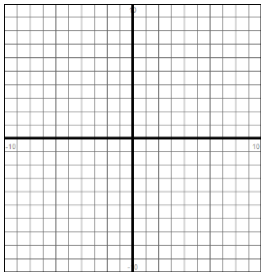
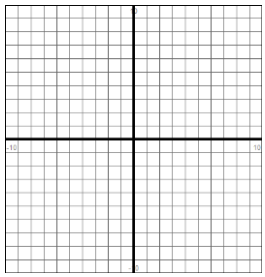
Chapter 1 Review

Graph the function and describe the transformation in words.

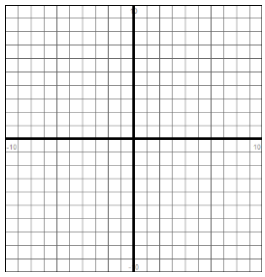
1. $f(x) = 2x + 3$



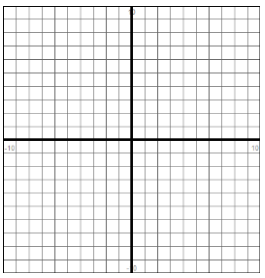
2. $h(x) = \frac{1}{2}(x-1)^2 + 3$



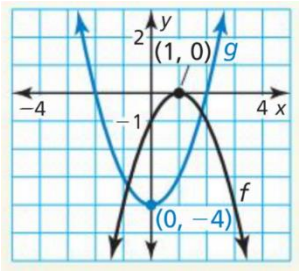
3. $f(x) = -|x+2| - 3$



4. A function g is a translation 3 units left and 4 units down, followed by a reflection in the x-axis of the graph of $f(x) = -3(x+2)^2$. Graph *f* and *g*.



5. Describe a transformation from the graph of *f* to the graph of *g*.



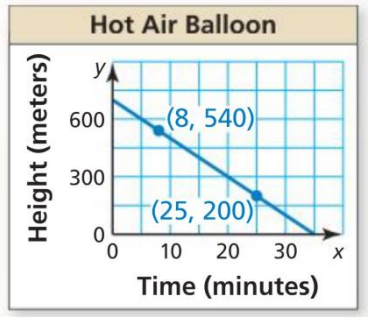
Write the function g whose graph represents the indicated transformations of the graph of *f*. Use technology to check your answer.

6. $f(x) = x^2$; vertical shrink by a factor of $\frac{1}{4}$, a horizontal shift 3 to the right, and a vertical stretch of 2.

7. $f(x) = 2x^2 + 4$; translation 5 units right, reflection in the x-axis, and a vertical shrink of $\frac{1}{2}$.

8. $f(x) = (x+1)^2$; translation 5 units right, translation 2 down, reflection in the x-axis, and a vertical shrink of $\frac{1}{2}$.

10. Use the graph to write an equation of the line.



11. The table shows the numbers of ice cream cones sold for different outside temperatures (in degrees Fahrenheit). Do the data show a linear relationship? If so, write an equation of a line of fit and use it to estimate how many ice cream cones are sold when the temperature is 60°F. Use the graphing calculator.

Temperature, *x*	54	65	72	83	91
Number of cones, *y*	92	104	115	129	144

12. $\begin{cases} x + 2y + z = 1 \\ 2x - 2y + 3z = -6 \\ 2x - 3y - 2z = 3 \end{cases}$

13. $\begin{cases} x + y + 2z = 7 \\ -2x + y + 3z = 4 \\ 3x + 2y - z = 1 \end{cases}$

14. $\begin{cases} 2x - y + 2z = -2 \\ x - 2y + 2z = -5 \\ 3x - 2y + 4z = -3 \end{cases}$