Name _____ Class _____ Date _____

Practice 2-1

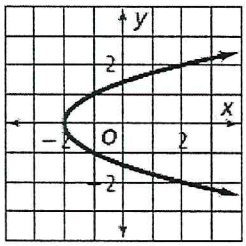
Relations and Functions

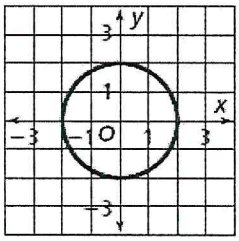
For each function, find $f(-2)$, $f\left(-\frac{1}{2}\right)$, and $f(3)$.

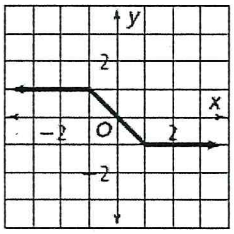
1. $f(x) = 5x + 2$

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

Use the vertical line test to determine whether each graph represents a function.

3. 

4. 

5. 

For each relation find the domain and range. Then explain whether the relation is a function or not.

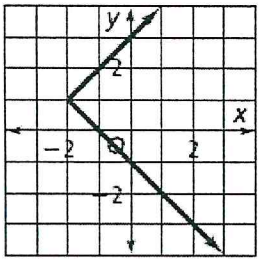
6. $\left\{(1,-2), \left(2,\frac{3}{4}\right), \left(3,3\frac{1}{2}\right), (5,9)\right\}$

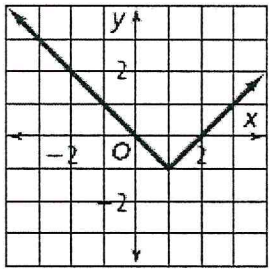
7. $\{(-3, 5), (0, -2), (0, 4), (1, -2)\}$

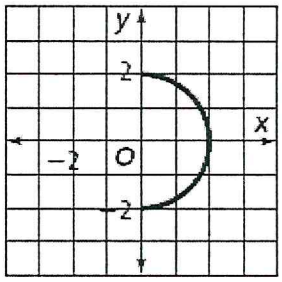
8. $\{(-1, 2), (2, 2), (3, 2)\}$

9. $\{(0.5, -1), (0.5, 0). (0.5, 1), (0.5, 3)\}$

Explain whether each graph represents y as a function of x.

10. 

11. 

12. 

Make a mapping diagram for each relation, and determine whether it is a function.

13. $\{(1, 2), (2, 3), (2, 4), (3, 5)\}$

14. $\{(-1, 1), (0, 0), (1, 1), (2, 4), (3, 9)\}$

Suppose $f(x) = -3x + 2$ and $g(x) = \frac{1}{2}x - 1$. Find each value.

15. $f\left(\frac{1}{3}\right)$

16. $3g(4)$

17. $\frac{g(-2)}{f(3)}$