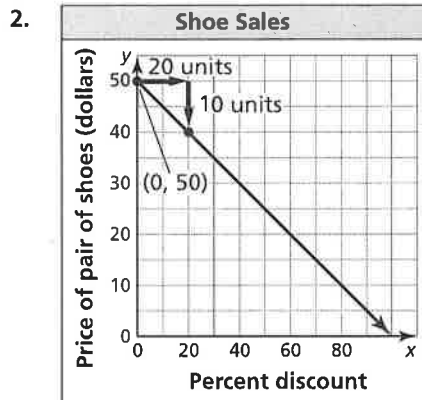
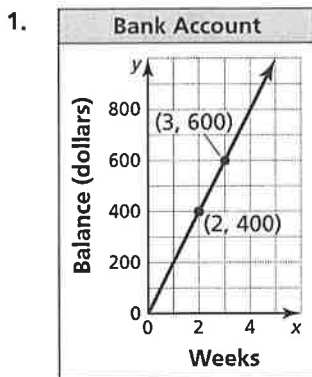


1 Chapter Test

Write an equation of the line and interpret the slope and y -intercept.



Solve the system. Check your solution, if possible.

3. $-2x + y + 4z = 5$
 $x + 3y - z = 2$
 $4x + y - 6z = 11$

4. $y = \frac{1}{2}z$
 $x + 2y + 5z = 2$
 $3x + 6y - 3z = 9$

5. $x - y + 5z = 3$
 $2x + 3y - z = 2$
 $-4x - y - 9z = -8$

Graph the function and its parent function. Then describe the transformation.

6. $f(x) = |x - 1|$

7. $f(x) = (3x)^2$

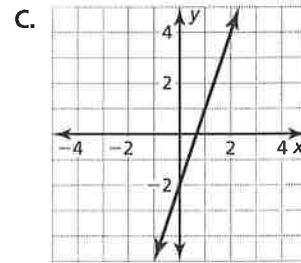
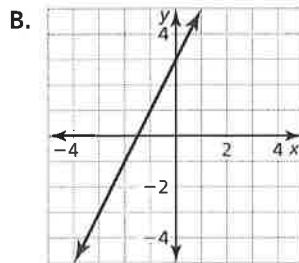
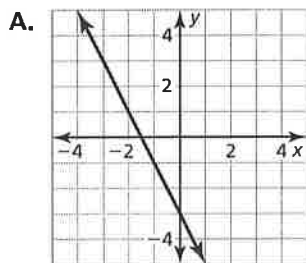
8. $f(x) = 4$

Match the transformation of $f(x) = x$ with its graph. Then write a rule for g .

9. $g(x) = 2f(x) + 3$

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

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



12. A bakery sells doughnuts, muffins, and bagels. The bakery makes three times as many doughnuts as bagels. The bakery earns a total of \$150 when all 130 baked items in stock are sold. How many of each item are in stock? Justify your answer.

Breakfast Specials

Doughnuts.....	\$1.00
Muffins	\$1.50
Bagels.....	\$1.20

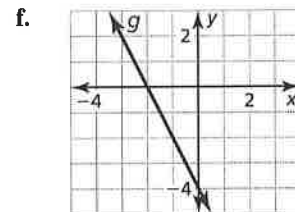
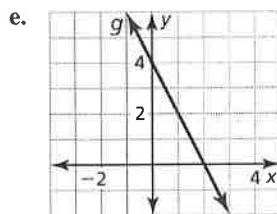
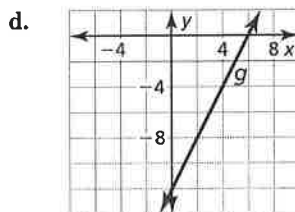
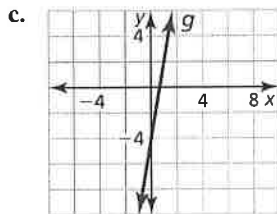
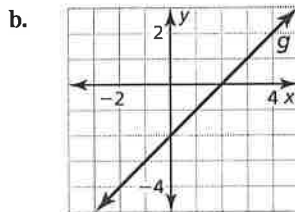
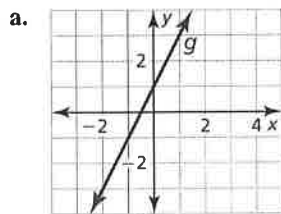


13. A fountain with a depth of 5 feet is drained and then refilled. The water level (in feet) after t minutes can be modeled by $f(t) = \frac{1}{4}|t - 20|$. A second fountain with the same depth is drained and filled twice as quickly as the first fountain. Describe how to transform the graph of f to model the water level in the second fountain after t minutes. Find the depth of each fountain after 4 minutes. Justify your answers.

1

Cumulative Assessment

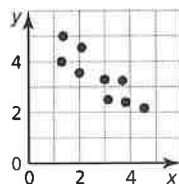
1. Describe the transformation of the graph of $f(x) = 2x - 4$ represented in each graph.



2. The table shows the tuition costs for a private school between the years 2010 and 2013.

Years after 2010, x	0	1	2	3
Tuition (dollars), y	36,208	37,620	39,088	40,594

- Verify that the data show a linear relationship. Then write an equation of a line of fit.
 - Interpret the slope and y -intercept in this situation.
 - Predict the cost of tuition in 2015.
3. Your friend claims the line of best fit for the data shown in the scatter plot has a correlation coefficient close to 1. Is your friend correct? Explain your reasoning.



4. Order the following linear systems from least to greatest according to the number of solutions.

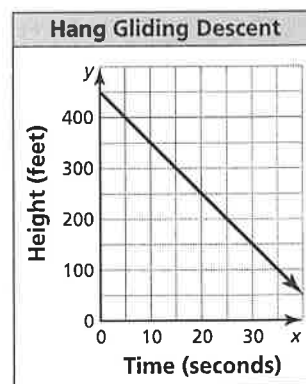
A. $2x + 4y - z = 7$
 $14x + 28y - 7z = 49$
 $-x + 6y + 12z = 13$

B. $3x - 3y + 3z = 5$
 $-x + y - z = 8$
 $14x - 3y + 12z = 108$

C. $4x - y + 2z = 18$
 $-x + 2y + z = 11$
 $3x + 3y - 4z = 44$

5. You make DVDs of three types of shows: comedy, drama, and reality-based. An episode of a comedy lasts 30 minutes, while a drama and a reality-based episode each last 60 minutes. The DVDs can hold 360 minutes of programming.
- You completely fill a DVD with seven episodes and include twice as many episodes of a drama as a comedy. Create a system of equations that models the situation.
 - How many episodes of each type of show are on the DVD in part (a)?
 - You completely fill a second DVD with only six episodes. Do the two DVDs have a different number of comedies? dramas? reality-based episodes? Explain.
6. The graph shows the height of a hang glider over time. Which equation models the situation?

- (A) $y + 450 = 10x$
 (B) $10y = -x + 450$
 (C) $\frac{1}{10}y = -x + 450$
 (D) $10x + y = 450$



7. Let $f(x) = x$ and $g(x) = -3x - 4$. Select the possible transformations (in order) of the graph of f represented by the function g .
- reflection in the x -axis
 - reflection in the y -axis
 - vertical translation 4 units down
 - horizontal translation 4 units right
 - horizontal shrink by a factor of $\frac{1}{3}$
 - vertical stretch by a factor of 3
8. Choose the correct equality or inequality symbol which completes the statement below about the linear functions f and g . Explain your reasoning.

x	$f(x)$
-5	-23
-4	-20
-3	-17
-2	-14

x	$g(x)$
-2	-18
-1	-14
0	-10
1	-6

$f(22)$ $g(22)$