

NOTES: KEY FEATURES OF GRAPHS

DAY 2

Textbook Chapter 5.8

OBJECTIVE: To learn how to find the maximums, minimums, and intercepts on a graph!

VOCABULARY:

Turning Points: Point where the graph changes direction.

Relative Maximum: Turning point where the graph changes from increasing to decreasing.

Relative Minimum: Turning point where the graph changes from decreasing to increasing.

Absolute Maximum: Highest point possible on the graph.

Absolute Minimum: Lowest point possible on the graph.

1. Relative Max: _____

Relative Min: _____

Absolute Max: _____

Absolute Min: _____



2. Graph $3x^4 + x^3 - 10x^2 + 2x + 7$ using your calculator.
Then sketch the graph:

a. List any zeros of the function: _____

b. List any **relative maximums**: _____

c. List any **relative minimums**: _____

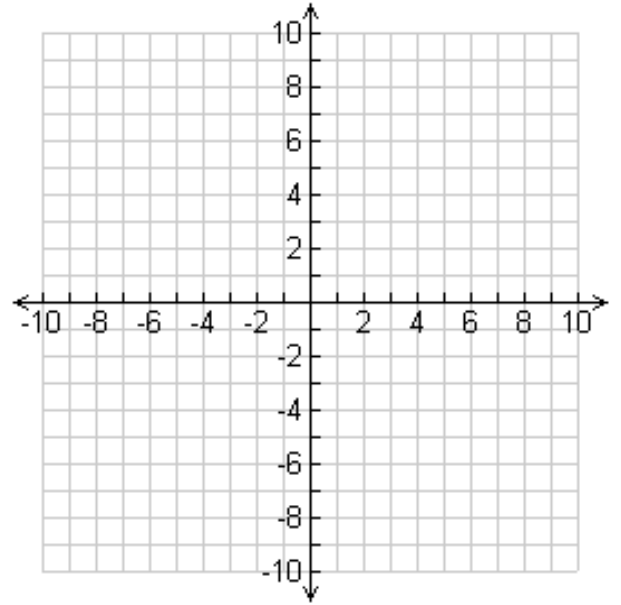
d. List any **absolute maximums**: _____

e. List any **absolute minimums**: _____

NOTES: INTERCEPTS

3. Given the Equation: $y = 3x + 4$

a) What is true about every point on the x-axis?
Find the x-intercept.



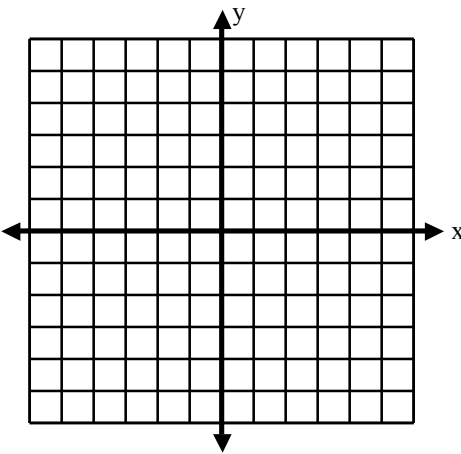
b) What is true about every point on the y-axis?
Find the y-intercept.

c) Can there be more than one x-intercept or y-intercept in a function? Why/Why not?

4. Using a calculator, graph each of the following.

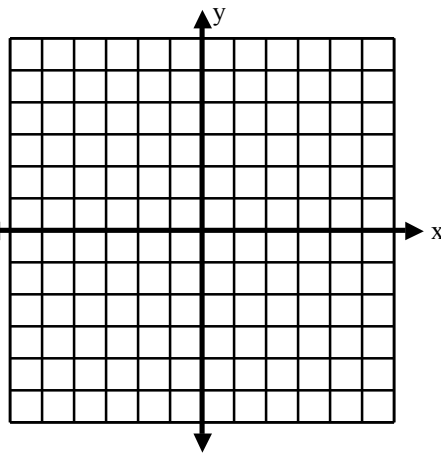
Estimate the y-intercept and the zeros of the function (if they exist).

a) $y = -\sqrt{x+3} + 2$



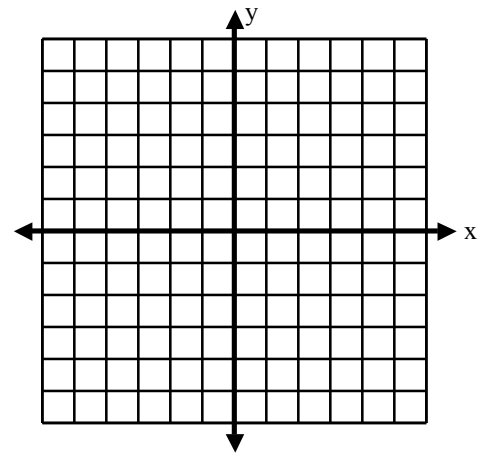
Y-intercept: _____
Zeros: _____

b) $y = (x-2)^3 - 3$



Y-intercept: _____
Zeros: _____

c) $y = 2(x+1)^2 - 4$



Y-intercept: _____
Zeros: _____

PRACTICE:

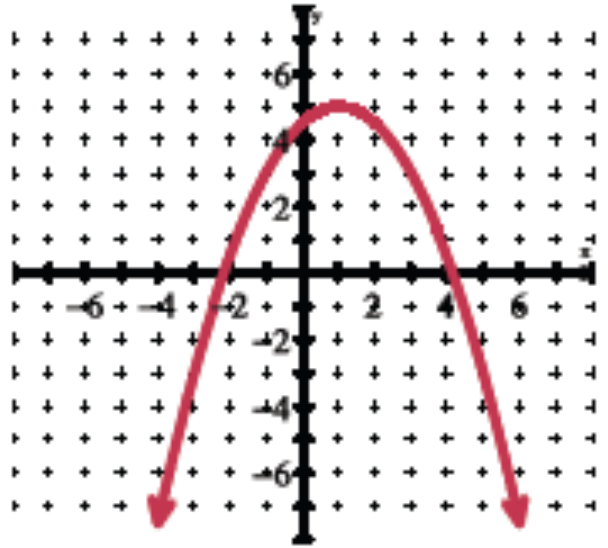
DAY 2

1. Relative Max: _____

Relative Min: _____

Absolute Max: _____

Absolute Min: _____



2. Graph $x^3 - 9x^2 + 8x + 60$ using your calculator. Sketch its graph below.

a. List any zeros of the function (in coordinate form): _____

b. List any **relative maximums** (in coordinate form): _____

c. List any **relative minimums** (in coordinate form): _____

d. List any **absolute maximums** (in coordinate form): _____

e. List any **absolute minimums** (in coordinate form): _____

3. Identify the slope and y-intercept of each equation.

a. $y = -\frac{2}{3}x$ slope _____ y-intercept _____

b. $f(x) = -x + 7$ slope _____ y-intercept _____

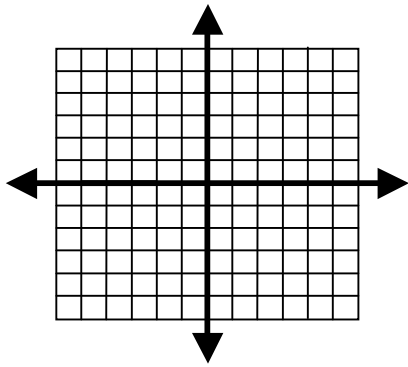
4. Identify the x-intercept and y-intercept for each equation.

a. $2x + 3y = 12$ x-intercept _____ y-intercept _____

b. $-7x - 2y = 14$ x-intercept _____ y-intercept _____

Graph each line.

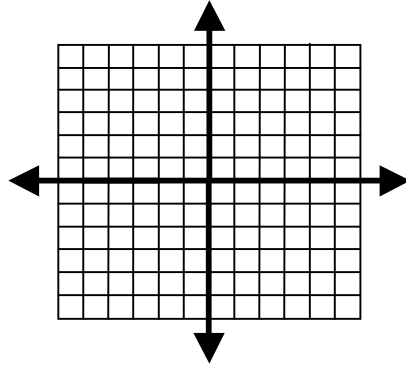
5. $y = -2x + 1$



x-intercept: _____

y-intercept: _____

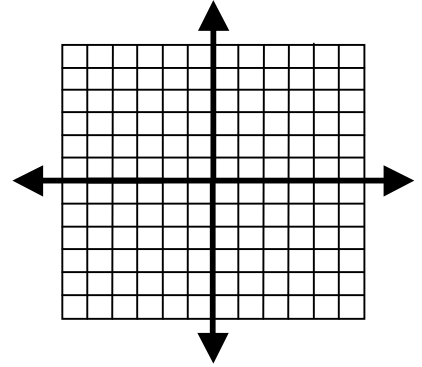
6. $4y + 3x = 12$



x-intercept: _____

y-intercept: _____

7. $x = 3$



x-intercept: _____

y-intercept: _____