**Polynomial Test Review**

Solutions will be at mskmath.com

If you need more examples, look back at your old quizzes and homework, you have lots of them there!

*YOU MUST BE ABLE TO FACTOR!!!! (7.1)*

* 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 (7.2)*

* 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 = -3x7 + x5 - 3x2 + 2
	+ ex: y = 2x(x-4)2(x+2)3(x-3)4

*Factoring with Synthetic Division (7.3)*

* Use the rational zero theorem to find *possible* rational zeros
	+ Include positive and negative
	+ P/Q where P- factors of constant term, Q- factors of leading coefficient
	+ ex: Find the possible rational zeros for the polynomial 4x4 – 7x3 – 4x + 12
* Test numbers with synthetic division. If you get 0 as a remainder, the number in the box is a zero of the polynomial and x-c is a factor of the polynomial. Continue until you can factor the remaining polynomial or use the quadratic formula
	+ Ex: If 3 is a zero of x3 + 3x2 – 10x – 24, factor completely
	+ Ex: Factor completely: x3 – x2 – 8x + 12
	+ Ex: Find the zeroes of: x4 – 5x2 + 4

*Piecewise Functions (7.4)*

* Be able to graph, evaluate, and write the equation for piecewise functions
	+ Ex: Graph the function 
	+ Ex: Use the function to evaluate f(-2), f(-1), f(0), f(2) and f(7)
	+ Write a piecewise function for the graph on the back:



*Graphing Polynomials (7.5)*

* Know end behavior, x and y-intercepts, and multiplicity of 0’s
	+ Ex: Graph
		- 1. P(x) = -2x3 - x2 + x
		- 2. P(x) = x5 - 9x3
		- 3. P(x) = -2(x-1)(x-2)2(x+1)3

*Graph Attributes (7.6)*

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

*Using a Calculator (7.7)*

* 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) = x4 – 3x3 – 3x2 + x – 2
	+ Ex: f(x) = -x3 – 4x2 - x + 3