Plotting Lines from y = mx + b: Slope-Intercept Practice

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

Task 1

Plot the line y = 3x - 1. State the intercept, the rise, the run, and two points on the line.

Answer: Intercept (0, -1); slope 3 = 3/1, so rise 3 and run 1; second point (1, 2); third point (2, 5).

Reason: b = -1 gives the intercept below the x-axis. The slope 3 means move 1 right and 3 up from (0, -1) to (1, 2), then again to (2, 5). Check: 3(1) - 1 = 2 and 3(2) - 1 = 5.

Check: Substitute x = 1 and x = 2 into y = 3x - 1 and confirm the y-values match the plotted points.

Task 2

Plot the line y = -1/2 x + 2. State the intercept, the rise, the run, and two points on the line.

Answer: Intercept (0, 2); slope -1/2 means rise -1 and run 2; second point (2, 1); third point (4, 0).

Reason: Start at (0, 2). Move 2 right and 1 down to (2, 1), then again to (4, 0). Check: -1/2(2) + 2 = 1 and -1/2(4) + 2 = 0.

Check: Substitute x = 2 and x = 4 into the equation and verify the results equal the y-coordinates.

Task 3

Plot the line y = 4x + 0. State the intercept, the rise, the run, and two points on the line.

Answer: Intercept (0, 0); slope 4 = 4/1, so rise 4 and run 1; second point (1, 4); third point (2, 8).

Reason: b = 0 means the line passes through the origin. From (0, 0), move 1 right and 4 up to (1, 4), then again to (2, 8). Check: 4(1) + 0 = 4 and 4(2) + 0 = 8.

Check: Substitute x = 1 and x = 2 into y = 4x and confirm the y-values are 4 and 8.

Task 4

Plot the line y = -3x - 2. State the intercept, the rise, the run, and two points on the line.

Answer: Intercept (0, -2); slope -3 = -3/1, so rise -3 and run 1; second point (1, -5); third point (2, -8).

Reason: Start at (0, -2). Move 1 right and 3 down to (1, -5), then again to (2, -8). Check: -3(1) - 2 = -5 and -3(2) - 2 = -8.

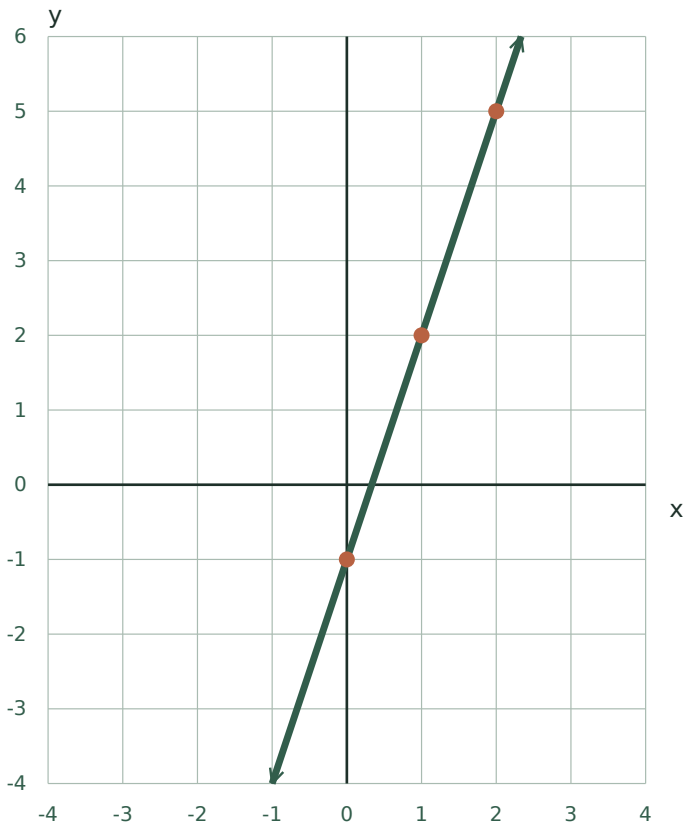
Check: Substitute x = 1 and x = 2 into y = -3x - 2 and confirm the y-values match the plotted points.

Plotting Lines from y = mx + b: Slope-Intercept Practice

Task 1 / completed source graph

Plot the line y = 3x - 1. State the intercept, the rise, the run, and two points on the line.

Line 1 (solid green): y = 3x - 1



A complete line continues beyond this display window; arrowheads show continuation.

Marked point: (0, -1).
Marked point: (1, 2).
Marked point: (2, 5).

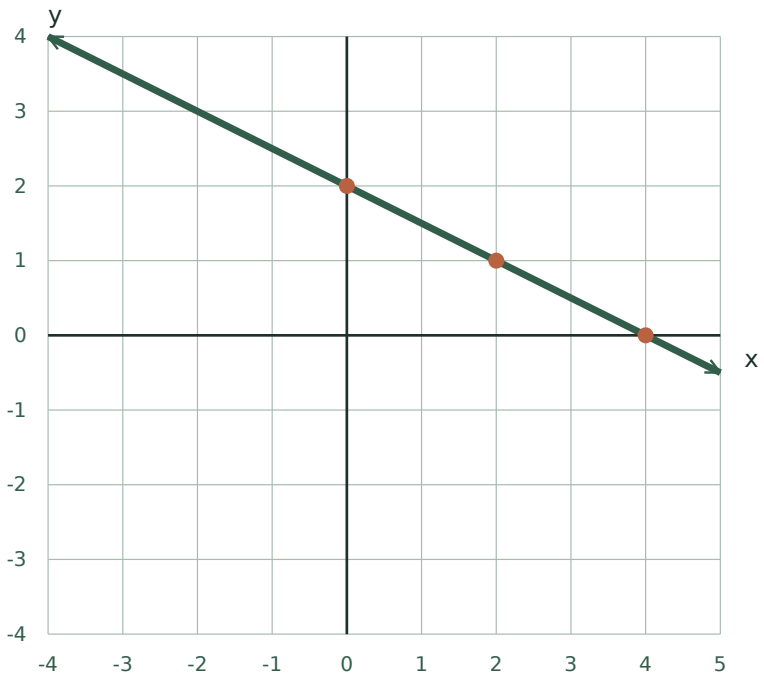
Horizontal interval = 1; vertical interval = 1. This is a display window, not a new domain.

Plotting Lines from y = mx + b: Slope-Intercept Practice

Task 2 / completed source graph

Plot the line y = -1/2 x + 2. State the intercept, the rise, the run, and two points on the line.

Line 1 (solid green): y = -1/2 x + 2



A complete line continues beyond this display window; arrowheads show continuation.

Marked point: (0, 2).
Marked point: (2, 1).
Marked point: (4, 0).

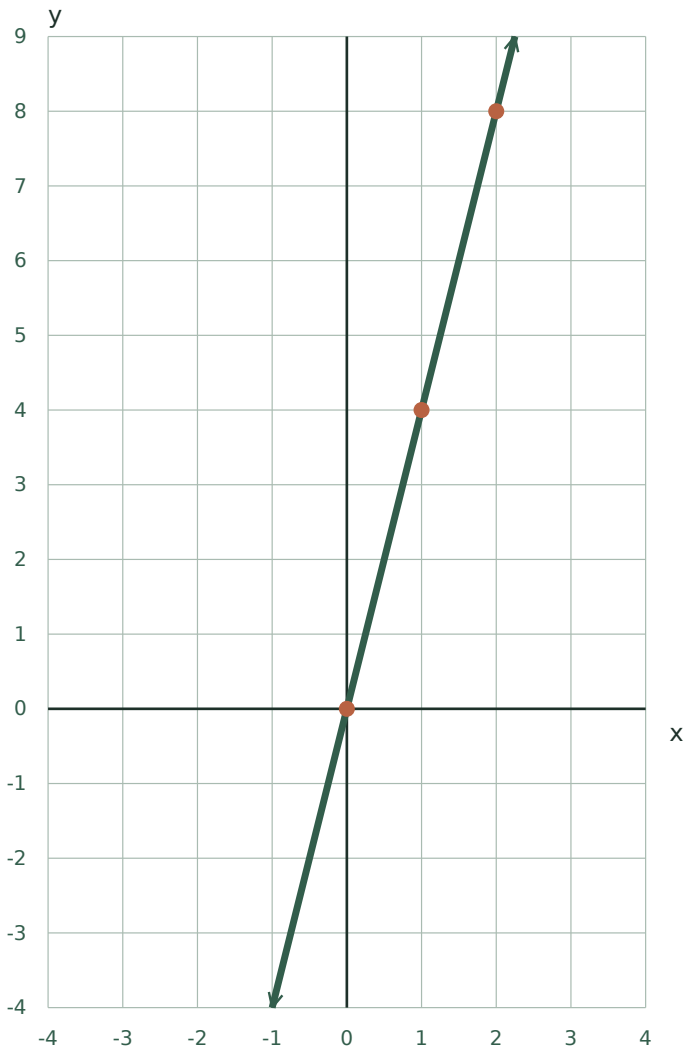
Horizontal interval = 1; vertical interval = 1. This is a display window, not a new domain.

Plotting Lines from y = mx + b: Slope-Intercept Practice

Task 3 / completed source graph

Plot the line y = 4x + 0. State the intercept, the rise, the run, and two points on the line.

Line 1 (solid green): y = 4x + 0



A complete line continues beyond this display window; arrowheads show continuation.

Marked point: (0, 0).
Marked point: (1, 4).
Marked point: (2, 8).

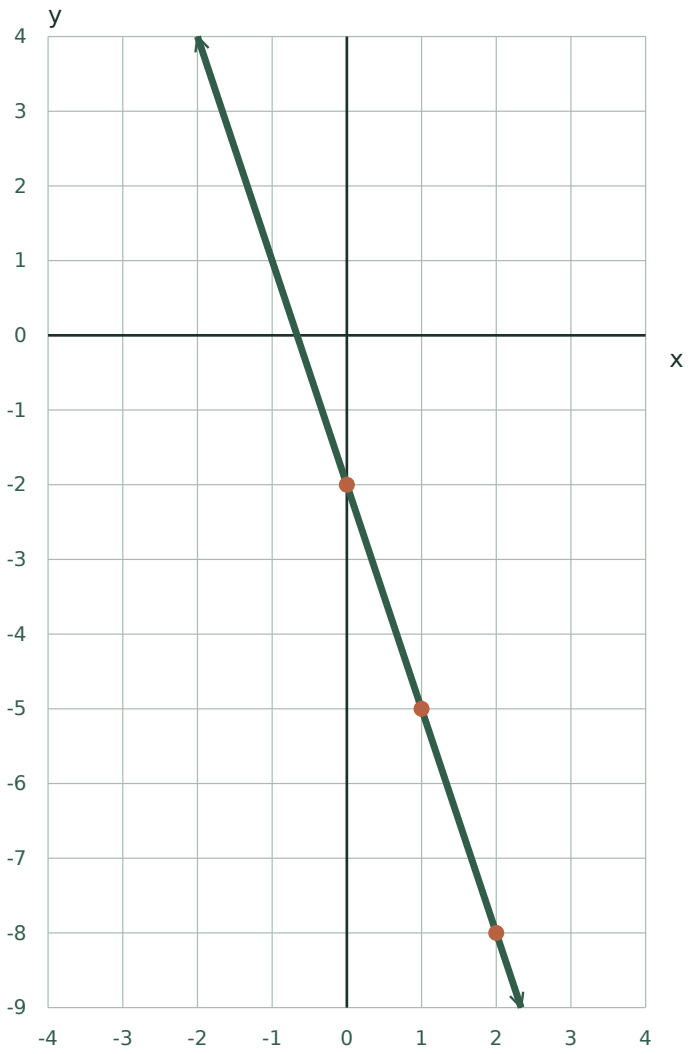
Horizontal interval = 1; vertical interval = 1. This is a display window, not a new domain.

Plotting Lines from y = mx + b: Slope-Intercept Practice

Task 4 / completed source graph

Plot the line y = -3x - 2. State the intercept, the rise, the run, and two points on the line.

Line 1 (solid green): y = -3x - 2



A complete line continues beyond this display window; arrowheads show continuation.

Marked point: (0, -2).
Marked point: (1, -5).
Marked point: (2, -8).

Horizontal interval = 1; vertical interval = 1. This is a display window, not a new domain.

Plotting Lines from y = mx + b: Slope-Intercept Practice

Original rubric / reflection

- [ ] Intercept plotted correctly at (0, b).
- [ ] Slope written as a rise/run fraction with the correct sign.
- [ ] Second point plotted by moving run right and rise up or down from the intercept.
- [ ] Line drawn straight through the plotted points and extended across the grid.
- [ ] At least one point checked by substitution into y = mx + b.
- [ ] Labels or checklist marks show intercept, rise, and run clearly.

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