Name _____ Date _____ Class _____

LESSON 3-1

Problem Solving

Using Graphs and Tables to Solve Linear Systems

Solve.

1. After the lesson, Carl takes the wakeboarding class to the *Glass Cafe*. He pays $26 for 8 large and 4 small juice drinks. A large glass costs $1 more than a small glass.

   a. Write a linear system of equations to find the cost of each size drink.

   _____

   b. Write one equation at the top of each table and complete the table.

   c. What is the cost of each size drink?

   _____

x	***y***
1	
1.5	
2	
2.5	
3	

x	***y***
1	
1.5	
2	
2.5	
3	

2. Sandy rented a jet ski for $95 plus $15 per hour. Pauline rented a jet ski for $80 plus $20 per hour.

   a. Write a linear system of equations to find the number of hours for which the rental cost is the same.

   _____

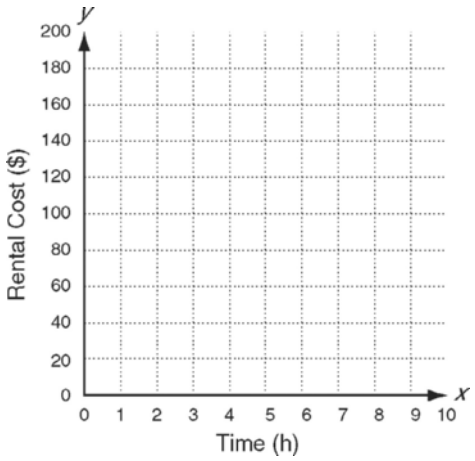
   b. Graph the system.

   c. For what number of hours would Sandy and Pauline pay the same to rent a jet ski?

   _____

   d. How much would it cost to rent the jet ski for this amount of time?

   _____



Choose the letter for the best answer.

3. Juan started with 50 gallons of water in his pool, and he is filling it at a rate of 10 gallons per minute. His next-door neighbor Sam started with 20 gallons of water in his pool, and he is filling it at a rate of 15 gallons per minute. Which system of equations could you use to find when the pools will contain the same amount of water?

   A $\begin{cases} y = 50 + 15x \\ y = 20 + 10x \end{cases}$ C $\begin{cases} y = 50 - 15x \\ y = 20 - 10x \end{cases}$

   B $\begin{cases} y = 50 + 10x \\ y = 20 + 15x \end{cases}$ D $\begin{cases} y = 50 - 10x \\ y = 20 - 15x \end{cases}$

stated as $\frac{-a}{b} \neq \frac{-c}{d}$, $-ad \neq -bc$, or $-ad + bc \neq 0$.

Problem Solving

1. a. $\begin{cases} 4x + 8y = 26 \\ x + 1 = y \end{cases}$

b.

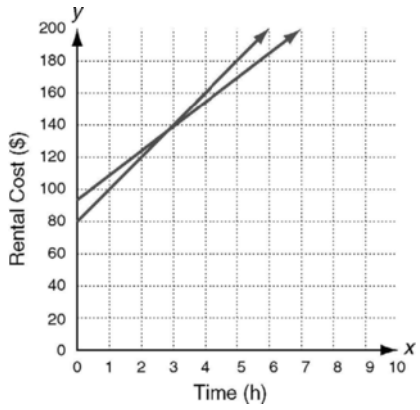
$4x + 8y = 26$	
x	y
1	2.75
1.5	2.50
2	2.25
2.5	2
3	1.75

$x + 1 = y$	
x	y
1	2
1.5	2.5
2	3
2.5	3.5
3	4

c. Small: \$1.50; large: \$2.50

2. a. $\begin{cases} y = 95 + 15x \\ y = 80 + 20x \end{cases}$

b.



c. 3 h

d. \$140

3. B

Reading Strategies

1. a; d
2. b
3. a; c
4. 5
5. 4
6. 6

LESSON 3-2

Practice A

1. a. $x = 4$

   b. $y = 1$

   c. (4, 1)
2. (3, 2)
3. (1, 5)
4. (–1, –3)
5. a. $\begin{cases} -12x + 15y = -21 \\ 12x - 16y = 24 \end{cases}$

   b. $y = -3$

   c. (–2, –3)
6. (4, –1)
7. (–3, 3)
8. (–1, 2)

Practice B

1. (10, 2)
2. (–3, –4)
3. (–4, –8)
4. (–5, 1)
5. (6, –3)
6. (–3, –2)
7. (8, 5)
8. (–1, 7)
9. (2, –3)
10. (16, –2)
11. (–12, 9)
12. (–3, –7)
13. a. $\begin{cases} d = 8.25 - 8h \\ d = 3h \end{cases}$

    b. 0.75 h or 45 min

Practice C

1. (–1.2, 4)
2. $\left(-3, -3\frac{1}{2}\right)$
3. $\left(8\frac{1}{4}, -2\right)$
4. $\left(-8\frac{1}{2}, 1\right)$
5. (–6, 11)
6. $\left(7, 3\frac{1}{2}\right)$
7. $\left(6, 7\frac{1}{2}\right)$
8. $\left(\frac{2}{5}, -\frac{4}{5}\right)$
9. $\left(9, -\frac{3}{4}\right)$
10. a. $\begin{cases} 4n + 2r = 23.5 \\ 2n + 4r = 18.5 \end{cases}$

    b. \$7.00