The Coordinate Plane

The coordinate plane: Applications and decisions

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.

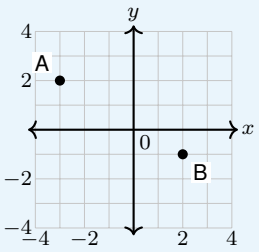
Worked example

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 $(2, -1)$.

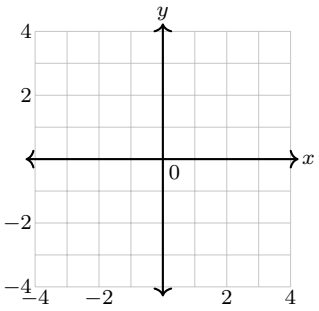
Answer: A$(-3, 2)$; B$(2, -1)$.



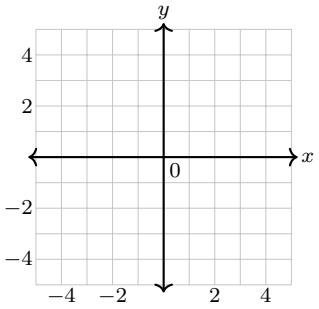
Practice Problems

Show your thinking.

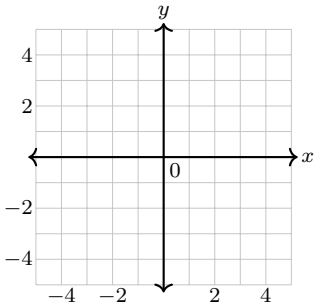
1. A library is $(3, -1)$ and a museum $(-2, 2)$, in blocks. Plot both landmarks. Each grid step is one block.



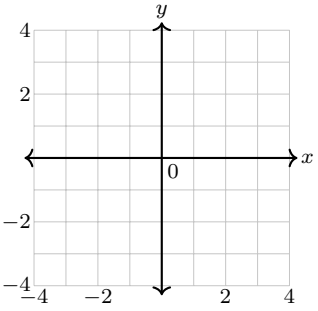
2. On a north-up map, plot a trail marker T 4 km west and 1 km south of the origin. Each grid step is one kilometer.



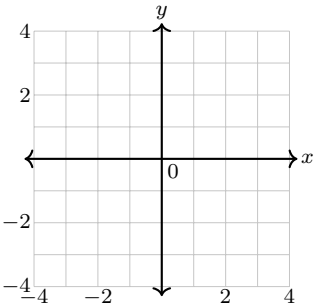
3. On a north-up map, plot station S 3 blocks north and well W 4 blocks east of the origin. Each grid step is one block.



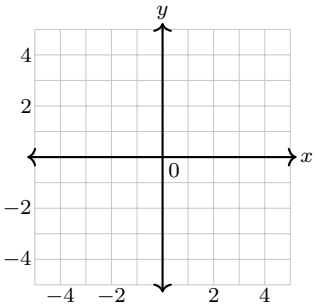
4. A robot goes 2 units east and 3 north from the origin. Plot its ending point.



5. Cave C is 3 km west and 2 km south of the origin. Correct and replot the marked location $(3, 2)$ on the north-up map. Each grid step is one kilometer.



6. Plot G in quadrant IV, 4 units from the y-axis and 3 from the x-axis. Give its coordinates.



Answer Key

1. L$(3, -1)$; M$(-2, 2)$ (in blocks).
2. T$(-4, -1)$ (in kilometers).
3. S$(0, 3)$; W$(4, 0)$ (in blocks).
4. R$(2, 3)$.
5. C$(-3, -2)$ (in kilometers).
6. G$(4, -3)$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

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

2. For M, start at the origin. Horizontally go 2 left; vertically go 2 up. That gives $(-2, 2)$ (in blocks).

Problem 2

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

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

Problem 3

1. For S, start at the origin. Horizontally stay at $x = 0$; vertically go 3 up. That gives $(0, 3)$ (in blocks).

2. For W, start at the origin. Horizontally go 4 right; vertically stay at $y = 0$. That gives $(4, 0)$ (in blocks).

Problem 4

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

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

Problem 5

1. For C, start at the origin. Horizontally go 3 left; vertically go 2 down. That gives $(-3, -2)$ (in kilometers).

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

Problem 6

1. Quadrant IV has $x > 0$ and $y < 0$, so the given distances are $x = 4$ and $y = -3$.

2. For G, start at the origin. Horizontally go 4 right; vertically go 3 down. That gives $(4, -3)$.

3. Check G: signed horizontal coordinate 4 comes first, then signed vertical coordinate -3.

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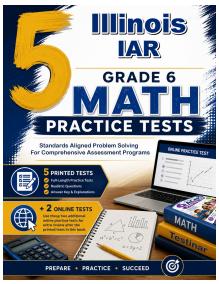

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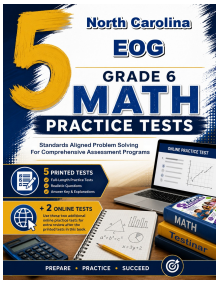

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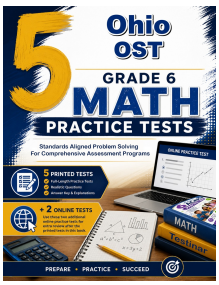

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