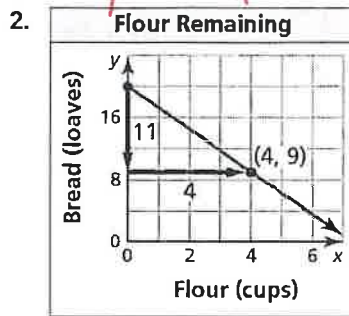
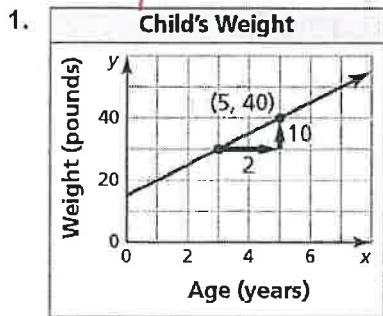


1.3 Extra Practice

In Exercises 1 and 2, use the graph to write an equation of the line and interpret the slope.

$y = 5x + 15$

$y = -\frac{11}{4}x + 20$



In Exercises 3 and 4, determine whether the data show a linear relationship. If so, write an equation of a line of fit. Then estimate y when $x = 15$ and explain its meaning in the context of the situation.

3.

Days, x	3	7	11	14	20
Number of tickets sold, y	76	164	252	318	450

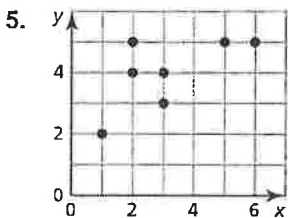
Yes, $y = 22x + 10$, $y = 340$
After 15 days, 340 tickets were sold

4.

Years after 2005, x	1	5	7	10	13
Bobcat population, y	241	302	320	321	296

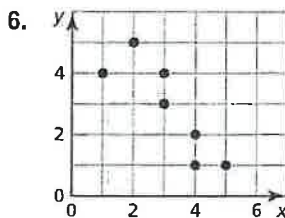
Not Linear

In Exercises 5 and 6, use technology to find an equation of the line of best fit for the data. Identify and interpret the correlation coefficient.



$y = 0.42x + 2.67$
 $r = 0.65$

Pts are somewhat close to the line



$y = -x + 6$
 $r = -0.85$

Pts are close to the line

1.4

Extra Practice

In Exercises 1–4, solve the system using the elimination method.

1. $3x - y + z = -1$
 $3x + 2y - 5z = -16$
 $3x + 3y + 2z = 6$ *(-1, 1, 3)*
2. $4x + 3y - 5z = -9$
 $6x + 6y - 3z = 6$
 $3x - 3y + 4z = 19$ *(2, 1, 4)*
3. $x - y - z = 5$
 $4x - 4y - 4z = 15$
 $3x - y - 4z = -2$ *(∅)*
4. $-x + y + z = 3$
 $x + y + 3z = 5$
 $3y + 6z = 12$ *(R)*

5. Describe and correct the error in the first step of solving the system of linear equations.

$$\begin{aligned} 5x + 3y - z &= 15 \\ -x + 2y + 3z &= 10 \\ 3x - 4y + 3z &= 8 \end{aligned}$$

X	$\begin{aligned} -15x - 9y - 3z &= 45 \\ 3x - 4y + 3z &= 8 \\ \hline -12 - 13y &= 53 \end{aligned}$
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15x + 9y - 3z = 45
18x + 4y = 53

6. Three orders are placed at a food truck. One sandwich, a juice, and a fruit cup cost \$9; two sandwiches, a juice, and two fruit cups cost \$16.50; and three sandwiches, two juices, and a fruit cup cost \$19. How much does each item cost?

In Exercises 7 and 8, solve the system of linear equations using the substitution method.

7. $2x - y = 6$
 $4x - 3y - 2z = 14$
 $-x + 2y - 3z = 12$ *(5, 4, -3)*
8. $6x + 3y - 9z = 10$
 $-2x - y + 3z = 3$
 $x - 2y - z = 1$ *(∅)*

9. Your friend claims that she has a bag of 30 coins containing nickels, dimes, and quarters. The total value of the 30 coins is \$3. There are twice as many nickels as there are dimes. Is your friend correct? Explain your reasoning.

No, the solution is 16.4 Nickels, 8.2 dimes, 5.4 quarters. Can't have part of a coin

10. Find the values of a , b , and c so that the linear system shown has $(2, -1, -4)$ as its only solution. Explain your reasoning.

$$\begin{aligned} x + 3y - z &= a \\ 2x - 5y + 2z &= b \\ -x + 8y - z &= c \end{aligned}$$

a = 3, b = 1, c = -6