

Math 111 Quiz #3
April 19, 2011

Name: _____

Show all work and answers on a separate sheet. Simplify your answers as much as possible. No calculators.

1. (3 pts.) Graph the following piecewise function on a nice set of axes. $y = \begin{cases} x^2 & \text{for } x \leq 2 \\ -3 + x & \text{for } x > 2 \end{cases}$

(Be sure to put a scale and label your axes.)

2. Consider the functions $f(x) = 3x^2 + 7$ and $g(x) = \sqrt{x-1}$ for parts (a)-(c) below.

(a) (1 pt.) Find $g(g(5))$.

(b) (2 pts.) Find a formula for $f(g(x))$.

(c) (2 pts.) Given $y = g(x)$ above, find a formula for $x = g^{-1}(y)$.

3. (2 pts.) Find the x -intercept(s) of the $y = 2x^2 + 2x - 24$. (Write your answer as a point or points.)

Note: Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$