Name:_____

Evaluation 9

Introductory Programming
Fall 2005

For this evaluation, please write a draft of your program in the space below; that is, don't try to get it working (yet).

1. Write a function called `mysqrt` that takes a number as an input variable and that returns the square root of the number computed using 5 iterations of Newton's method.

2. Write a function called `testsqrt` that takes a vector as an input variable and that computes the square root of each of the elements using both `mysqrt` and the MATLAB function `sqrt`.

   For each element in the list, the function should print the relative error, which is

   $$\frac{estimate - actual}{actual}$$

   where *estimate* is the estimated root computed by Newton's method and *actual* is the "actual" value computed by the nice people in Natick.

   The output of your function should look like this (I've taken out some of the spaces):

```
>> t = 10:10:30

t =    10    20    30

>> testsqrt(t)

rel =   1.5834e-09

rel =   9.5303e-07

rel =   1.4753e-05
```

3. Once you have a pretty solid draft of the program, you can either (1) show it to me and I will make suggestions, or (2) type it in and get it working. I recommend putting the two functions in two separate files named `mysqrt.m` and `testsqrt.m`.