 15 and QR = |7 - (-12)| = 19. The whole route is 34 units because the first part is vertical and the second part is horizontal.

Accept equivalent absolute-value subtraction expressions that give the correct positive distance. For quadrant items, accept Roman numerals or quadrant names.