Lesson 6.1.1

6-1. See below:

a. It can be represented as a point on a number line or a vertical line in the xy-plane.

b. A line in the xy-plane.

c. Answers vary.

6-3. See below:

a. Answers vary.

b. (3, 4, 2)

c. 8

6-4. See below:

a. (2, 2, 2)

b. (2, 1, 3)

c. (0, 0, 0), (0, 0, 3), (0, 1, 0), (0, 1, 3), (2, 0, 0), (2, 0, 3), (2, 1, 0), (2, 1, 3)

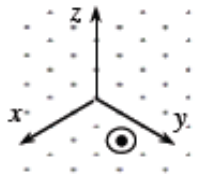
6-5. See below:

a. (0, 0, 0), (1, 0, 4), (1, 3, 0), (0, 3, 4), (1, 3, 4)

b. (–1, 3, 0), (–1, 3, 4), (–1, 0, 4), (0, 3, 4), (0, 0, 0)

c. No, the prism would be unique as long as one point is anchored at the origin.

6-6. See graph below.



a. They all appear to be the same point when graphed on isometric dot paper.

b. Answers vary, but one possibility is to draw rays to show how the point travels in each direction to its final

location.

c. Answers may include (0, 2, 2) and (1, 3, 3).

6-8. See below:

a. Their y- and z-coordinates are zero.

b. Answers vary, but should include the idea that the other coordinate axes values will be zero.

6-9. $x = -2$, $y = 5$

6-10. See below:

a. 9

b. $4N - 3$, arithmetic

6-11. See below:

a. $x \approx 1.204$

b. $x \approx 1.613$

c. $x = 6$

d. $x \approx 2.004$

6-12. See below:

a. $\frac{1}{25}$

b. $\frac{x}{y^2}$

c. $\frac{1}{x^2y^2}$

d. $\frac{b^{10}}{a}$

6-13. See below:

a. x

b. $\frac{6}{x^2-3x+2}$

6-14. See below:

a. $\frac{1}{2}$

b. –2

c. The product of the slopes is –1, or they are negative reciprocals of each other.

6-15. Heather is correct, because a 4% decrease does not "undo" a 4% increase.