Plot Two Points, Draw the Line, and Compute Slope

Complete worked example / separate answer key

Plot the points (1, 2) and (4, 8), draw the line through them, mark rise and run, and compute the slope.

Answer: Plot (1, 2): move 1 right and 2 up from the origin. Plot (4, 8): move 4 right and 8 up. Draw a straight line through both points. From (1, 2) to (4, 8), the rise is 8 - 2 = 6 and the run is 4 - 1 = 3. Slope m = 6/3 = 2. The line rises from left to right, matching the positive slope.

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Original tasks 1, 2, 3, 4 / complete keys

Task 1

Plot (2, 3) and (5, 9), draw the line, mark rise and run, and compute the slope.

Answer: Slope = 2.

Reason: Rise = 9 - 3 = 6; run = 5 - 2 = 3; m = 6/3 = 2. The line rises from left to right.

Check: Recompute using the points in reverse order: (3-9)/(2-5) = (-6)/(-3) = 2. Confirm the drawn line rises from left to right.

Task 2

Plot (-1, 4) and (3, -4), draw the line, mark rise and run, and compute the slope.

Answer: Slope = -2.

Reason: Rise = -4 - 4 = -8; run = 3 - (-1) = 4; m = -8/4 = -2. The line falls from left to right.

Check: Reverse the order: (4-(-4))/(-1-3) = 8/(-4) = -2. Confirm the drawn line falls from left to right.

Task 3

Plot (0, 1) and (4, 1), draw the line, mark rise and run, and compute the slope.

Answer: Slope = 0.

Reason: Rise = 1 - 1 = 0; run = 4 - 0 = 4; m = 0/4 = 0. The line is horizontal.

Check: Any two points on a horizontal line have equal y-values, so the rise is zero. Confirm the drawn line is horizontal.

Task 4

Plot (3, -2) and (3, 5), draw the line, mark rise and run, and compute the slope.

Answer: Slope is undefined.

Reason: Rise = 5 - (-2) = 7; run = 3 - 3 = 0. Division by zero is undefined, so the line is vertical.

Check: Any two points on a vertical line have equal x-values, so the run is zero. Confirm the drawn line is vertical and that no numerical slope can be assigned.

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Task 1, Task 2, Task 3, Task 4 / Answer Key - Check Methods

Brief check notes per task.

Task 1 check: reverse order gives (3-9)/(2-5) = (-6)/(-3) = 2; drawn line rises left to right.

Task 2 check: reverse order gives (4-(-4))/(-1-3) = 8/(-4) = -2; drawn line falls left to right.

Task 3 check: any two points on a horizontal line have equal y-values, so rise is zero; drawn line is horizontal.

Task 4 check: any two points on a vertical line have equal x-values, so run is zero; drawn line is vertical and no numerical slope can be assigned.

Plot Two Points, Draw the Line, and Compute Slope

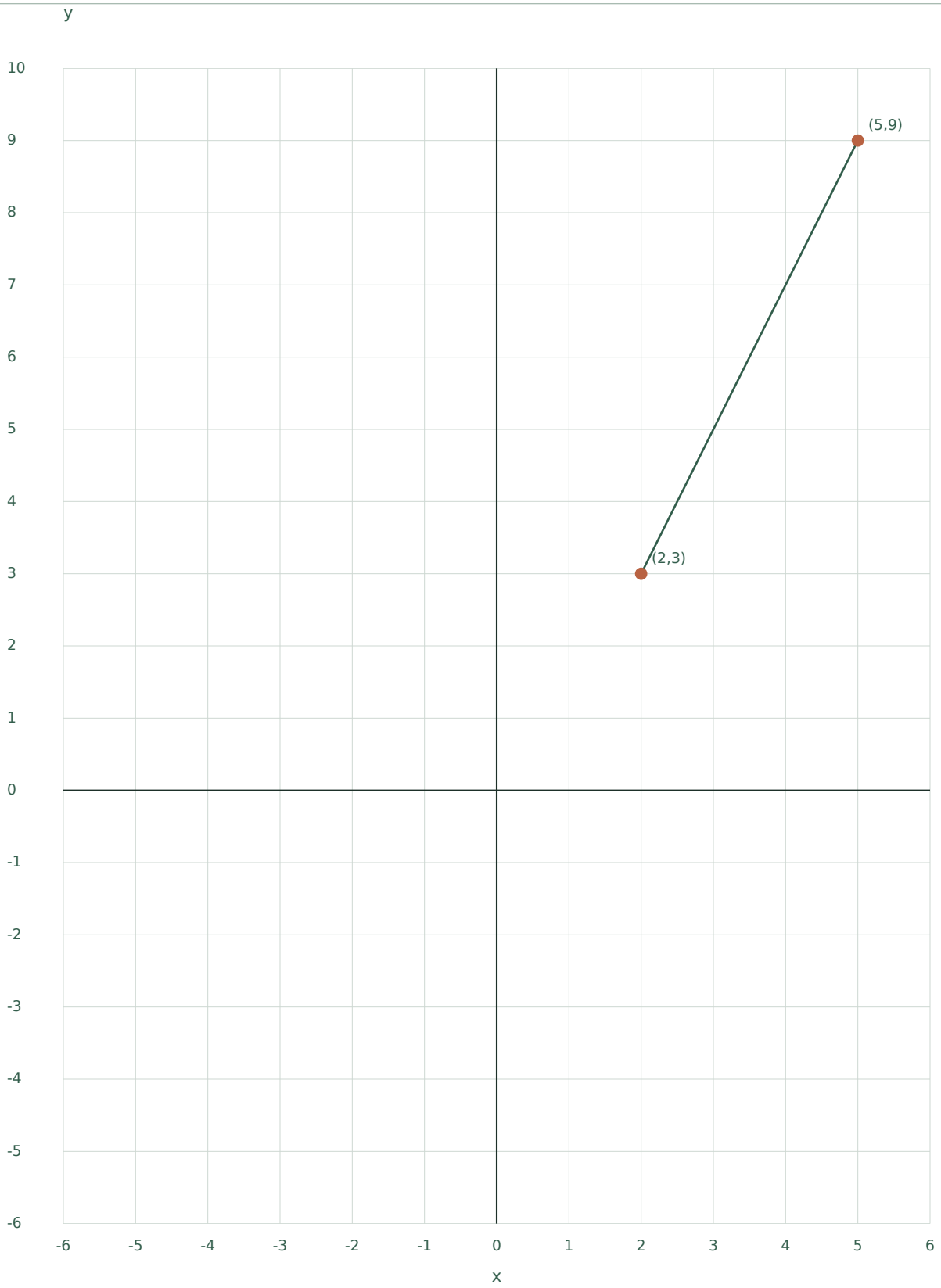
Task 1, Task 2, Task 3, Task 4 / Answer Key - Computations and Check Notes

Text key with slope computations and brief check notes for each task.

Task	Rise	Run	Slope m
1: (2,3),(5,9)	9-3 = 6	5-2 = 3	6/3 = 2
2: (-1,4),(3,-4)	-4-4 = -8	3-(-1) = 4	-8/4 = -2
3: (0,1),(4,1)	1-1 = 0	4-0 = 4	0/4 = 0
4: (3,-2),(3,5)	5-(-2) = 7	3-3 = 0	undefined (division by zero)

Plot Two Points, Draw the Line, and Compute Slope

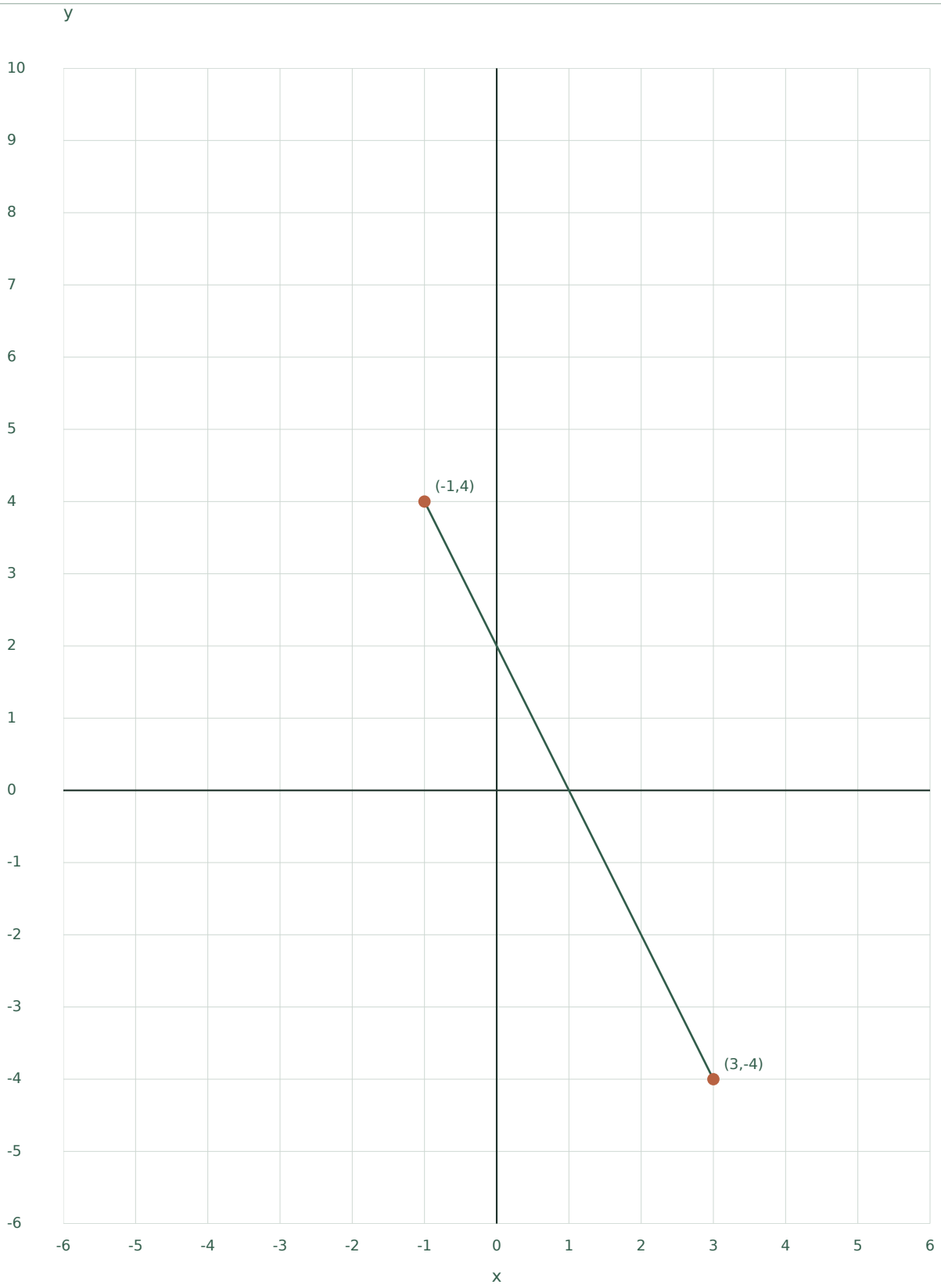
Worked example, Task 1 / Answer Key - Task 1: (2,3) and (5,9)



Rise = 9-3 = 6; run = 5-2 = 3; m = 6/3 = 2. Line rises left to right.

Plot Two Points, Draw the Line, and Compute Slope

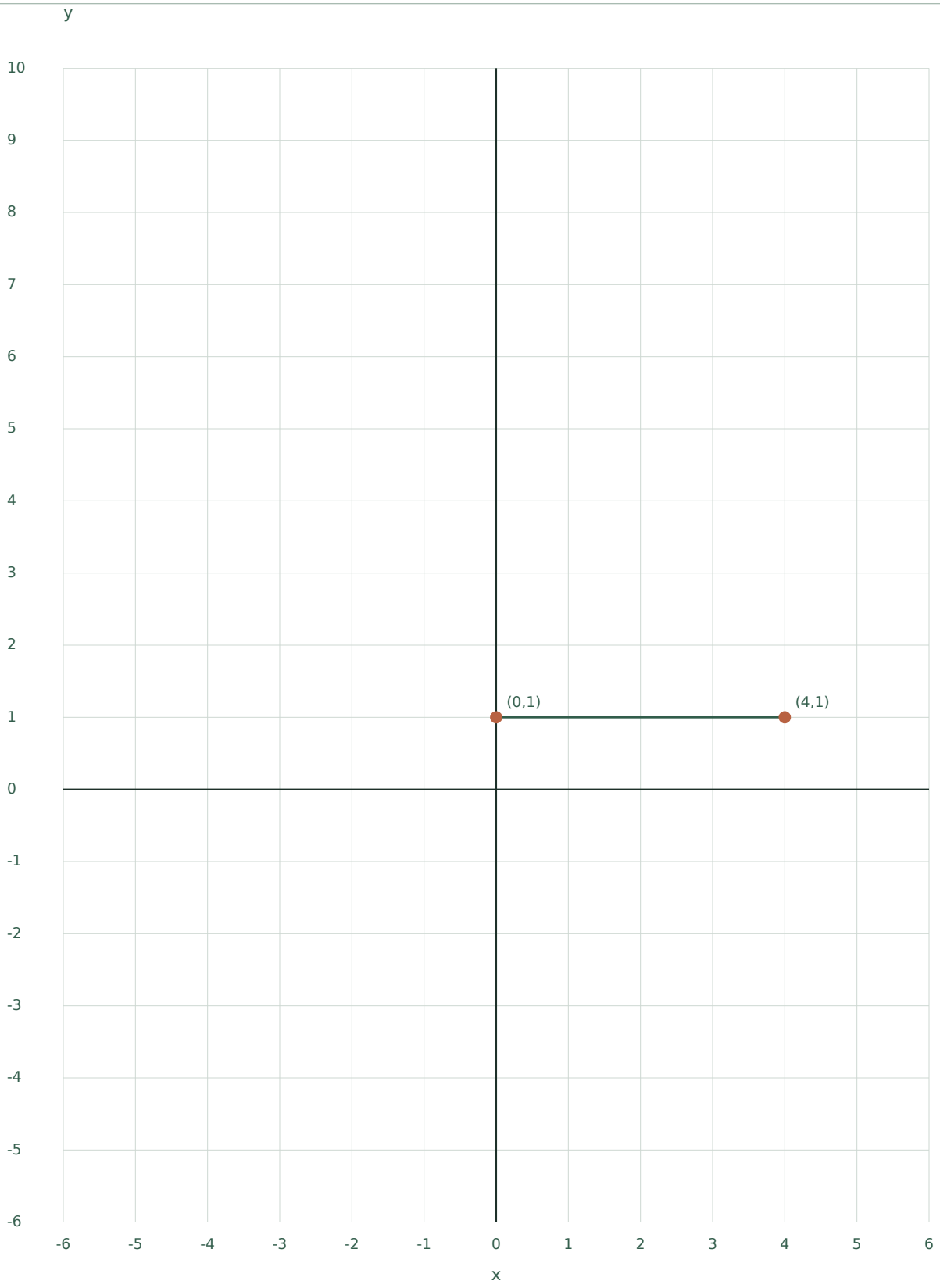
Task 2 / Answer Key - Task 2: (-1,4) and (3,-4)



Rise = -4-4 = -8; run = 3-(-1) = 4; m = -8/4 = -2. Line falls left to right.

Plot Two Points, Draw the Line, and Compute Slope

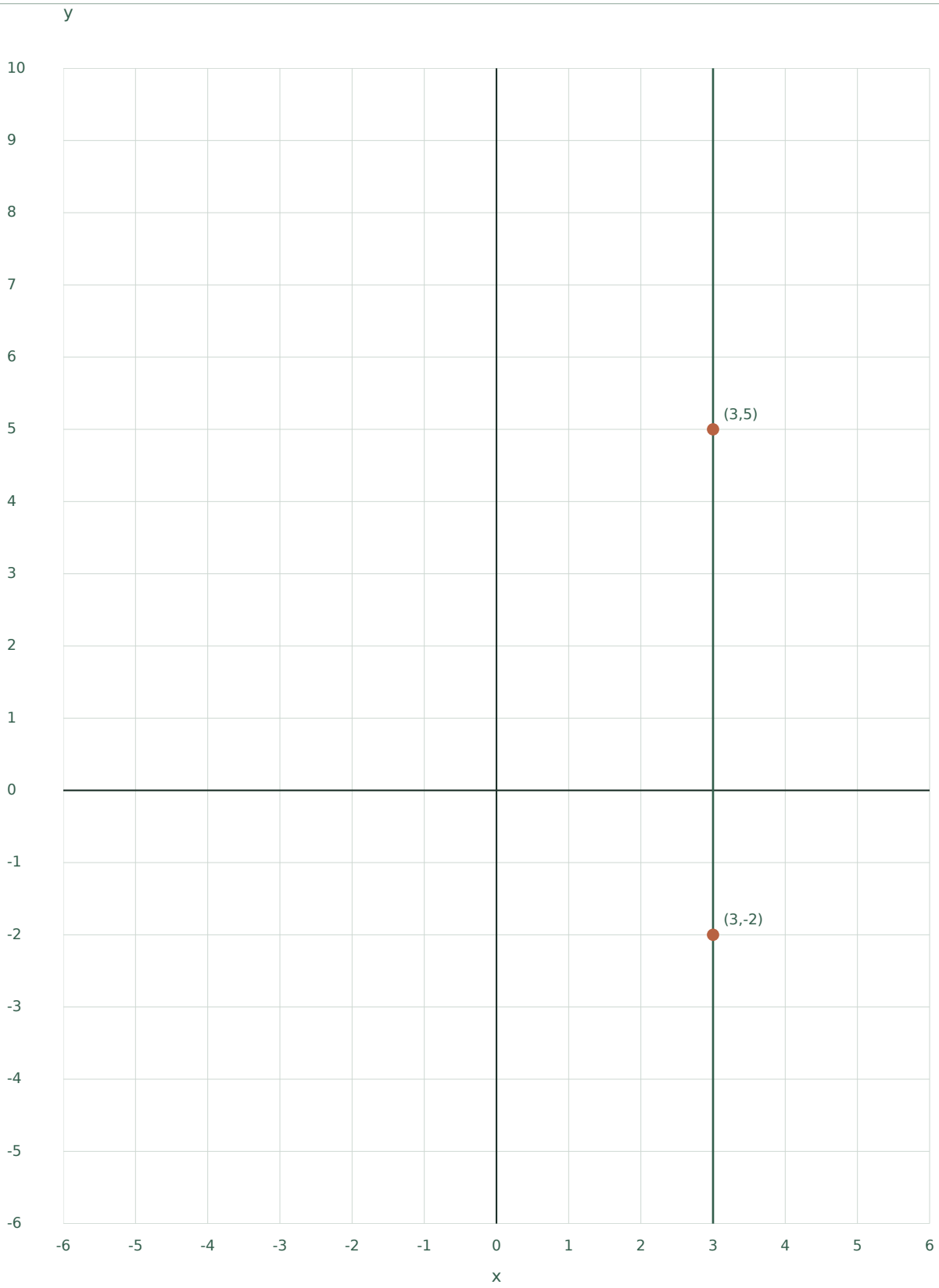
Task 3 / Answer Key - Task 3: (0,1) and (4,1)



Rise = 1-1 = 0; run = 4-0 = 4; m = 0/4 = 0. Line is horizontal.

Plot Two Points, Draw the Line, and Compute Slope

Task 4 / Answer Key - Task 4: (3,-2) and (3,5)



Rise = 5-(-2) = 7; run = 3-3 = 0. Division by zero is undefined; line is vertical.

Plot Two Points, Draw the Line, and Compute Slope

Source rubric / reflection

- [ ] Both points are plotted at the correct coordinates and labeled.
- [ ] A straight line passes through both points and is drawn with a straightedge.
- [ ] Rise and run are marked and labeled with correct direction or signed values.
- [ ] Slope is computed as rise divided by run and simplified correctly.
- [ ] The sign of the slope matches the direction of the drawn line.
- [ ] Conventions are consistent: the same point order is used in both numerator and denominator, and one uniform grid scale is used per graph.

Reflection: What did you check, what did you change, and what will you try next?