

Thursday, Nov 13 2003

Closed book. Closed notes. NO CALCULATORS. You may only use Excel. Please write very legibly. You may use the back of the sheet for extra space. Mark your scratch work by circling it and writing “Do not grade” on it.

1. Open Excel. In the first row, create the integers from 1 to 100. After doing so, explain in 20 words or less how you did it.
2. In each column, the number that you created in the first row, use it as the initial point x_0 for Newton's Method to find a root of the function $f(x) = x^2 + x - 0.2$, accurate to at least five decimal points.
3. Starting with each of 1, 50, and 100, how many iterations does it take to reach the root approximation accurate to five decimal points? (It's OK if your answers are off by 1 or 2.) Write your answers in the space provided below.
1:
50:
100: