

Math 180
Spring 2010

Name _____

Homework #12
Due Tuesday, May
No late papers accepted! No excuses!

1. Use Newton's Method to find the two negative zeroes of $f(x) = x^3 - 3x - 1$ to five decimal places.

Iterative formula _____

1st negative zero

2nd negative zero

x_0 _____

x_0 _____

x_1 _____

x_1 _____

x_2 _____

x_2 _____

x_3 _____

x_3 _____

Final Answer:

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2. Find the following limits.

a) $\lim_{x \rightarrow 0} \frac{\tan x}{x + \sin x}$

b) $\lim_{x \rightarrow 0} \frac{3^x - 1}{x}$

c) $\lim_{x \rightarrow 0^+} \left(e^{-\frac{1}{x}} \ln x \right)$

d) $\lim_{x \rightarrow \infty} \left(\sqrt{x^2 + x + 1} - \sqrt{x^2 - x} \right)$