Test Chapter 8 Sections 1 through 5

1. Identify the domain and range of the following relation. Then tell whether it is a function.

<table>
<thead>
<tr>
<th>x</th>
<th>-2</th>
<th>-1</th>
<th>3</th>
<th>-5</th>
<th>-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>5</td>
<td>-2</td>
<td>5</td>
<td>-2</td>
<td>-2</td>
</tr>
</tbody>
</table>

Domain:

Range:

Is it a function?

2. Use a mapping diagram to represent the following relation. Then tell whether it is a function.

(-4, -3), (-3, 2), (0, 0), (1, -1), (2, 3), (3, 1), (3, -2)

Is it a function?

3. What test would you use to see whether a relation represented by a graph is a function?

Use that test and determine whether the given relation is a function.
4. Determine if the ordered pair \((-3, 1)\) is a solution of \(5x + 2y = -13\).

5. Determine whether \((-1, -17)\) is a solution of \(y = x + 16\).

6. Make a table of solutions for the given equation. Find at least three ordered pairs and use these to graph the equation.

\[ y = 3x + 4 \]
7. Write the given equation in function form. Then make a table of solutions by finding at least three ordered pairs. Then graph the equation using these ordered pairs.

\[ 8x + 4y = 20 \]

8. Identify the graph of the linear equation \( x = 5 \).
9. Describe the graph of the line $y = 7$. (In other words, what kind of line is this?)

10. Find the intercepts of the given equation.

$$3x + 8y = 24$$

11. Find the intercepts of $x = 3$.

12. Graph the following equation using intercepts.

$$5x + 5y = -10$$
For 13-15, find the slope of the line passing through the given points.

13. \((-2, 4)\) and \((6, 2)\)

14. \((1, -1)\) and \((7, -1)\)

15. \((0, 2)\) and \((3, 8)\)

16. Identify the slope and the \(y\)-intercept of the line with the given equation.

\[
y = \frac{-5}{3}x + 7
\]

17. Find the slope and \(y\)-intercept of the line with the given equation.

\[
-2x + 3y = 6
\]

18. Find the slope and \(y\)-intercept of the line with the given equation.

\[
y = -x - 2
\]
19. Find the slope and $y$-intercept of the line with the given equation. Use this information to graph the line.

\[ y = \frac{2}{3}x + 4 \]

20. Find the slope and the $y$-intercept of the given equation. Use this information to graph.

\[-3x + y = -5\]
21. What is the slope of a line parallel to the line $y = 5x + 25$?

22. What is the slope of a line perpendicular to the line $y = -3x + 9$?

23. Susan sells antique Persian rugs. Her profit is modeled by the equation $y = 35x - 50$ where $x$ is the number of rugs that she sells and $y$ is her profit. Find her profit if she sells 3 rugs.

**Extra Credit**

Find the value of $a$ that makes the ordered pair a solution of the given equation.

$$2x + 7y = -5 \ (a, 1)$$

What’s your favorite movie?