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INTRODUCTION

Successive approximation is a problem-solving method where you try to guess the right answer to a problem and then check your guess. If the guess is good enough, you're done. Otherwise, you keep improving your guess in small increments and checking it, getting closer and closer to the right answer, until you determine that the guess is good enough. For the first 3 problems of this problem set, we will look at Newton's method, which uses successive approximation to find the roots of a function.

We will also have some fun with Python, and get some practice using strings and string operations. We would like you to implement the word game hangman as a 1-player game against the computer. We will do this in the final part of this problem set.

GETTING STARTED

Download and save

1. Problem Set 3 zip file (/static/content-mit-600x~2012_Fall/files/templates/ProblemSet3.b5b9ed109b61.zip)

This is a zip file of all the skeleton code you'll be filling in. Be sure to save *all* the files in this zip folder -

`ps3_newton.py`, `ps3_hangman.py`, and `words.txt` - in the **same folder**. We recommend creating a new folder in your Documents folder called 6.00, and inside the 6.00 folder, creating a separate folder for each problem set. If you don't follow this instruction, you may end up with issues because the files for this problem set depend on one another.

2. Opening a zip file:

- On Windows: Windows XP instructions (http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/cf_extract.mspx?mfr=true); Windows 7 instructions (<http://windows.microsoft.com/en-US/windows7/Compress-and-uncompress-files-zip-files>).
- On Mac: Click on the zip file to download it. The folder should automatically uncompress in your Downloads folder. You can move the uncompressed folder to the folder where you keep your 6.00x documents.
- On Linux: This will depend on your distribution. If you are having trouble, you can upload the zip file to Google Docs and double-click on it - Google Docs will extract the files for you.

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