Name _____ Class _____ Date _____

Practice 4-3

Function Rules, Tables, and Graphs

Find the range of each function for the given domain.

1. $f(x) = -3x + 1; \{-2, -1, 0\}$
2. $f(x) = x^2 + x - 2; \{-2, 0, 1\}$
3. $h(x) = -x^2; \{-3, -1, 1\}$
4. $g(x) = -\frac{1}{2} \mid x \mid + 1; \{-2, -1, 1\}$

Model each rule with a table of values and a graph.

5. $f(x) = x + 1$
6. $f(x) = 2x$
7. $y = 3x - 2$
8. $f(x) = \frac{3}{2}x - 2$
9. $y = \frac{1}{2}x$
10. $f(x) = -\frac{2}{3}x + 1$
11. $g(x) = x^2 + 1$
12. $h(x) = -x^2 + 2$
13. $y = x - 3$

14. Suppose a van gets 22 mi/gal. The distance traveled $D(g)$ is a function of the gallons of gas used.

    a. Use the rule $D(g) = 22g$ to make a table of values and then a graph.

    b. How far did the van travel if it used 10.5 gallons of gas?

    c. Should the points of the graph be connected by a line? Explain.

Graph each function. Then find the domain and range.

15. $y = 4x + 2$
16. $f(x) = \mid -2x \mid$
17. $f(x) = -3x + 7$
18. $y = - \mid x \mid - 1$
19. $g(x) = 8 - \frac{3}{4}x$
20. $h(x) = \frac{2}{3}x - 7$
21. $f(x) = -\frac{2}{3}x + 6$
22. $y = x^2 - 2x + 1$
23. $f(x) = -\frac{1}{2}x + 3$
24. $y = -x^2 + 1$
25. $y = 9 - x^2$
26. $y = 2x^2 + x - 2$

Find the domain of each relation. Determine whether each relation is a function.

27. $y = 2x - 10$
28. $x = y^2 - 2$
29. $y = \frac{2x}{x + 1}$
30. $y = x^2 + 5$
31. $x = -3 \mid y \mid$
32. $y = -\frac{2}{x}$