Name_____Period_____Date_____

5-1 through 5-3 Review
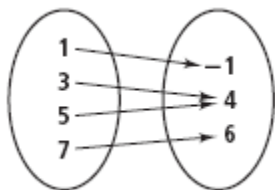
Find the domain and range of each relation.

1. $\{(-3,-7),(-1,-3),(0,-1),(2,3),(4,7)\}$ **2.** $\{(-5,-4),(-4,2),(0,2),(1,3),(2,4)\}$
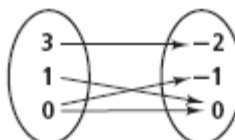
Determine whether each of the following relations is a function.

3. $\left\{(-4,-3),(-2,-2),(0,-1),\left(1,-\frac{1}{2}\right)\right\}$ **4.** $\{(0,0),(1,1),(4,2),(1,-1)\}$
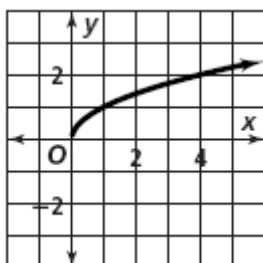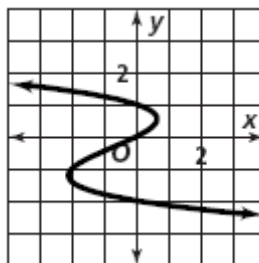
5.

6.

7.

8.

Evaluate each function rule for $x = 3$.

9. $f(x) = 2x - 15$

10. $g(x) = \frac{2}{3}x - 1$

Evaluate each function rule for $x = -\frac{1}{2}$.

11. $g(x) = -|x| + 3$

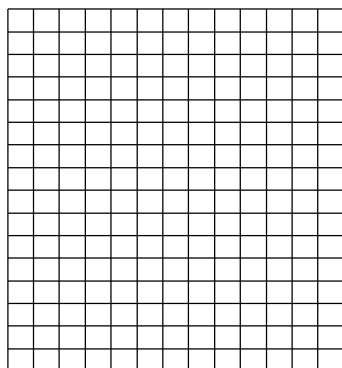**12.** $f(x) = -\frac{1}{2}x + 1$

Find the range of each function for the given domain.

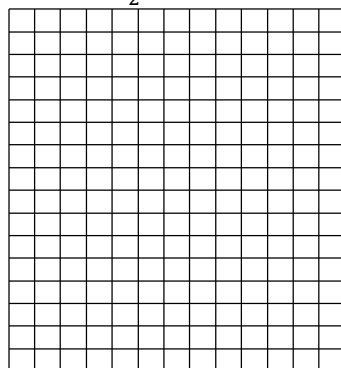**13.** $f(x) = -3x + 1;\ \{-2,-1,0\}$

14. $f(x) = x^2 + x - 2;\ \{-2,0,1\}$

Model each rule with a table of values and a graph.
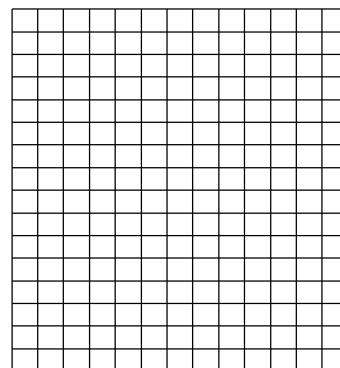
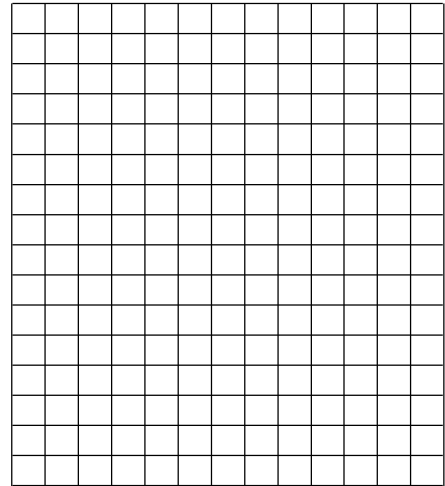**15.** $f(x) = x + 1$ **16.** $g(x) = \frac{1}{2}x - 1$ **17.** $h(x) = 2 - x^2$

18. 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.

19. The admission to a fairgrounds is $3.00 per vehicle plus $.50 per passenger. The total admission is a function of the number of passengers.

   a. Use the rule $T(n) = 3 + 0.50n$ to make a table of values and then a graph.

   b. What is the admission for a car with six people in it?

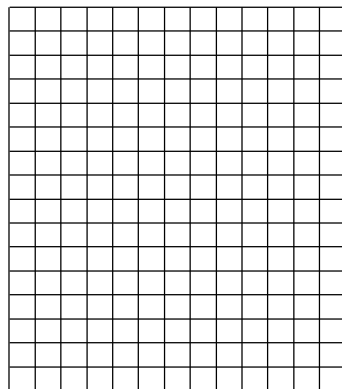   **c.** Should the points of the graph be connected by a line? Explain.
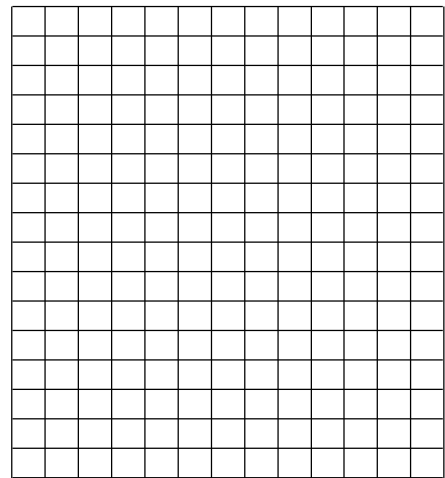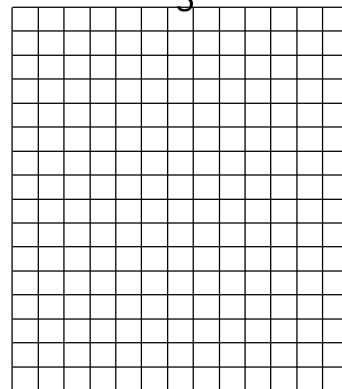
Graph each function.

20. $f(x) = 4x + 2$
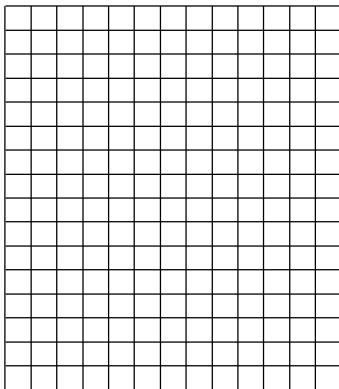
21. $f(x) = \left|-2x\right|$

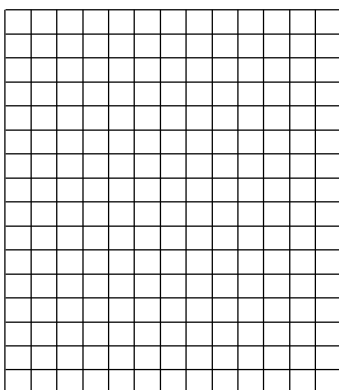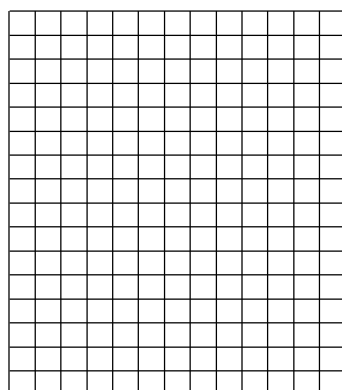**22.** $f(x) = -\dfrac{2}{3}x + 6$

23. $y = 9 - x^2$

24. $f(x) = x^2 - 2x + 1$

25. $f(x) = -\dfrac{1}{2}x + 3$