Linear Equation Vocabulary: Label the Graph and Match Terms

Original tasks 1, 2, 3 / complete keys

Task 1

A diagram shows a line crossing the y-axis at (0, 1) and passing through (3, 7). Label the y-intercept and the slope. Explain your reasoning.

Answer: Y-intercept: 1. Slope: 2.

Reason: The line crosses the y-axis at (0, 1), so the y-intercept is 1. Slope equals change in y divided by change in x: (7 - 1) divided by (3 - 0) = 6 divided by 3 = 2.

Check: Use y = 2x + 1. At x = 3, y = 2 times 3 plus 1 = 7, which matches the given point.

Task 2

Match each term to one definition: slope, ordered pair, y-intercept, coefficient. Definitions: (A) a number multiplying a variable; (B) the y-value where a line crosses the y-axis; (C) rise over run; (D) two numbers written as (x, y).

Answer: Slope matches C. Ordered pair matches D. Y-intercept matches B. Coefficient matches A.

Reason: Slope describes steepness as rise over run. An ordered pair lists x and y. The y-intercept is the crossing value on the y-axis. A coefficient multiplies a variable.

Check: Read each definition aloud and confirm that the matched term names exactly that idea, with no overlap.

Task 3

In the hypothetical equation y = 5x + 3, identify the slope, the y-intercept, and the coefficient of x. Then state whether (1, 8) is an ordered pair on the line.

Answer: Slope: 5. Y-intercept: 3. Coefficient of x: 5. Yes, (1, 8) is on the line.

Reason: In y = mx + b, m is the slope and also the coefficient of x, while b is the y-intercept. Substituting x = 1 gives y = 5 times 1 plus 3 = 8, so (1, 8) satisfies the equation.

Check: Substitute the ordered pair into the equation and confirm both sides are equal: 8 = 5 times 1 plus 3.

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Original tasks 4 / complete keys

Task 4

A diagram shows a line crossing the x-axis at (4, 0) and the y-axis at (0, 2). Label the x-intercept and y-intercept. Then explain why (0, 2) is not the slope.

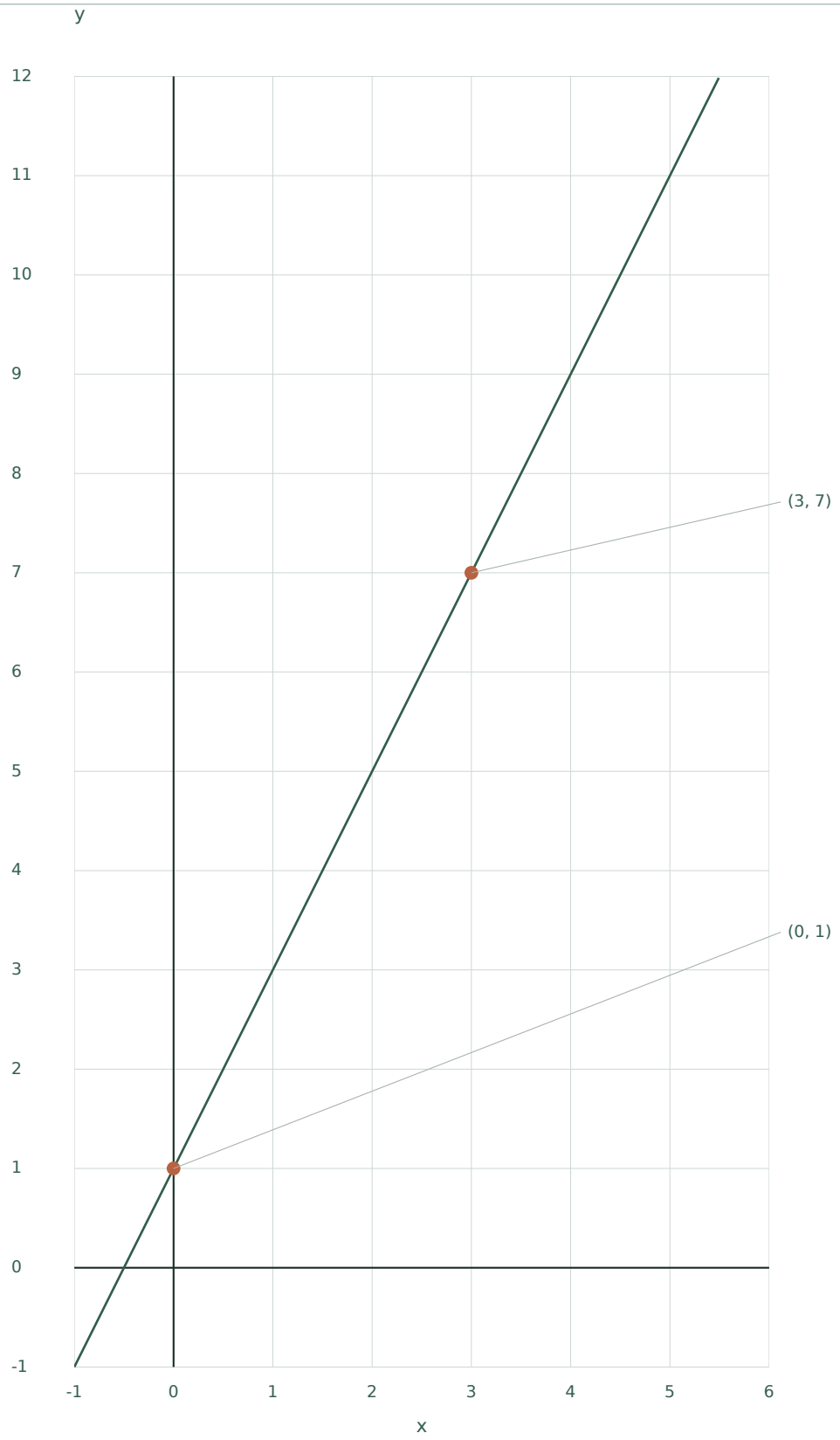
Answer: X-intercept: 4. Y-intercept: 2. (0, 2) is an ordered pair naming a point, not a rate of change, so it is not the slope.

Reason: The x-intercept is the x-value where the line crosses the horizontal axis, which is 4. The y-intercept is the y-value where the line crosses the vertical axis, which is 2. Slope measures steepness as change in y divided by change in x, not a single point.

Check: Confirm that the intercepts are read at axis crossings and that slope requires two points. Using (0, 2) and (4, 0): change in y is 0 - 2 = -2 and change in x is 4 - 0 = 4, so slope = -2/4 = -1/2.

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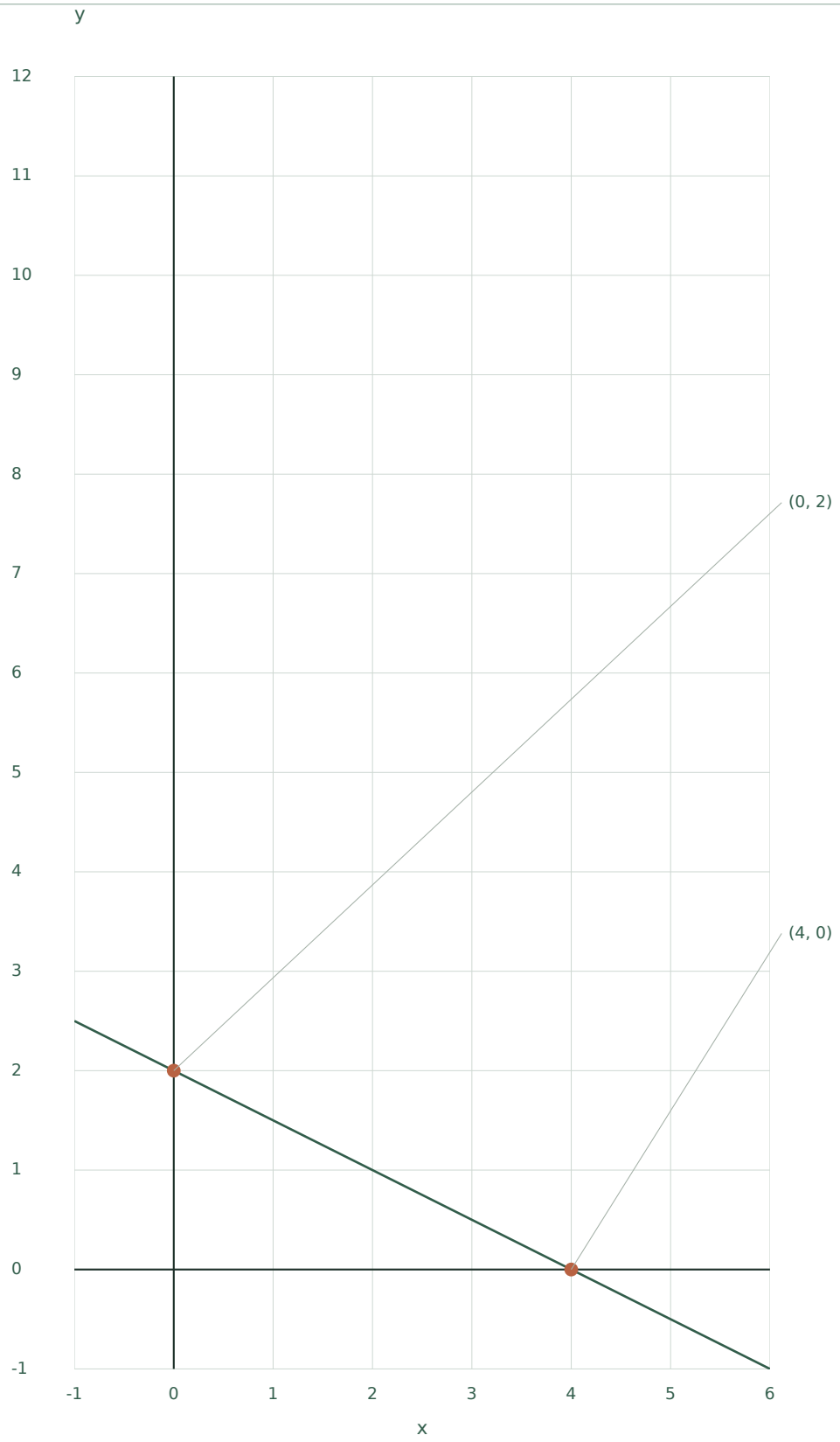
Task 1 / complete graph key



Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Linear Equation Vocabulary: Label the Graph and Match Terms

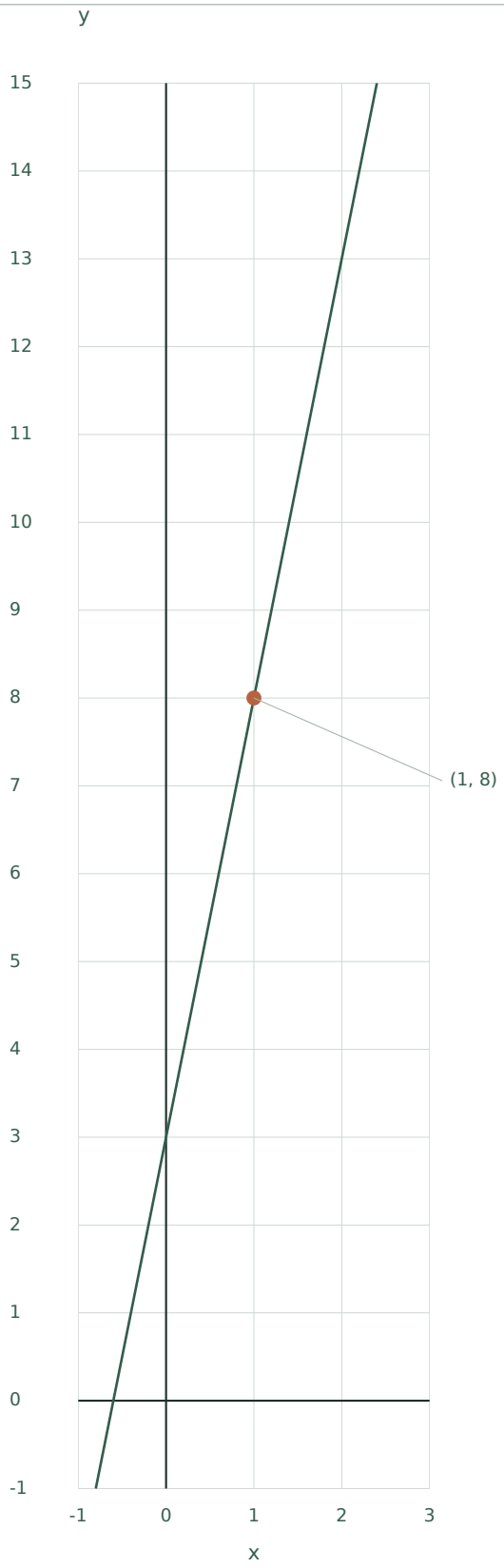
Task 4 / complete graph key



Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Linear Equation Vocabulary: Label the Graph and Match Terms

Task 3 / complete graph key



The supplied point satisfies the given equation: 5 times 1 plus 3 equals 8. Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.

Linear Equation Vocabulary: Label the Graph and Match Terms

Source rubric / reflection

- [ ] All ten terms are placed in correct diagram boxes or matching spaces.
- [ ] Definitions are matched accurately, with no term used twice.
- [ ] Ordered pairs are written with x first and y second.
- [ ] Slope is described as a rate of change, not as a point.
- [ ] Intercepts are labeled only at axis crossings.
- [ ] Coefficient and constant are distinguished correctly.
- [ ] Valid alternative wording is accepted if the meaning is precise and consistent with the diagram.

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