

Due: Wednesday 21 November at 5pm in Beth's box

SECTION 4.8

For all Newton's Method problems, DO NOT write down all your calculations on the homework you turn in to us. It is sufficient to write down:

$f(x)$, $f'(x)$, your expression for x_{n+1} (as in box #2 at the bottom of page 335), your x_1 , then all subsequent approximations. See examples 2 and 3 or your notes as a model.

Problem A: Use Newton's Method to approximate $\sqrt[3]{70}$ correct to six decimal places. Pick your first guess to be the nearest integer.

NOTE: To use Newton's Method, you have to pick a function. If your function has the number $\sqrt[3]{70}$ in it, you are missing the point of Newton's Method and doing the problem incorrectly. That is, the assumption here is that you do not have any good decimal representation of $\sqrt[3]{70}$, therefore it cannot be in your function.

Problem B: Use Newton's method to find the x -coordinate of the absolute maximum of the function $f(x) = x \cos x$ on the interval $[0, \pi]$. Your answer should be correct to six decimal places.

SECTION 4.9 #8,28,44,72