Polynomial Test Review

Solutions will be at mskmath.com

If you need more examples, finish your online quiz (or redo it!) and homework, you have lots of them there!

YOU MUST BE ABLE TO FACTOR!!!! (1.1)

- GCF, sum and difference of cubes/squares, 3 term, 4 term, etc.
  - No extra examples, look over your bonus point quiz, the 50 question hw assignment, the other assignments that required factoring. You've had lots of practice so far ☺

Polynomial Operations (1.2)

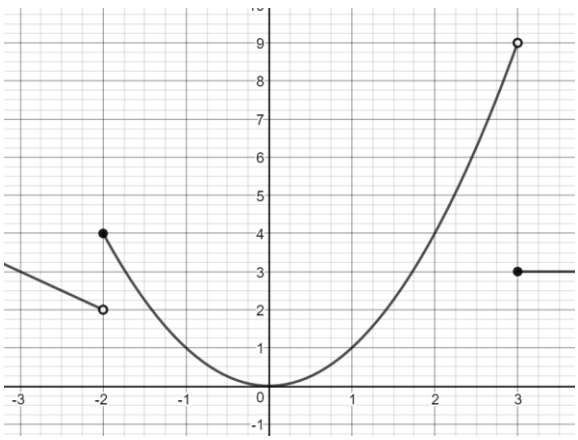
- Be able to add, subtract, multiply, and use both synthetic and long division
  - Polynomial operations homework evens for extra practice
- Identify the degree and leading coefficient of a polynomial (and the corresponding end behavior)
  - ex: $y = -3x^7 + x^5 - 3x^2 + 2$
  - ex: $y = 2x(x-4)^2(x+2)^3(x-3)^4$

Parent Functions & Symmetry (1.3)

- Know ALL your parent functions, including their domain & range, symmetry, and increasing/decreasing.
- Identify whether functions are EVEN (symmetric over the y-axis), ODD (symmetric about the origin), or NEITHER.

Piecewise Functions (1.4 and 1.5)

- Be able to graph, evaluate, and write the equation for piecewise functions
  - Ex: Graph the function $\begin{cases} 2x+1 & x<-2 \\ x^2-1 & -2\le x<3 \\ x^3 & x>3 \end{cases}$
  - Ex: Use the function $\begin{cases} |3x-2| & x\le -1 \\ x^2 & -1<x<2 \\ 4 & x\ge 2 \end{cases}$ to evaluate f(-2), f(-1), f(0), f(2) and f(7)
  - Write a piecewise function for the graph:

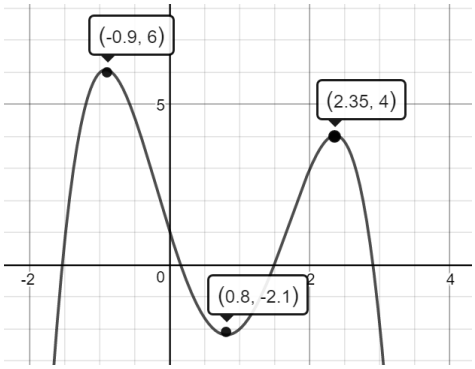


Graphing Polynomials (1.6)

- Know end behavior, x and y-intercepts, and multiplicity of 0's
  - Ex: Graph
    - 1. $P(x) = -2x^3 - x^2 + x$
    - 2. $P(x) = x^5 - 9x^3$
    - 3. $P(x) = -2(x-1)(x-2)^2(x+1)^3$

Graph Attributes (1.7)

- Identify relative minimums/maximums, intervals where graphs are increasing/decreasing, and end behavior
  - Ex:



Using a Calculator (1.8)

- Be able to find minimums, maximums, intervals where the graph is increasing/decreasing, end behavior, intercepts, and use these things to solve word problems with applications
  - Look over your previous word problem homework
  - Ex: $f(x) = x^4 - 3x^3 - 3x^2 + x - 2$
  - Ex: $f(x) = -x^3 - 4x^2 - x + 3$

You got this!!