The Coordinate Plane

The coordinate plane: Mistakes and missing information

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Start at the origin. In (x, y), move horizontally by x and vertically by y. Quadrant signs: I $(+,+)$, II $(-,+)$, III $(-,-)$, IV $(+,-)$. If either coordinate is zero, the point is on an axis.

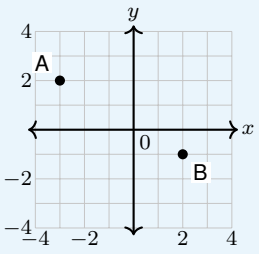
Worked example

Plot A$(-3, 2)$ and B$(2, -1)$.

1. For A, start at the origin. Horizontally go 3 left; vertically go 2 up. That gives $(-3, 2)$.

2. For B, start at the origin. Horizontally go 2 right; vertically go 1 down. That gives $(2, -1)$.

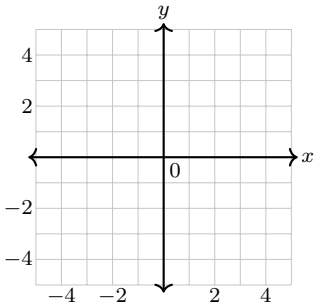
Answer: A$(-3, 2)$; B$(2, -1)$.



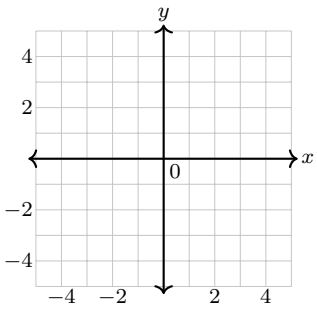
Practice Problems

Show your thinking.

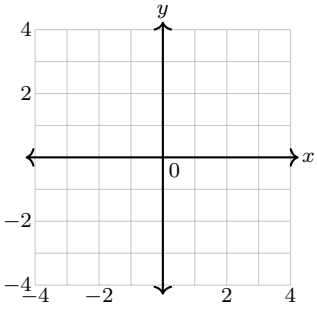
1. To plot $(2, 4)$ a student moves 4 right and 2 up. Plot the corrected point.



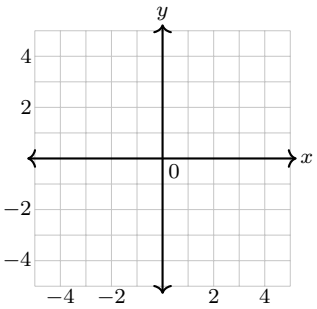
2. Plot B, 4 steps left and 1 step up from the origin; write the ordered pair.



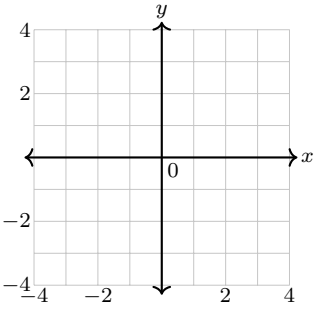
3. A student places $(0, -3)$ on the horizontal axis. Repair it.



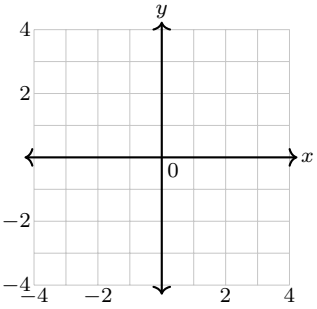
4. A point has $x = -2$ and is 4 below the horizontal axis. Find and plot it.



5. A student calls $(3, -2)$ quadrant II. Plot it and name the correct quadrant.



6. Plot F$(-1, 3)$ and the reversed pair G$(3, -1)$. Do the locations coincide?



Answer Key

1. A$(2, 4)$.
2. B$(-4, 1)$.
3. C$(0, -3)$.
4. D$(-2, -4)$.
5. E$(3, -2)$. Quadrant IV.
6. F$(-1, 3)$; G$(3, -1)$. The points differ.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The first number is the horizontal displacement. The student swapped the coordinates and would reach $(4, 2)$.

2. For A, start at the origin. Horizontally go 2 right; vertically go 4 up. That gives $(2, 4)$.

3. Check A: signed horizontal coordinate 2 comes first, then signed vertical coordinate 4.

Problem 2

1. For B, start at the origin. Horizontally go 4 left; vertically go 1 up. That gives $(-4, 1)$.

2. Check B: signed horizontal coordinate -4 comes first, then signed vertical coordinate 1.

Problem 3

1. For C, start at the origin. Horizontally stay at $x = 0$; vertically go 3 down. That gives $(0, -3)$.

2. Check C: signed horizontal coordinate 0 comes first, then signed vertical coordinate -3.

3. Since $x = 0$, the point lies on the vertical axis, not the horizontal axis.

Problem 4

1. For D, start at the origin. Horizontally go 2 left; vertically go 4 down. That gives $(-2, -4)$.

2. Check D: signed horizontal coordinate -2 comes first, then signed vertical coordinate -4.

Problem 5

1. For E, start at the origin. Horizontally go 3 right; vertically go 2 down. That gives $(3, -2)$.

2. Check E: signed horizontal coordinate 3 comes first, then signed vertical coordinate -2.

3. $3 > 0$ and $-2 < 0$, so the signs are $(+, -)$: quadrant IV.

Problem 6

1. For F, start at the origin. Horizontally go 1 left; vertically go 3 up. That gives $(-1, 3)$.

2. For G, start at the origin. Horizontally go 3 right; vertically go 1 down. That gives $(3, -1)$.

3. Horizontal coordinates differ by $3 - (-1) = 4$, so the locations cannot coincide.

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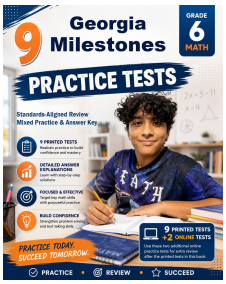

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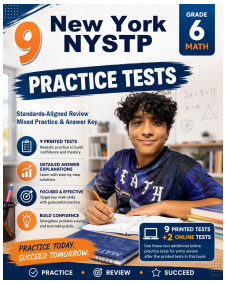

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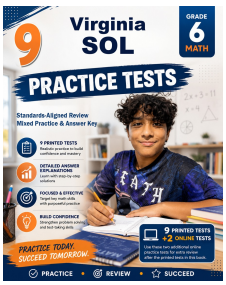

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