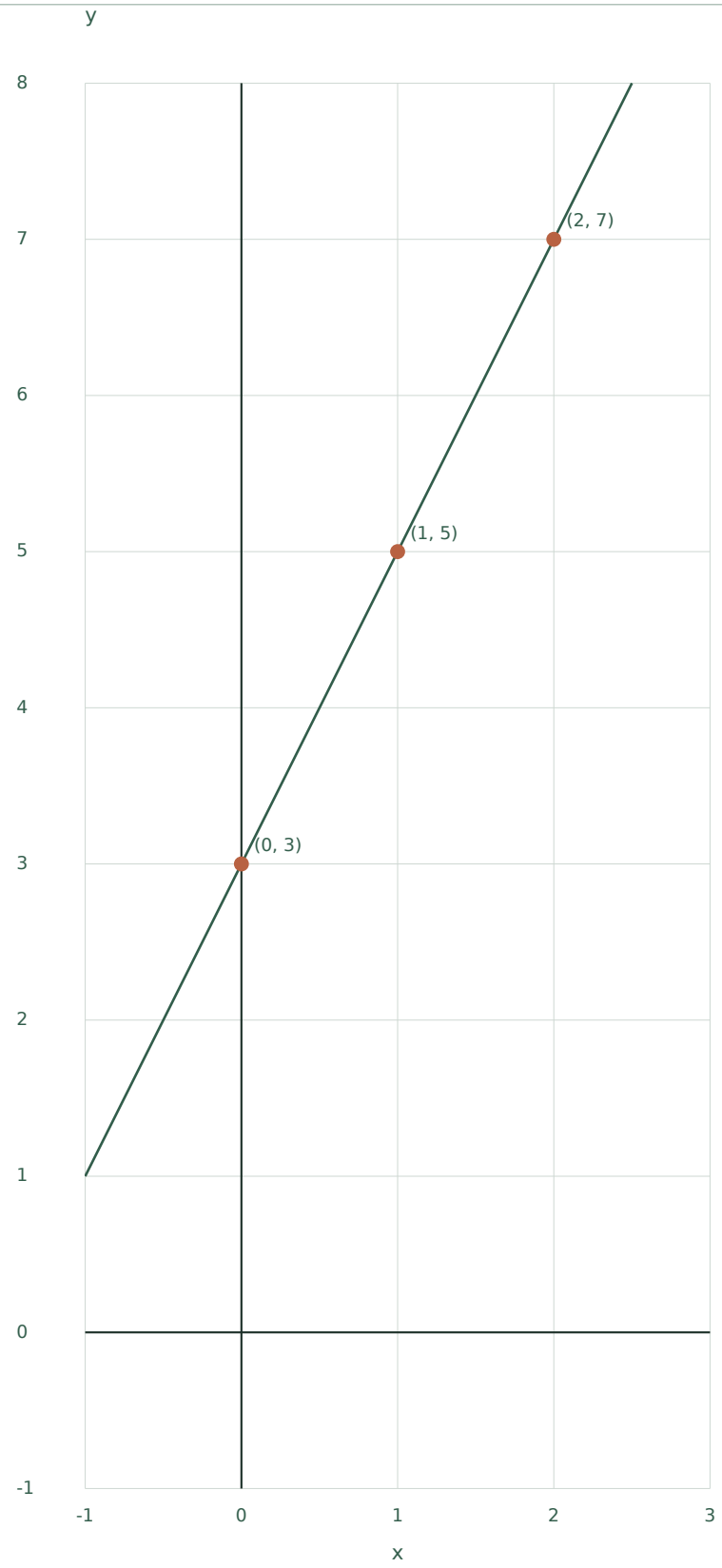
Link Tables, Graphs, and Equations for Linear Relationships

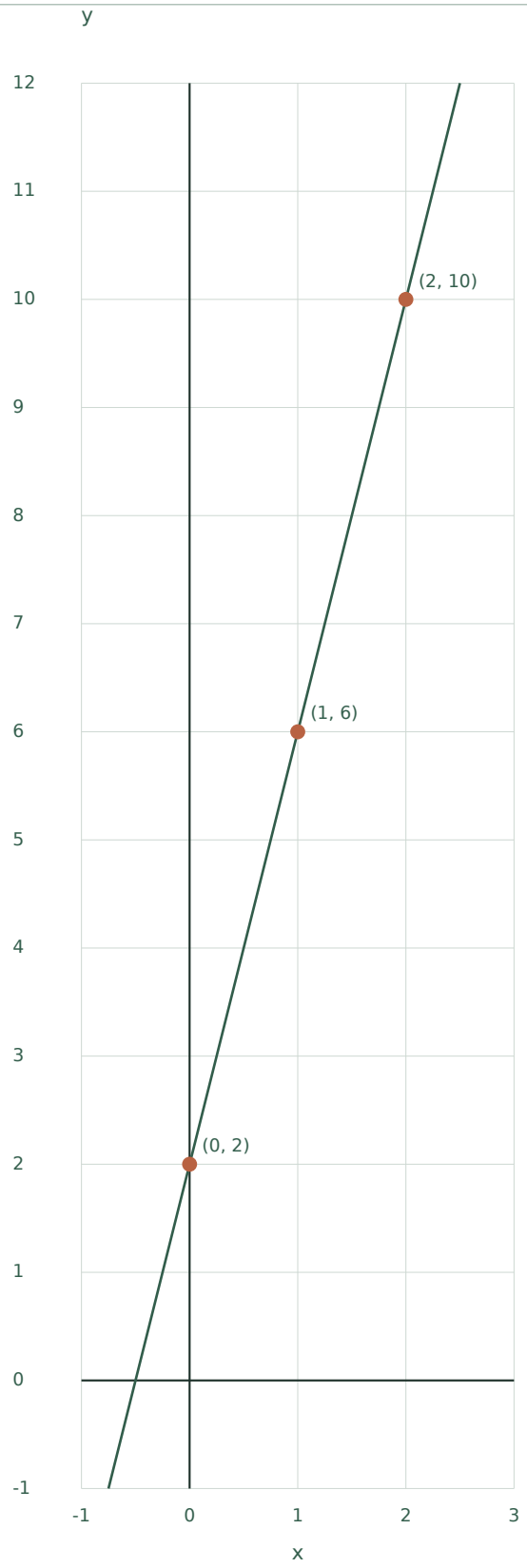
Answer diagram: Item 5 line y = 2x + 3



Straight line through (0,3),(1,5),(2,7).

Link Tables, Graphs, and Equations for Linear Relationships

Answer diagram: Item 6 line y = 4x + 2



Straight line through (0,2),(1,6),(2,10).

Link Tables, Graphs, and Equations for Linear Relationships

Complete worked example / separate answer key

A table shows (0, 2), (1, 6), (2, 10). Find the equation, describe the graph, and verify consistency.

Answer: Slope m = (6 - 2)/(1 - 0) = 4. Using (0, 2): 2 = 4(0) + b, so b = 2. Equation: y = 4x + 2. The graph is a straight line crossing the y-axis at (0, 2) and passing through (1, 6) and (2, 10). Check: when x = 2, y = 4(2) + 2 = 10, which matches the table.

Link Tables, Graphs, and Equations for Linear Relationships

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

Task 1

A table shows (0, 5), (1, 8), (2, 11). Write the equation and describe the graph.

Answer: y = 3x + 5. The graph is a straight line crossing the y-axis at (0, 5) and passing through (1, 8) and (2, 11).

Reason: Change in y is 3 for each increase of 1 in x, so m = 3. At x = 0, y = 5, so b = 5.

Check: Substitute x = 2 into y = 3x + 5 to get 11, which matches the table.

Task 2

An equation is y = -x + 4. Build a table for x = 0, 1, 2 and describe the graph.

Answer: Table: (0, 4), (1, 3), (2, 2). The graph is a straight line with slope -1 crossing the y-axis at (0, 4).

Reason: Substitute each x into the equation: 0 gives 4, 1 gives 3, 2 gives 2. The slope is -1, so the line goes down 1 for each 1 right.

Check: Plot the three points; they should lie on a straight line. Verify that (1, 3) satisfies 3 = -1 + 4.

Task 3

A graph (described) passes through (0, 1), (1, 4), and (2, 7). Write the table and equation.

Answer: Table: x = 0, 1, 2; y = 1, 4, 7. Equation: y = 3x + 1.

Reason: The y-intercept is 1. The change in y is 3 for each increase of 1 in x, so m = 3.

Check: Test (2, 7) in y = 3x + 1: 3(2) + 1 = 7, which matches.

Task 4

A table shows (1, 2), (3, 8), (5, 14). Find the equation and check with a fourth point x = 4.

Answer: y = 3x - 1. When x = 4, y = 11.

Reason: Slope m = (8 - 2)/(3 - 1) = 6/2 = 3. Using (1, 2): 2 = 3(1) + b, so b = -1.

Check: Substitute x = 4 into y = 3x - 1 to get 11. Also check (5, 14): 3(5) - 1 = 14.

Link Tables, Graphs, and Equations for Linear Relationships

Worked example, Task 1, Task 2, Task 3, Task 4 / Separate answer key: all representations for 6 items

Answer key with slope, intercept, table, graph description, and consistency check for each item.

Item 1: y = 3x + 5. Slope 3, intercept 5. Graph: straight line through (0,5),(1,8),(2,11). Check: x=2 gives 11.

Item 2: Table (0,4),(1,3),(2,2). Slope -1, intercept 4. Graph: straight line down 1 per 1 right. Check: (1,3) satisfies 3 = -1 + 4.

Item 3: Table x=0,1,2; y=1,4,7. Equation y = 3x + 1. Slope 3, intercept 1. Check: 3(2)+1=7.

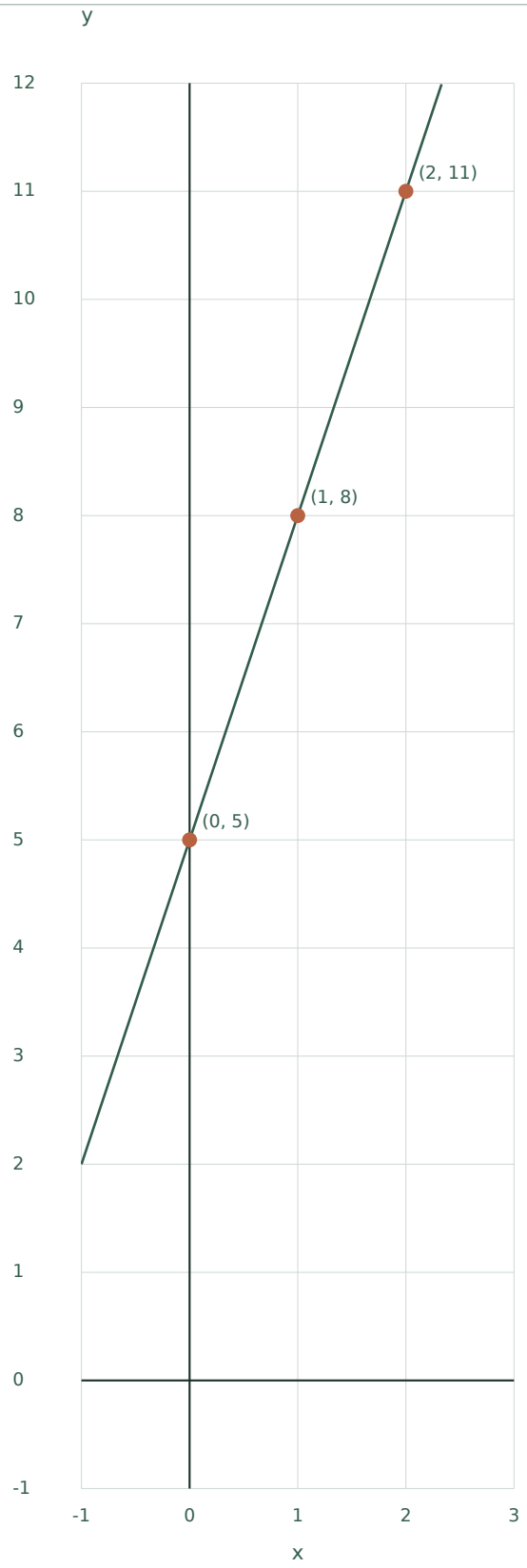
Item 4: y = 3x - 1. Slope 3, intercept -1. At x=4, y=11. Check: 3(5)-1=14.

Item 5: Table (0,3),(1,5),(2,7). Slope 2, intercept 3. Graph: straight line through these points. Check: 2(2)+3=7.

Item 6: Table x=0,1,2; y=2,6,10. Equation y = 4x + 2. Slope 4, intercept 2. Check: 4(2)+2=10.

Link Tables, Graphs, and Equations for Linear Relationships

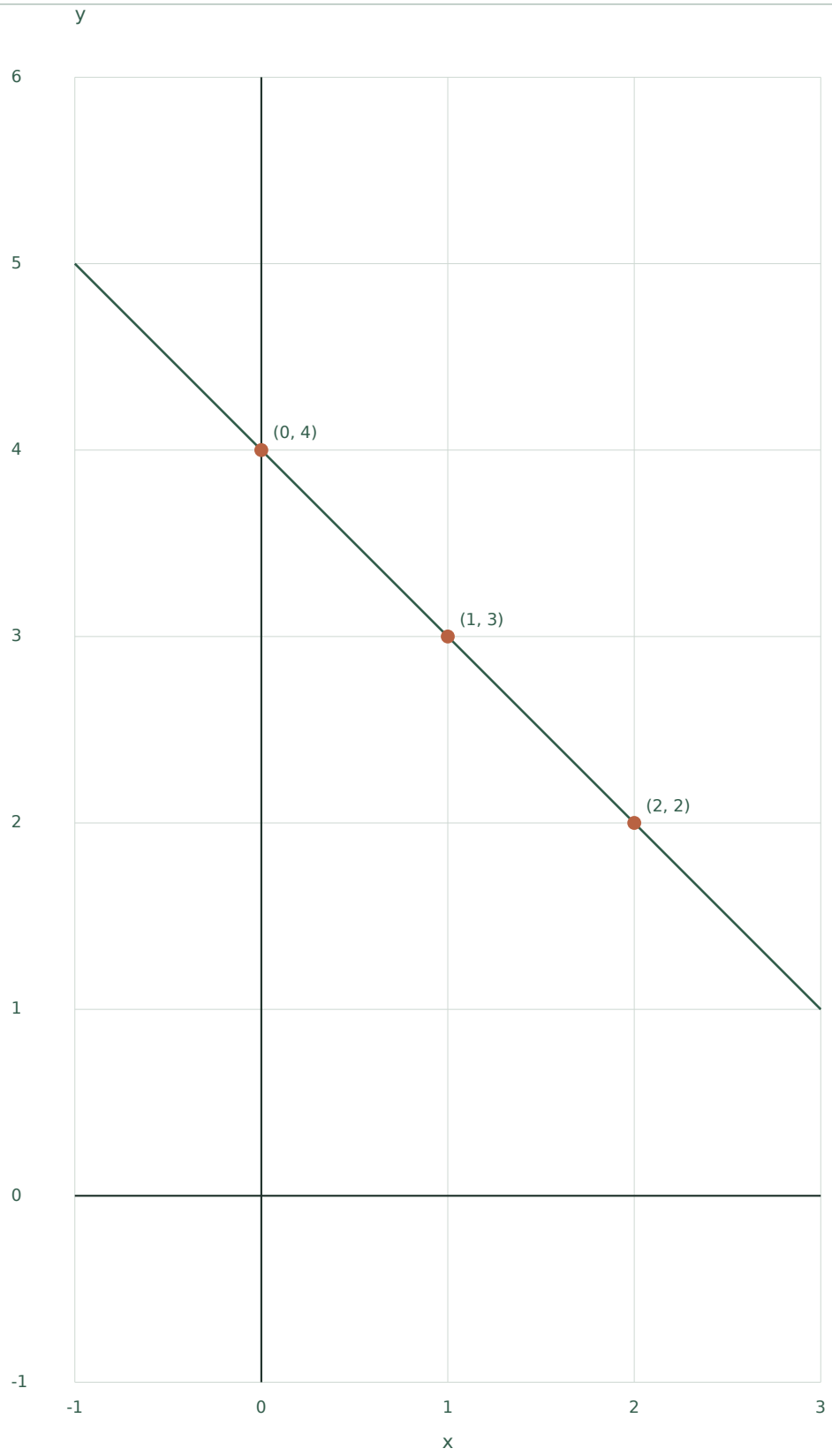
Task 1 / Answer diagram: Item 1 line y = 3x + 5



Straight line crossing y-axis at (0,5).

Link Tables, Graphs, and Equations for Linear Relationships

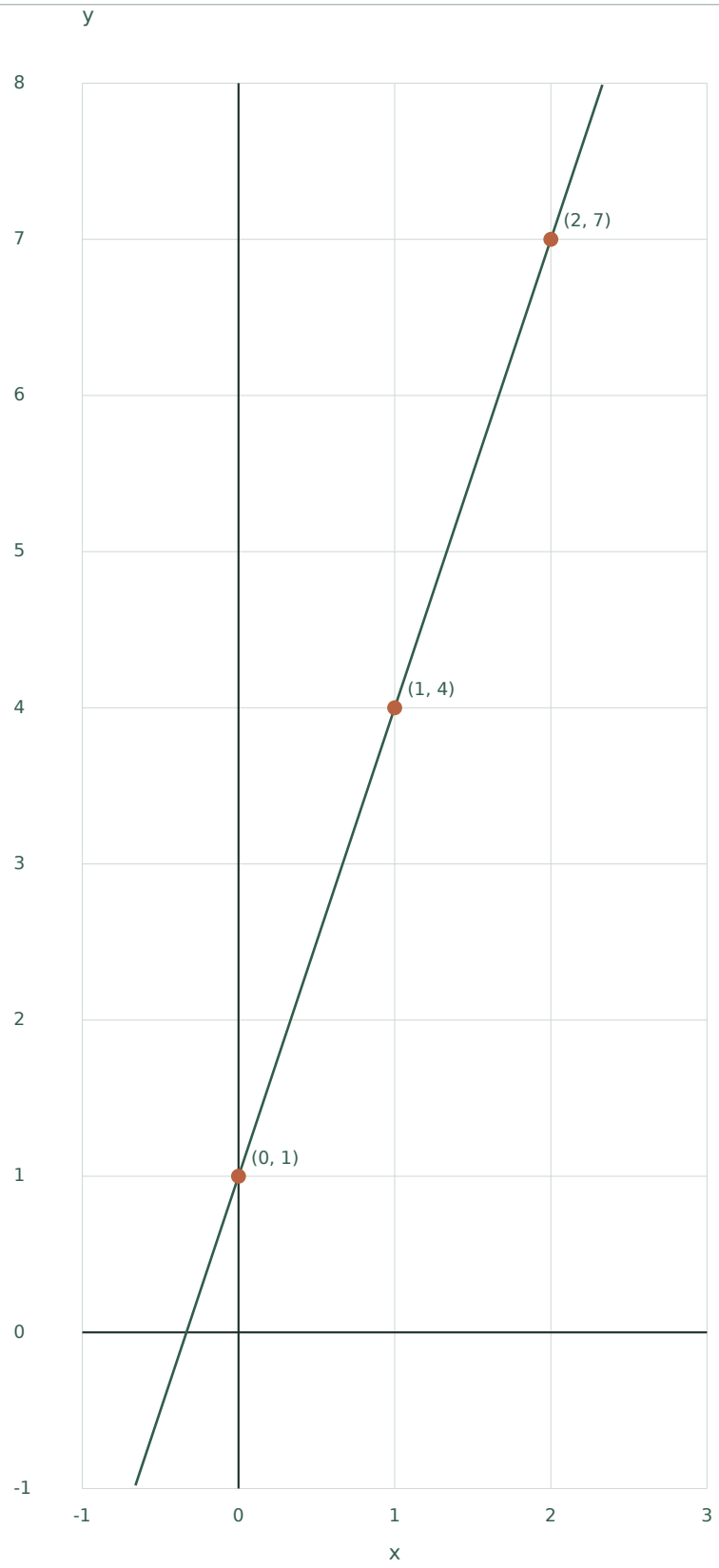
Task 2 / Answer diagram: Item 2 line y = -x + 4



Straight line with slope -1 crossing y-axis at (0,4).

Link Tables, Graphs, and Equations for Linear Relationships

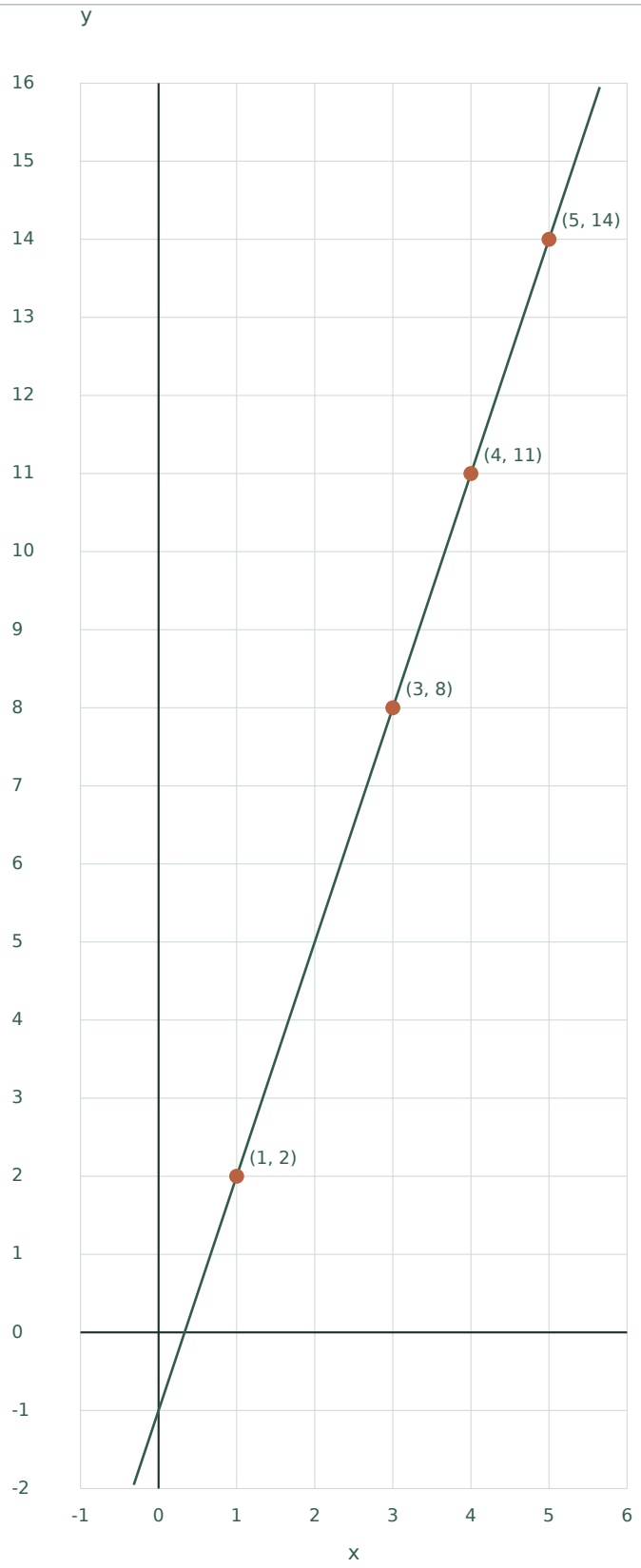
Task 3 / Answer diagram: Item 3 line y = 3x + 1



Straight line through (0,1),(1,4),(2,7).

Link Tables, Graphs, and Equations for Linear Relationships

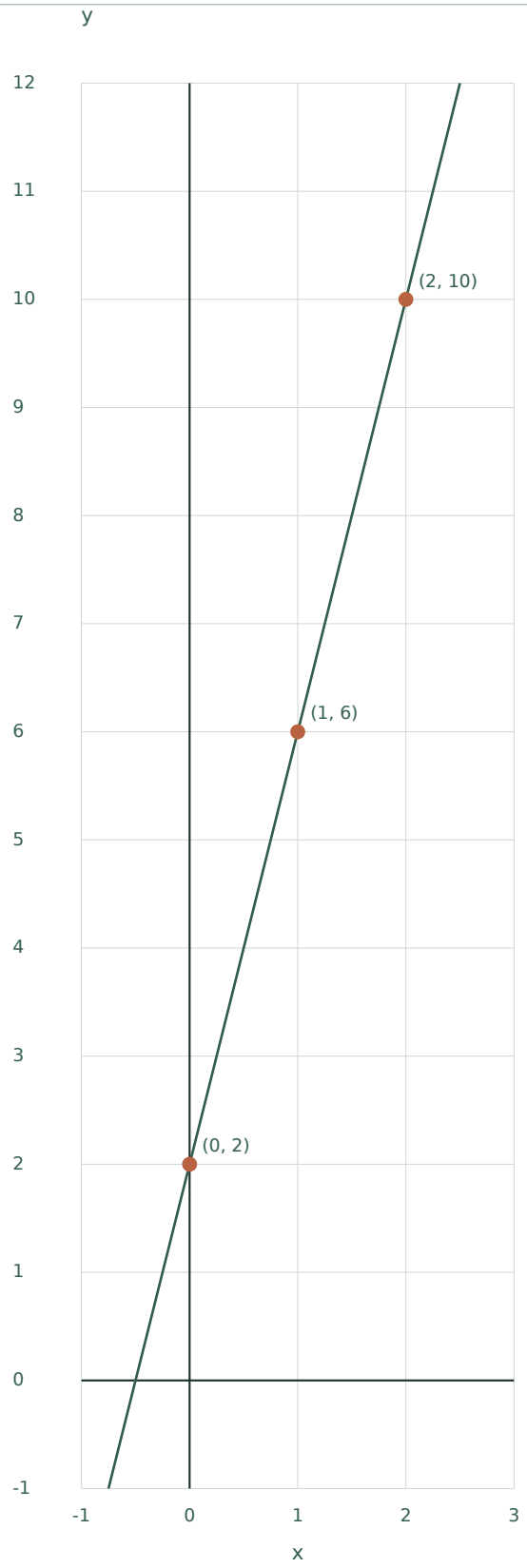
Task 4 / Answer diagram: Item 4 line y = 3x - 1



Line through (1,2),(3,8),(5,14); x=4 gives y=11.

Link Tables, Graphs, and Equations for Linear Relationships

Worked example / Diagram 1: y = 4x + 2 (worked example)



Straight line crossing y-axis at (0,2); passes through (1,6) and (2,10).

Link Tables, Graphs, and Equations for Linear Relationships

Source rubric / reflection

- [ ] Equation correctly identifies slope and y-intercept from the given representation.
- [ ] Table contains at least three correct ordered pairs consistent with the equation.
- [ ] Graph plots at least three correct points and draws a straight line through them.
- [ ] Axes are labeled and scale is clear; handwriting style may vary.
- [ ] Consistency check is shown by testing a point across representations.
- [ ] Valid alternative notations (for example, y = 2 + 3x) are accepted if equivalent.

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