

# Plot It Right

*Place rational numbers on lines and coordinate planes.*

**GRADE 6 • 6.PAR.8.1**

**6.PAR.8.1** "Locate and position rational numbers on a horizontal or vertical number line; find and position pairs of integers and other rational numbers on a coordinate plane."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## The big idea

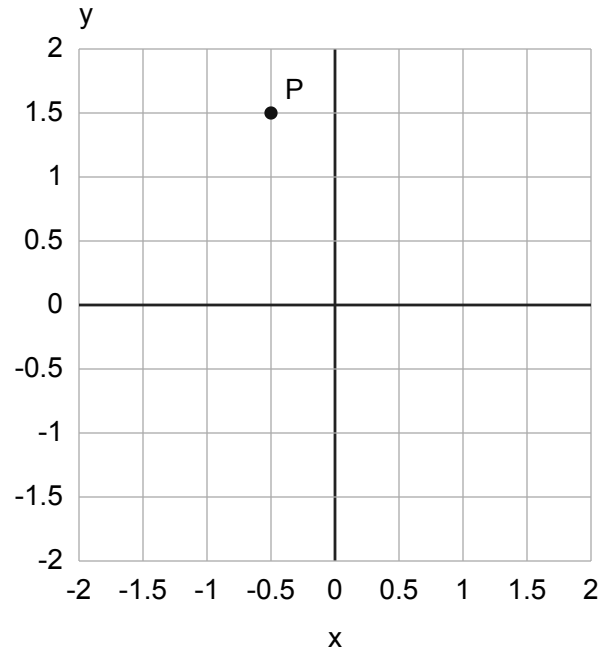
Number lines increase rightward or upward. For  $(x, y)$ , move horizontally for  $x$ , then vertically for  $y$ . Line intervals are  $\frac{1}{4}$ ; coordinate grid intervals are 0.5.

## Worked example

Locate  $P(-0.5, 1.5)$ .

Move 0.5 unit left from the origin. Move 1.5 units up and label the intersection  $P$ .

**$P$  lies in Quadrant II.**



Plot and label all requested points. Use the ruled space for calculations and explanations.

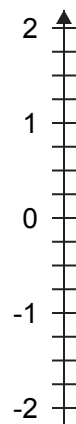
## 1. Practice

On the vertical line, plot  $P = -\frac{3}{4}$  and  $Q = 1\frac{1}{4}$ . Which is higher? Explain.

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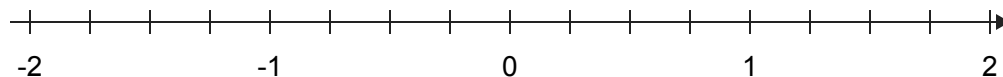
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Each small interval:  $\frac{1}{4}$

**2. Practice**

On the horizontal line, plot and label  $A = -1 \frac{1}{2}$ ,  $B = -\frac{1}{4}$ , and  $C = \frac{3}{4}$ . Then list A, B, C from least to greatest.



Each small interval:  $\frac{1}{4}$

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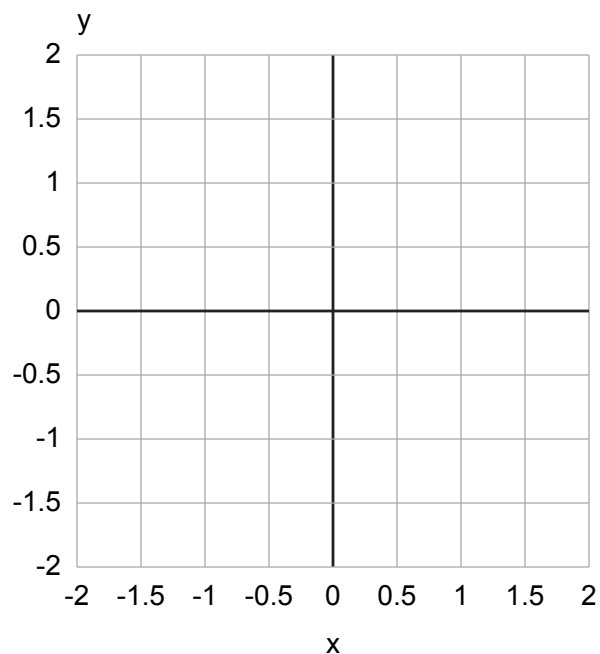
**3. Practice**

Plot  $A(-1.5, 1)$ ,  $B(1, 1.5)$ ,  $C(-1, -1.5)$ , and  $D(1.5, -1)$ .  
Name the quadrant of each point.

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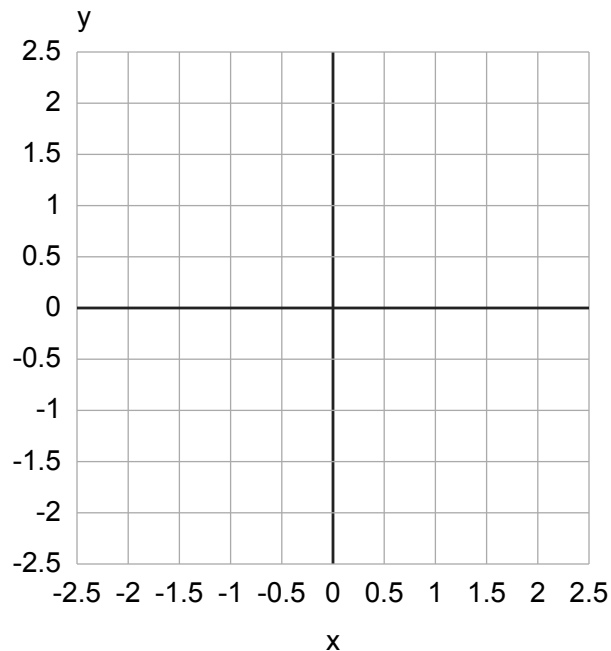
**4. Practice**

Plot  $E(0, -1.5)$  and  $F(2, 0)$ . Name the axis on which each lies and explain the role of its zero coordinate.

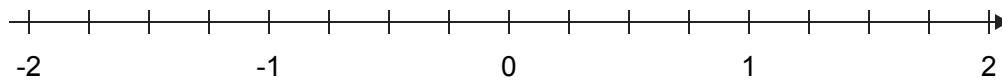
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**5. Apply**

A weather sensor reads  $-1.25$  degrees C at dawn and  $0.5$  degrees C at noon. Plot D for dawn and N for noon. Which reading is greater, and how can the line show that?



Each small interval:  $\frac{1}{4}$

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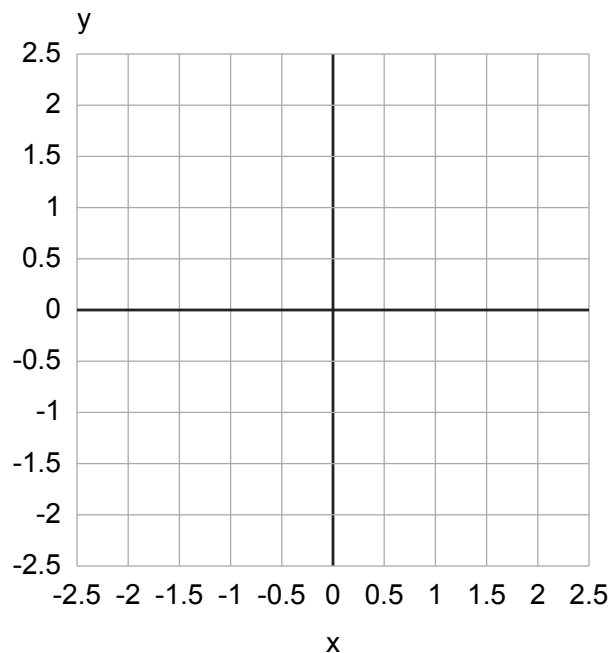
**6. Apply**

A robot starts at the origin. It moves 1.5 meters left and 2 meters up. On the map, 1 unit = 1 meter. Plot its final position R and write its ordered pair.

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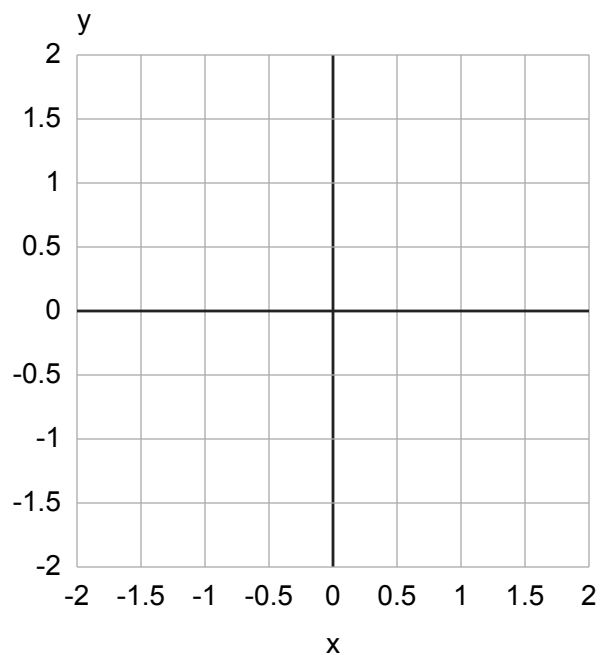
**7. Challenge**

Plot  $Q(-1, 1.5)$ . Point R has the same x-coordinate and is 3 units below Q. Plot R and write both ordered pairs. Explain which coordinate changed.

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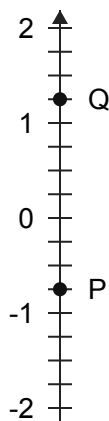
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Check actual plotted positions and labels, not just written coordinates. Number-line endpoints and integers are labeled; every small interval is  $\frac{1}{4}$ . Coordinate grid intervals are 0.5.

**Task 1**

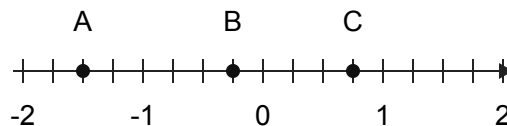
Q is higher. Values increase upward;  $1.25 > -0.75$ .



Each small interval:  $\frac{1}{4}$

**Task 2**

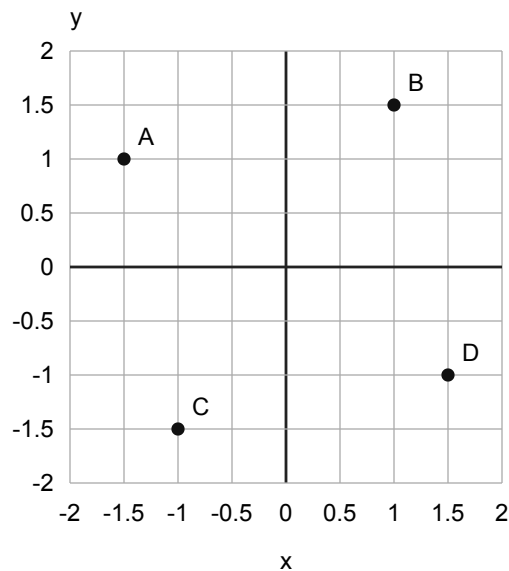
$A = -1.5$ ,  $B = -0.25$ ,  $C = 0.75$ ;  $A < B < C$ .



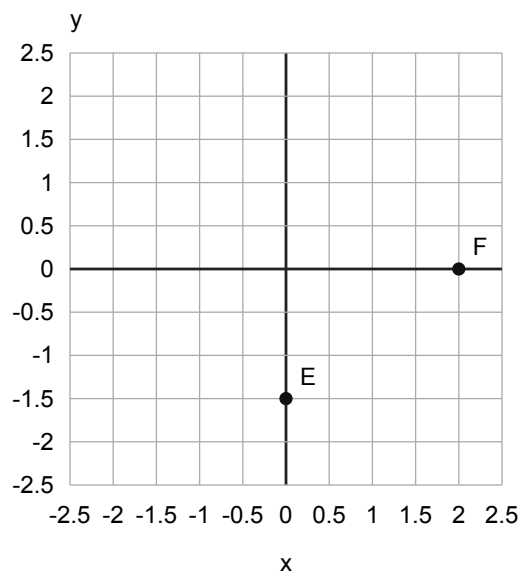
Each small interval:  $\frac{1}{4}$

**Task 3**

A: II; B: I; C: III; D: IV.

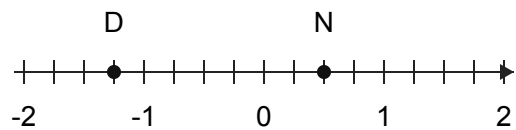
**Task 4**

E lies on the y-axis because  $x = 0$ . F lies on the x-axis because  $y = 0$ .



### Task 5

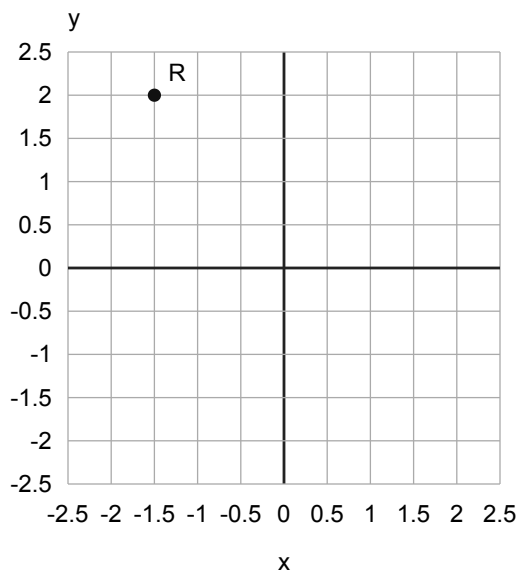
$D = -1.25$ ;  $N = 0.5$ . Noon is greater because  $N$  is to the right of  $D$ . The noon reading lies to the right of zero; the dawn reading lies to the left.



Each small interval:  $1/4$

### Task 6

$R(-1.5, 2)$ . Left gives a negative  $x$ -value; up gives a positive  $y$ -value. Use the signed horizontal and vertical movements as the coordinates.



### Task 7

$Q(-1, 1.5)$ ,  $R(-1, -1.5)$ . Only  $y$  changes:  $1.5 - 3 = -1.5$ .

