Name _____ Date _____ Class _____

Solve.

1. Carl pays $26 for 8 large and 4 small juice drinks. A large glass costs
   $1 more than a small one.

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

   **Solution:**

   Let $x$ = cost of small

   Let $y$ = cost of a large

   $4x + 8y = 26$

   $x + 1 = y$

| x | y |
|-----|------|
| 1 | 2.75 |
| 1.5 | 2.50 |
| 2 | 2.25 |
| 2.5 | 2.00 |
| 3 | 1.75 |

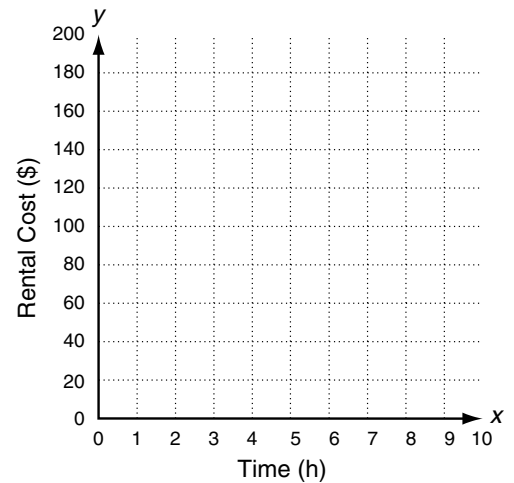| x | y |
|-----|-----|
| 1 | 2 |
| 1.5 | 2.5 |
| 2 | 3 |
| 2.5 | 3.5 |
| 3 | 4 |

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

   **c.** What is the cost of each size drink?

   $x = 1.5$ and $y = 2.5$ works for both equations.
   The cost of a small is $1.50 and the cost for a
   large is $2.50.

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.**

| x | y | x | y |
|---|---|---|---|
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |
|   |   |   |   |

   _____

   **c.** Graph the system.

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

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

**LESSON** **Problem Solving**

**3-1** *Using Graphs and Tables to Solve Linear Systems*

Solve.

**1.** Carl pays $26 for 8 large and 4 small juice drinks. A large glass costs $1 more than a small one.

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

   **Solution:**

   Let $x$ = cost of small

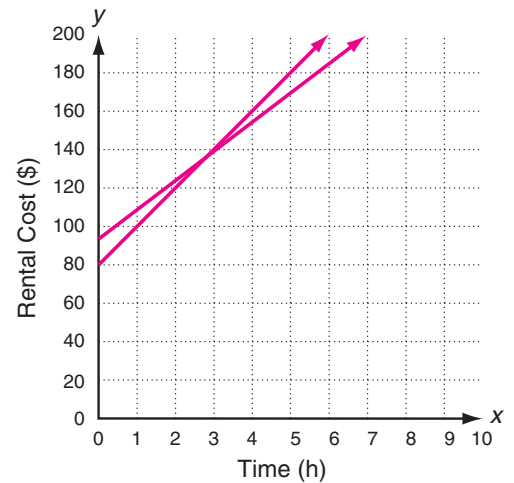   Let $y$ = cost of a large

   $4x + 8y = 26$

   $x + 1 = y$

| $4x + 8y = 26$ | |
|---|---|
| **x** | **y** |
| 1 | 2.75 |
| 1.5 | 2.50 |
| 2 | 2.25 |
| 2.5 | 2.00 |
| 3 | 1.75 |

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

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

   **c.** What is the cost of each size drink?

   $x$ = 1.5 and $y$ = 2.5 works for both equations. The cost of a small is $1.50 and the cost for a large is $2.50.

**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.**

| $y + 95 = 15x$ | | $y + 80 = 20x$ | |
|---|---|---|---|
| x | y | x | y |
| **0** | **95** | **0** | **80** |
| **1** | **110** | **1** | **100** |
| **2** | **125** | **2** | **120** |
| **3** | **140** | **3** | **140** |
| **4** | **155** | **4** | **160** |



   **c.** Graph the system.

   **d.** For what number of hours would Sandy and Pauline pay the same to rent a jet ski?    **3 h**

   **e.** How much would it cost to rent the jet ski for this amount of time?    **$140**

**Holt Algebra 2**