

Math 1a. §4.8 Worksheet
Newton's Method

Fall 2005

1. Use Newton's method to estimate $\sqrt[3]{100}$ with an initial guess of $x_1 = 4.5$.

2. Let $f(x) = 2x^3 - 3x^2 - 12x + 2$. This function has three distinct real roots.

(a) Estimate the largest root using an initial guess of $x_1 = 3$.

(b) Estimate the largest root using an initial guess of $x_1 = 2.1$.

(c) Estimate the largest root using an initial guess of $x_1 = 1.9$.

(d) Estimate the largest root using an initial guess of $x_1 = 2$.

3. Apply Newton's method to find the root of $f(x) = x^3 - 6x^2 + 7x + 2$ with an initial guess at $x_1 = 1$. What happens?