

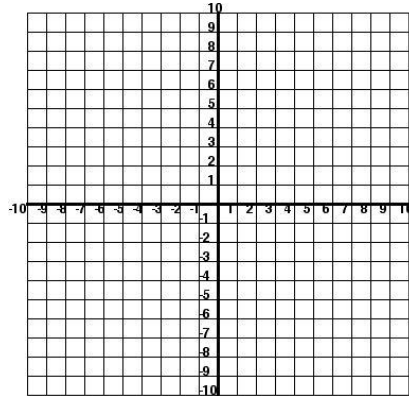
Graph each function

1. $y = -2|x - 3| + 2$

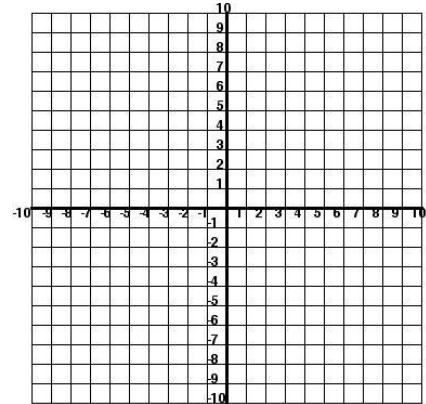
Vertex: _____

Domain: _____

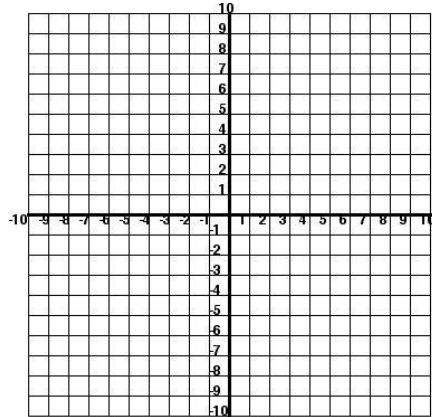
Range: _____



2. $f(x) = \begin{cases} x + 2, & \text{if } x > 1 \\ -x + 2, & \text{if } x \leq 1 \end{cases}$

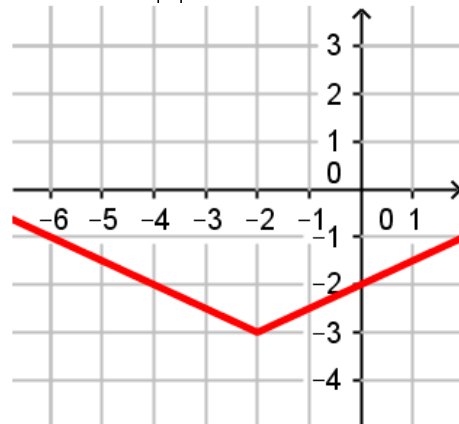


3. $y \leq -3|x + 1| - 4$



4. Given the graph, write the equation:

(Assume $y = |x|$ is the parent function.)



y= _____

Evaluate the following piecewise functions for the given domain.

5. $f(x) = \begin{cases} x^2 - 1, & \text{if } x \leq 0 \\ 2x - 1, & \text{if } 0 < x \leq 5 \\ 3, & \text{if } x > 5 \end{cases}$

6. $f(x) = \begin{cases} 5, & \text{if } x \leq -3 \\ -2x - 3, & \text{if } x > -3 \end{cases}$

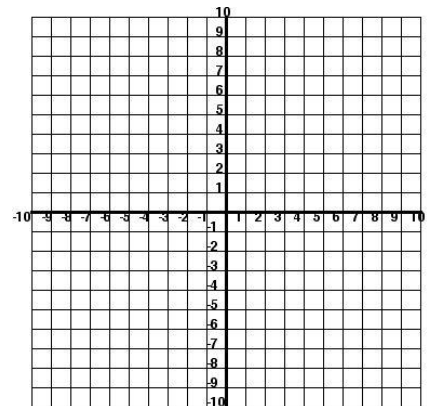
a) $f(-2) = \underline{\hspace{2cm}}$ b) $f(0) = \underline{\hspace{2cm}}$ c) $f(5) = \underline{\hspace{2cm}}$

a) $f(-4) = \underline{\hspace{2cm}}$ b) $f(0) = \underline{\hspace{2cm}}$ c) $f(3) = \underline{\hspace{2cm}}$

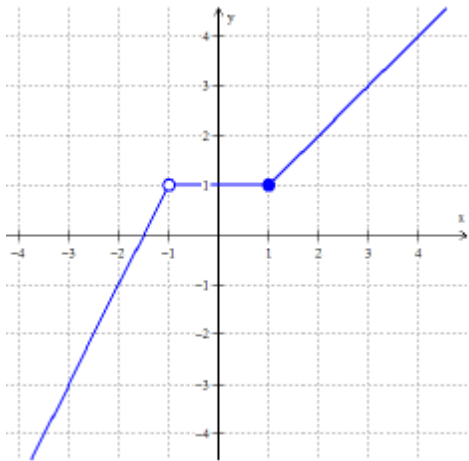
d) $2f(3) - f(6) = \underline{\hspace{2cm}}$

d) $f(x) = -11$

Sketch 6 there ---->



7. Evaluate the function using the given graph:



a. $f(-3) =$

b. $f(4) =$

c. $f(1) =$

d. $f(-1) =$

e. $f(0) =$

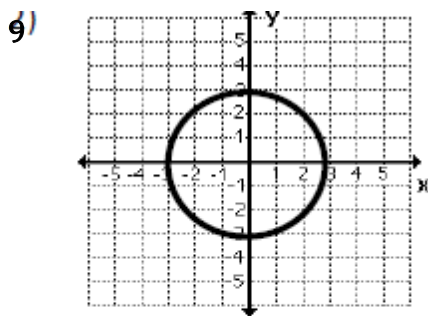
f. $f(x) = -1 ; x =$ _____

8. For the given functions, find each value.

$$f(x) = -5, \quad g(x) = x^2 + 2x - 1, \quad h(x) = 3x - 4$$

a. $f(3) =$ _____ b. $4g(-4) =$ _____ c. $2f(0) + g(-1) - 3h(8) =$ _____

Tell whether each graph below is a **function** or not by writing "yes" or "no".
Then determine the **domain** and **range** of each graph.

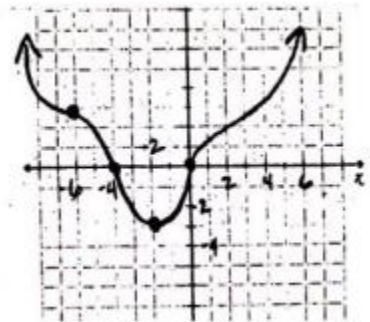


Function? _____

Domain: _____

Range: _____

10



Function? _____

Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Positive: _____

Solve each problem. **SHOW** your work and **box in** the final answer. Write the inequalities in interval notation and show the solution on a number line.

11. $|2x - 1| = 5$

12. $2|x + 4| - 6 = 10$

13. $|3x + 1| + 10 = 4$

14. $|3x - 7| = 5x - 4$

15. $2 + |x + 5| > 8$

16. $-4|3x + 2| \geq -16$

17. $\frac{|2x+1|}{2} - 3 < 6$

18. $|x + 8| < -6$

19. A packaging company has a tolerance of 0.3 oz for a bag of chips that is supposed to weigh 12 oz. Write and solve an absolute value inequality for the acceptable weights.