MAT 099 Homework 3.2 – 3.7

Due February 20th Name_____

1. **3.2** Let $f(x) = x^2 - 2x$. Evaluate and simplify the following:

   a. $f(2)$

   b. $f(-3)$

   c. Bonus $f(x+3)$

2. **3.3** Sketch the graph of each of the following linear functions. Include any *x*- or *y*- intercepts, and if the intercepts are *all* you label on your graph, that's just fine with me! BETTER than fine!

   a. $f(x) = 2x - 3$

   b. $f(x) = 7$

3. **3.4** What is the slope of the line $7x + 2y = 13$?

4. **3.5** Find an equation of the line through $(-2,1)$ and $(5,-3)$ in *two* ways:

   a. Slope-Intercept Method

   b. Point-Slope Method

5. **3.5** What is the slope of any line that is parallel to the line $y = 2x - 3$? _____

What is the slope of any line that is perpendicular to the line $y = 2x - 3$? _____

On the test, you can expect to be asked to *build the equation* of a line that's perpendicular/parallel, and passes through a particular point. Not much room, here.

6. **3.6** Graph the piecewise-defined function $f(x) = \begin{cases} -2x - 1 & \text{if } x \le -1 \\ x^2 - 1 & \text{if } x > -1 \end{cases}$

7. Sketch the graph of $g(x) = \sqrt{2 - x} + 3$, starting with $f(x) = \sqrt{x}$ as your 1st graph, and ending with $g(x)$ in your final (4th) graph.