

Math 165 (Chris Kurth)
Spring 2008
Quiz 7

Show all work. Answers without work will not receive credit.

1. (10 points) Sketch the graph of the function $f(x) = \frac{1}{1+x^2}$,
clearly indicating asymptotes, where it is increasing, decreasing, concave up, concave down, etc.

2. (10 points) A farmer wants to fence off three identical adjoining rectangular pens, each with 300 square feet of area. What should be the width and length of each pen so that the least amount of fence is required?

3. (Bonus) Suppose $f(x) = x^2 + x + 1$ and $g'(x) = f'(x)$. If $g(1) = 5$, what is $g(x)$?