

Name _____

Homework 12
Section 3.9

1. (5) Determine the local linearization of $f(x) = \frac{1}{2 - 3x}$ near $x = 0$.

2. (5) Determine the local linearization about $x = -1$ for $f(x) = x + \ln(x^2 - x)$.

3. (5) Determine the local linearization of $f(x) = (1+x)^k$ near $x = 0$. Use the linearization (i.e. not a calculator) to estimate the square root of 1.32.

4. (5) Determine the best linear approximation of $g(x) = 6x + \sin(2x)$ near $x = \frac{\pi}{6}$.