

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES

Lesson 2: Creating Equations and Inequalities in One Variable

Assessment

Pre-Assessment

Circle the letter of the best answer.

- Mina bought a plane ticket to New York City and used a coupon for 15% off the ticket price. The total cost of her ticket, with the discount, was \$253.30. What equation could she use to find the price of the ticket without the discount?
 - $0.15x = 253.30$
 - $x - 0.15(x) = 253.30$
 - $x = 253.30 + 0.15$
 - $x + 0.15(x) = 253.30$
- Lucas bought a refrigerator. His total cost of \$1,331 included sales tax at the rate of 8% and an additional, untaxed delivery charge of \$35. How much sales tax did he pay?
 - \$72
 - \$106
 - \$120
 - \$96
- Your cell phone plan allows you 400 minutes to talk per month. So far this month, you have used 265 minutes and you have 7 days left on this month's plan. Which inequality could you use to determine how many minutes at most you can use per day so that you don't go over your monthly plan minutes?
 - $7x + 265 < 400$
 - $7x + 265 > 400$
 - $7x + 265 \leq 400$
 - $7x + 265 \geq 400$
- Sydney has a \$75 mall gift card. She wants to buy a sundress and a movie ticket. The movie ticket with tax costs \$11.50. The sales tax on the sundress will be 4%. How much can the ticketed price of the sundress be?
 - less than or equal to \$61.06
 - less than \$61.06
 - less than or equal to \$45.36
 - less than \$45.36
- A population of rabbits doubles every 4 months. If the population starts out with 8 rabbits, how many rabbits will there be in 1 year?
 - 128 rabbits
 - 64 rabbits
 - 32 rabbits
 - 16 rabbits

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES**Lesson 3: Creating and Graphing Equations in Two Variables****Assessment****Pre-Assessment**

Circle the letter of the best answer.

1. It costs \$80 to buy an air conditioner and about \$0.40 per minute to run it. Which equation models the total cost of using an air conditioner?

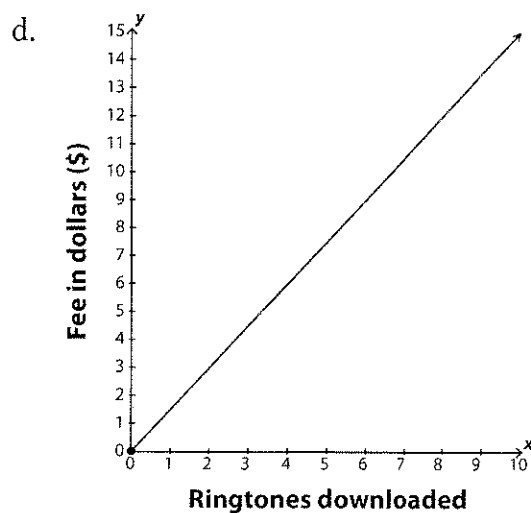
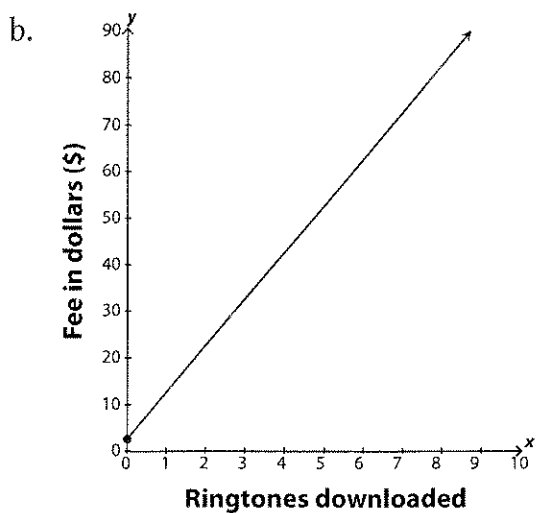
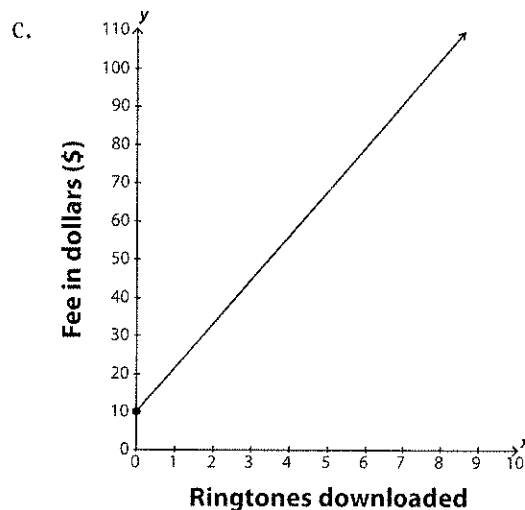
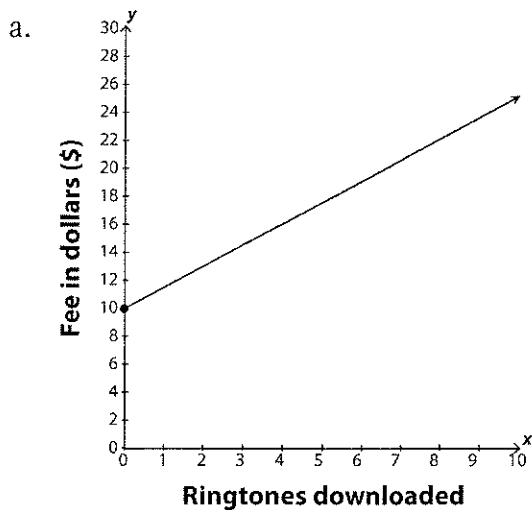
a. $x + y = 80.40$

c. $y = 80x + 0.40$

b. $y = 80.40x$

d. $y = 0.40x + 80$

2. A ringtone company charges \$10 a month for the service plus \$1.50 for each ringtone downloaded. What is the graph of the equation that models the total fees?

**continued**

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES**Lesson 4: Representing Constraints****Assessment****Pre-Assessment**

Circle the letter of the best answer.

- Given the equation $y = 5x - 7$, which point is a solution?
 - (1, 2)
 - (0, 7)
 - (-1, 2)
 - (-2, -17)
- Given the inequality $y \leq -3x + 6$, which point is NOT a solution?
 - (1, -3)
 - (0, -2)
 - (-1, -9)
 - (2, 3)
- Julia has \$6.50 to spend on peaches and apples at the farmer's market. She bought 4 peaches at \$0.75 each. How much money can she spend on apples? Determine which system of inequalities represents this situation.
 - $$\begin{cases} a + 4(0.75) \leq 6.50 \\ a \geq 0 \end{cases}$$
 - $$\begin{cases} a + 4(0.75) \leq 6.50 \\ a \leq 0 \end{cases}$$
 - $$\begin{cases} a + 4(0.75) \geq 6.50 \\ a \leq 0 \end{cases}$$
 - $$\begin{cases} a + 4(0.75) \geq 6.50 \\ a \geq 0 \end{cases}$$
- Your cell phone company charges \$29.99 a month plus \$0.25 for each text message sent. You have budgeted no more than \$35.00 for cell phone service each month. Given this situation, determine the minimum and maximum number of texts you can send without going over budget. Let x represent the number of texts.
 - $x < 20.04$
 - $x \geq 0$ and $x \leq 20.04$
 - $x > 0$ and $x < 20$
 - $x \geq 0$ and $x \leq 20$
- Your doctor recommends that you eat at least 46 grams of protein each day. One serving of peanuts contains 9 grams of protein, while one egg contains 6 grams of protein. Determine which system of inequalities represents the number of servings of eggs and peanuts you must eat in order to reach the minimum recommendation.
 - $$\begin{cases} 9x + 6y \leq 46 \\ x \leq 0 \\ y \leq 0 \end{cases}$$
 - $$\begin{cases} 9x + 6y \leq 46 \\ x \geq 0 \\ y \geq 0 \end{cases}$$
 - $$\begin{cases} 9x + 6y \geq 46 \\ x \geq 0 \\ y \geq 0 \end{cases}$$
 - $$\begin{cases} 9x + 6y \geq 46 \\ x \leq 0 \\ y \leq 0 \end{cases}$$

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES**Lesson 5: Rearranging Formulas****Assessment****Pre-Assessment**

Circle the letter of the best answer.

1. Solve the equation $8x + 4y = 12$ for y .

a. $y = 2x - 3$

c. $y = -3x + 2$

b. $y = -2x + 3$

d. $y = 3x - 2$

2. Solve the equation $-\frac{1}{5}y + 3x = 7$ for y .

a. $y = 15x - 35$

c. $y = 35 - 15x$

b. $y = -15x + 35$

d. $y = 35 + 15x$

3. The formula $P = 2l + 2w$ is used to calculate the perimeter of a rectangle. Solve this formula for l .

a. $l = \frac{2}{2w - P}$

c. $l = \frac{2w - P}{2}$

b. $l = \frac{2}{P - 2w}$

d. $l = \frac{P - 2w}{2}$

4. The formula $V = lwh$ is used to calculate the volume of a prism. Solve this formula for l .

a. $l = \frac{wh}{V}$

c. $l = \frac{V}{wh}$

b. $l = V - wh$

d. $l = wh - V$

5. The speed, v , of a point on the edge of a spinning disk is found using the formula $v = \frac{2\pi r}{T}$. Solve this formula for T .

a. $T = \frac{v}{2\pi r}$

c. $T = 2\pi r - v$

b. $T = \frac{2\pi r}{v}$

d. $T = v - 2\pi r$

UNIT 2 • REASONING WITH EQUATIONS AND INEQUALITIES**Lesson 2: Solving Systems of Equations****Assessment****Pre-Assessment**

Circle the letter of the best answer.

1. What is the solution to the system $\begin{cases} y = -2x + 4 \\ x - 5y = 2 \end{cases}$?

a. $\left(\frac{6}{11}, \frac{32}{11}\right)$

b. $(2, 0)$

c. There are infinitely many solutions to this system of equations.

d. There are no solutions to this system of equations.

2. What is the solution to the system $\begin{cases} x + 3y = 5 \\ 5x - 3y = 7 \end{cases}$?

a. $(2, 1)$

b. $\left(\frac{1}{2}, \frac{3}{2}\right)$

c. There are infinitely many solutions to this system of equations.

d. There are no solutions to this system of equations.

3. What is the solution to the system $\begin{cases} 2x - 3y = -28 \\ -6x + 9y = 84 \end{cases}$?

a. $(0, 0)$

b. $\left(3, \frac{34}{3}\right)$

c. There are infinitely many solutions to this system of equations.

d. There are no solutions to this system of equations.

continued