Answers

2. a. quadratic function

b. after $5\sqrt{2} \approx 7.07$ years

c. domain: $x \geq 0$, range: $0 \leq y \leq 15{,}000$

3. *Sample answer:* domain: all real numbers; range: all real numbers; vertical shrink by a factor of $\frac{1}{2}$; reflection in y-axis; translation 5 units up

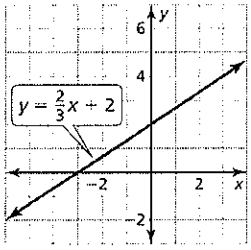
4. *Sample answer:* domain: all real numbers; range: $y \leq -3$; vertical stretch by a factor of 4; reflection in x-axis; translation 3 units down

5. *Sample answer:* domain: all real numbers; range: $y \geq 5$; horizontal stretch by a factor of 3; reflection in y-axis; translation 5 units up and 3 units to the left

1.1 Puzzle Time

BECAUSE PEOPLE ALWAYS SAY IF IT IS NOT BROKEN DO NOT FIX IT

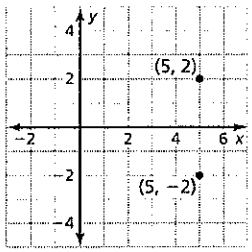
1.2 Start Thinking



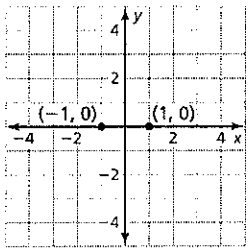
The equation becomes $y = \frac{2}{3}x + 3$; The equation becomes $y = \frac{2}{3}x + 1$; When 1 is added, by definition, the y-intercept moves up one unit. The slope is the same, so each point is moved up one unit. When -1 is added, the y-intercept moves down one unit, along with every other point on the line.

1.2 Warm Up

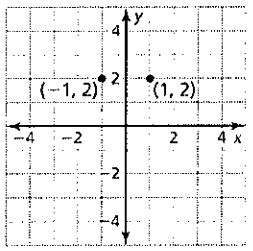
1.



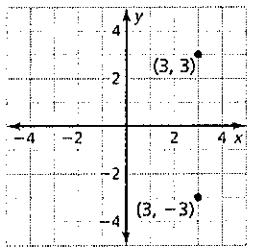
2.



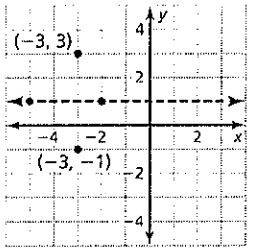
3.



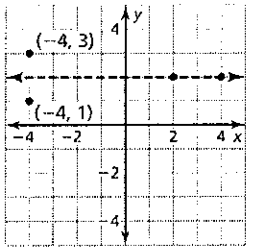
4.



5.



6.



1.2 Cumulative Review Warm Up

1. one

2. one

3. zero

4. one

5. two

6. zero

1.2 Practice A

1. $g(x) = x + 3$

2. $g(x) = x - 3$

3. $g(x) = |3x + 2| + 1$

4. $g(x) = 4x - 2$

5. $g(x) = 3x - 7$

6. $g(x) = -\frac{1}{3}x + 2$

7. $g(x) = |-4x| - 6$

8. $g(x) = |-3x - 5| + 3$

9. $g(x) = 4x + 12$

10. $g(x) = \frac{4}{3}x + 1$

11. $g(x) = |9x| + 2$

12. $g(x) = \left|\frac{1}{3}x + 1\right|$

13. $g(x) = \frac{1}{3}x - 4$

14. $g(x) = |2x + 3|$

1.2 Practice B

1. $g(x) = 5x - 27$

2. $g(x) = 3x + 10$

3. $g(x) = 3 - |x|$

4. $g(x) = |2x| + 1$

5. $g(x) = x + 3$

6. $g(x) = -\frac{2}{3}x + 4$