

Functions and Their Graphs (1.2,1.3)

Function:	Domain:
Range:	Critical Points (Relative Max. & Min.):
Even Function:	Odd Function:

Identifying Functions: Determine whether each relation is a function. Give the domain and range for each relation.

1) $\{(5,6), (5,7), (6,6), (6,7)\}$

2) $\{(-7,-7), (-5,-2), (-3,-2)\}$

Recognizing Functions: Determine whether each equation defines y as a function of x . Why?

3) $x^2 + y = 25$

4) $x^2 + y^2 = 16$

Evaluating Functions: Evaluate each function at the given values of the independent variable and simplify.

5) $g(x) = -x^2 + 10x - 3$

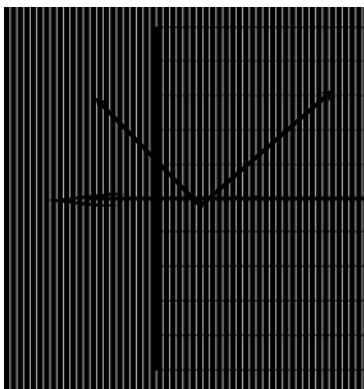
a. $g(-2)$ b. $g(x+2)$

6) $f(x) = \frac{4x^3 + 1}{x^3}$

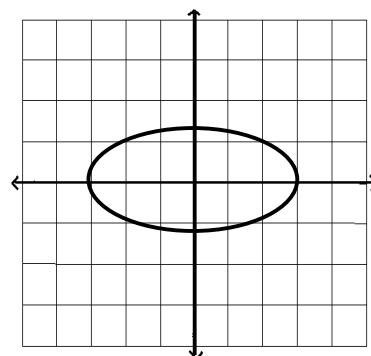
a. $f(-2)$ b. $f(-x)$

Identifying Functions Given a Graph: Which of the following graphs are functions? Why?

7)

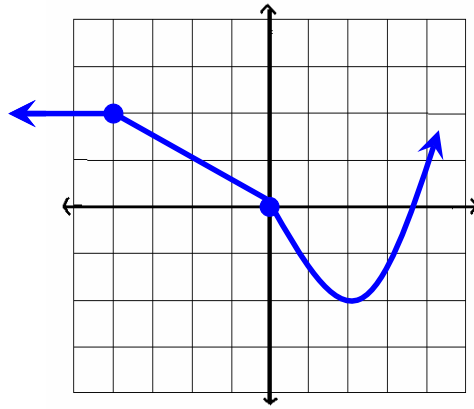


8)



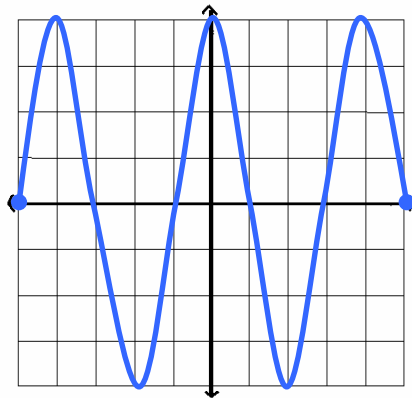
Evaluating a Graphic Function: Use the graph to determine the following.

9)



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|--|---|
| a) Domain: | g) intervals on which f is decreasing |
| b) Range: | h) intervals on which f is constant |
| c) x-intercepts: | i) the number at which f has a relative minimum |
| d) y-intercepts: | j) the relative minimum of f |
| e) $f(-4) =$ | k) the values of x for which $f(x) = 1$ |
| f) intervals on which f is increasing: | l) Is f even, odd, or neither? |

10)



- | | |
|---|---|
| a) Domain: | g) intervals on which f is decreasing |
| b) Range: | h) intervals on which f is constant |
| c) x-intercepts: | i) the number at which f has a relative maximum |
| d) y-intercepts: | j) the relative maximum of f |
| e) $f(-2) =$ | k) the values of x for which $f(x) = -4$ |
| f) intervals on which f is increasing | l) Is f even, odd, or neither? |