Quiz 3

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. Consider the function $f(x) = 6(x + 1)^2 + 1$.

   (a) [1] (WebHW5 #5) Find the coordinates of the vertex and determine if it is a minimum or maximum.
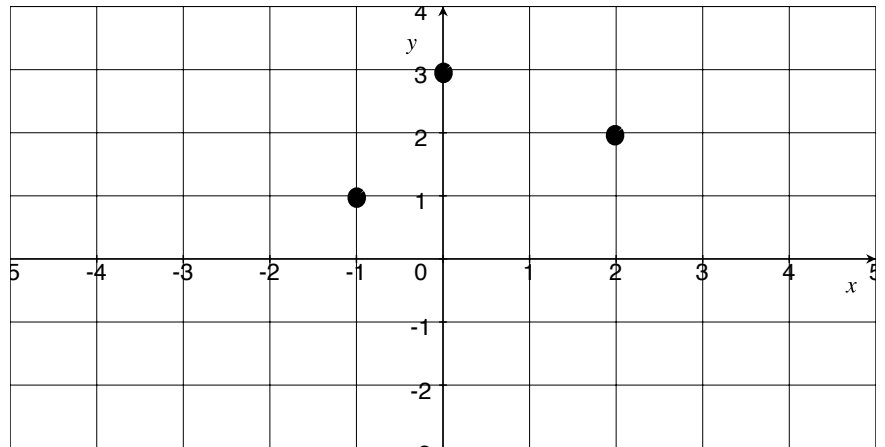
   (b) [2] (§3.4 #67) Find the roots of f.

2. Evaluate the expressions:

   (a) [1] (§3.4 #21) $\frac{1}{3}i - (\frac{1}{4} - \frac{1}{6}i)$.

   (b) [2] (WebHW6 #4) $\frac{4 - 7i}{1 - 4i}$.

3. (Inverse Wks) Let n be the function defined by the following graph to the right:

(a) [1] (Inverse Wks) Does n have an inverse function? Why or why not?

(b) [1] (WebHW6 #6) Find $n^{-1}(3)$ if possible.

4. [2] (WebHW5 #8) A manufacturer finds that the revenue generated by selling x units of a certain commodity is given by the function $R(x) = 60x - 0.2x^2$, where the revenue $R(x)$ is measured in dollars. What is the maximum revenue, and how many units should be manufactured to obtain this maximum?

Note: guess and check is *not* the way to get credit for this problem.