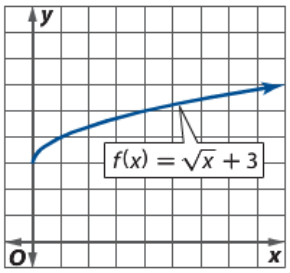
Pre-Calculus
REVIEW 1.1-1.4

Name _____

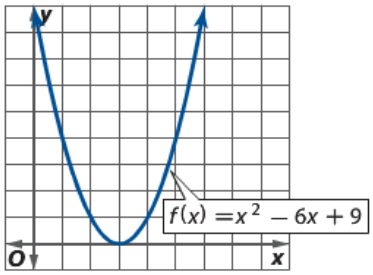
Domain & Range:

1. Find the domain and range of the graphs or equation. Use interval notation.

a)



b)

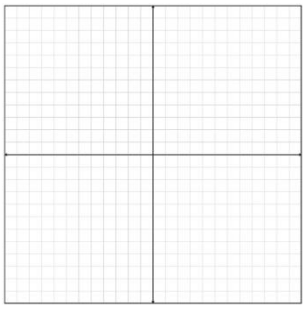


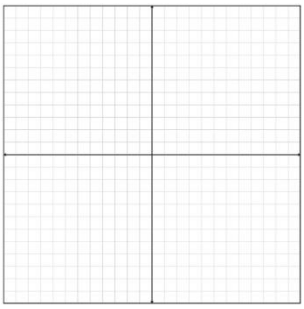
c) $f(x) = 2x^3 + x - 1$

Determining if a Relation is a Function:

2. Does the following situation represent a function? Why or why not?
During a baseball game, a batter pops up the ball to the infield. Let x stand for the time in seconds and y stand for the height of the ball.

3. Sketch a graph that is a function and a graph that is not a function.





Evaluating:

4. Use the given piecewise function, $f(x) = \begin{cases} x^2 + 3x \text{ if } x < 2 \\ x + 10 \text{ if } x \geq 2 \end{cases}$, to evaluate the following:

a) $f(-3)$ b) $f(1)$ c) $f(2)$ d) $f(5)$

5. Given $f(x) = -2x^2 + 7x - 1$, find:
a) $f(c)$ b) $f(c - 3)$

_y_-intercepts and Zeros:

6. Determine the y – intercept and zero(s) of the given functions:

a) $f(x) = x^3 - 16x$

b) $f(x) = 5\sqrt{x} - 4$

Continuity:

7. Determine whether the given function is continuous. If discontinuous, identify the type of discontinuity as *infinite*, *jump*, or *removable*.

a) $f(x) = x^2 - 36$

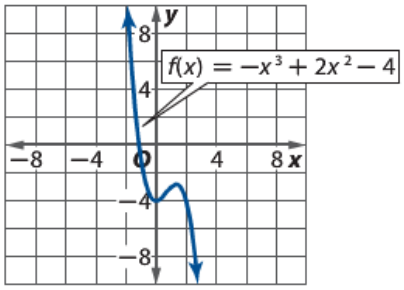
b) $f(x) = \frac{2}{x+5}$

c) $f(x) = \frac{x^2+x-12}{x-3}$

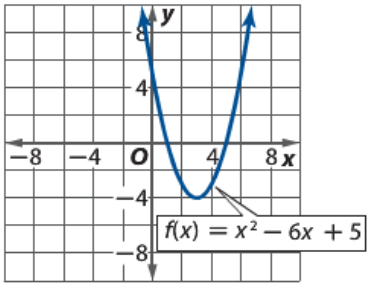
End Behavior:

8. Describe the end behavior for each function using limit notation.

a)



b)



c) $f(x) = -\frac{2}{x}$

Extremas:

9. Use $g(x) = x^3 + 2x^2 - 4x - 6$. State the intervals on which g(x) is increasing, decreasing, or constant and find the extremas. Round values to the nearest hundredth.

a) Increasing/Decreasing/Constant:

b) Relative Minimums:

c) Relative Maximums:

d) Absolute Extremas: