MATH 155 Review WS 2

Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page.

Name and section: _____

Instructor's name: _____

1. (3, probl. 2) Find the linear approximation to $f(x) = \sqrt{x^2 + 3}$ at $x_0 = 1$.

2. (3, probl. 3) Use linear approximation to estimate $\sqrt[3]{7.96}$.

3. (3, probl. 18) Sketch the graph of $f(x) = \frac{x}{\sqrt{x^2+2}}$ labeling all important points.

4. (3, probl. 22) Find the absolute extrema of $f(x) = x^2 e^{-x}$ on $[0, 4]$.

5. (3, probl. 27) Sketch a graph of a function with $f'(x) > 0$ for $x \neq 0$, $f'(0)$ undefined, $f''(x) > 0$ for $x < 0$ and $f''(x) < 0$ for $x > 0$.

6. (3, probl. 38) Sketch a graph of $f(x) = \frac{4}{x^2-1}$ and label all important features.