

Coordinate Quest

Locate rational numbers on lines and grids.

GRADE 6 • 6.NS.C.6c

CCSS.Math.Content.6.NS.C.6c "Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane."

NAME _____

DATE _____

READ THE AXES

On a horizontal number line or the x-axis, values increase to the right. On a vertical number line or the y-axis, values increase upward. In an ordered pair (x, y), move left or right for x first, then down or up for y.

WORKED EXAMPLE

Position M(-11/6, 9/4) on a coordinate plane.

1. Start at the origin, (0, 0).
2. Move 11/6 units left.
3. Move 9/4 units up.
4. Mark point M.

Answer: M is at (-11/6, 9/4) in Quadrant II.

PRACTICE 6 problems

- 1** On a horizontal number line, point A is $\frac{3}{5}$ unit to the right of 0. What is its coordinate?

ANSWER _____

- 2** On a vertical number line, point B is $\frac{7}{3}$ units below 0. What is its coordinate?

ANSWER _____

- 3** Point C is at $(-\frac{8}{5}, \frac{2}{3})$. In which quadrant is point C?

ANSWER _____

- 4** Which ordered pair is $\frac{5}{2}$ units left and $\frac{7}{2}$ units up from the origin?

ANSWER _____

- 5** List these values from left to right on a horizontal number line: $-\frac{1}{3}$, 0, $\frac{5}{8}$, $-\frac{7}{8}$.

ANSWER _____

- 6** Point D is at $(\frac{3}{2}, -\frac{5}{3})$. In which quadrant is point D?

ANSWER _____

APPLY IT Show your work

- 1** A school garden map uses a coordinate grid. The water station is $\frac{7}{5}$ units west of the origin and $1\frac{1}{5}$ units north of the origin. What are the coordinates of the water station?

WORK SPACE

ANSWER _____

- 2** In a video game, a character starts at $(\frac{1}{3}, -\frac{7}{5})$. The character moves $\frac{5}{3}$ units right and $1\frac{2}{5}$ units up. What is the character's final location?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Points $R(-\frac{3}{4}, \frac{7}{6})$, $S(-\frac{3}{4}, -\frac{2}{5})$, and $T(\frac{1}{6}, -\frac{2}{5})$ are on a coordinate plane. Which points are leftmost, and which points lie on the same horizontal line? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	On a horizontal number line, point A is $\frac{3}{5}$ unit to the right of 0. What is its coordinate?	$\frac{3}{5}$
2	On a vertical number line, point B is $\frac{7}{3}$ units below 0. What is its coordinate?	$-\frac{7}{3}$
3	Point C is at $(-\frac{8}{5}, \frac{2}{3})$. In which quadrant is point C?	Quadrant II
4	Which ordered pair is $\frac{5}{2}$ units left and $\frac{7}{2}$ units up from the origin?	$(-\frac{5}{2}, \frac{7}{2})$
5	List these values from left to right on a horizontal number line: $-\frac{1}{3}$, 0, $\frac{5}{8}$, $-\frac{7}{8}$.	$-\frac{7}{8}, -\frac{1}{3}, 0, \frac{5}{8}$
6	Point D is at $(\frac{3}{2}, -\frac{5}{3})$. In which quadrant is point D?	Quadrant IV

PART 2 • APPLY IT

1. **$(-\frac{7}{5}, \frac{11}{5})$** West means the x-coordinate is negative, so $x = -\frac{7}{5}$. North means the y-coordinate is positive, so $y = \frac{11}{5}$.
2. **$(2, 1)$** Add the horizontal movement: $\frac{1}{3} + \frac{5}{3} = 2$. Add the vertical movement: $-\frac{7}{5} + \frac{12}{5} = 1$.

CHALLENGE

R and S are tied for leftmost because both have x-coordinate $-\frac{3}{4}$. S and T lie on the same horizontal line because both have y-coordinate $-\frac{2}{5}$.

Accept equivalent fraction forms and mixed numbers when they represent the same value. For ordered pairs, require the x-coordinate first and the y-coordinate second.