Unit 4 – Lesson 14	Name:	
Horizontal and Vertical Lines	Date:	Period:

Focus Standard:8.EE.B.5Graph proportional relationships, interpreting the unit rate as the
slope of the graph. Compare two different proportional
relationships represented in different ways. For example,
compare a distance-time graph to a distance-time equation to
determine which of two moving objects has greater speed.

Student Outcomes

• Students graph linear equations in standard form, ax + by = c (a or b = 0), that produce a horizontal or a vertical line.

Exercises

1. Find at least four solutions to graph the linear equation 1x + 2y = 5.

2. Find at least four solutions to graph the linear equation 1x + 0y = 5.

3. What was different about the equations in Exercises 1 and 2? What effect did this change have on the graph?

- 4. Graph the linear equation x = -2.
- 5. Graph the linear equation x = 3.
- 6. What will the graph of x = 0 look like?

7. Find at least four solutions to graph the linear equation 2x + 1y = 2.

8. Find at least four solutions to graph the linear equation 0x + 1y = 2.

9. What was different about the equations in Exercises 7 and 8? What effect did this change have on the graph?

- 10. Graph the linear equation y = -2.
- 11. Graph the linear equation y = 3.
- 12. What will the graph of y = 0 look like?

Lesson Summary

1) A linear equation in standard form, ax + by = c, where a = 1 and b = 0, is the graph of the equation x = c. The graph of x = c is the vertical line passing through the point (c, 0).

2) A linear equation in standard form, ax + by = c, where a = 0 and b = 1, is the graph of the equation y = c. The graph of y = c is the horizontal line passing through the point (0, c).

Problem Set

- 1. Graph the two-variable linear equation ax + by = c, where a = 0, y = 1, and c = -4.
- 2. Graph the two-variable linear equation ax + by = c, where a = 1, y = 0, and c = 9.
- 3. Graph the linear equation y = 7.
- 4. Graph the linear equation x = 1.
- 5. Explain why the graph of a linear equation in the form of y = c is the horizontal line, parallel to the *x*-axis passing through the point (0, c).
- 6. Explain why there is only one line with the equation y = c that passes through the point (0, c).