APSC 1001 HW4 Due: 10/23/15

1: For Loop

Fibonacci numbers describe a series of numbers where each entry is the sum of the previous two entries. The most famous example starts with 0 and 1 and looks like this: [0 1 1 2 3 5 8 13 21 ...]. However, a series of Fibonacci numbers can begin with any two values.

(a) Create a function that takes as input two values and outputs a vector with the first 10 values in the Fibonnaci sequence beginning with the input values.

(b) Create a script that tests your function with the input (4,6).

2: While loop

A converging infinite series is one whose terms sum to a finite value. One mathematically interesting example is the following:

$$\sum_{n=1}^{\infty} \frac{1}{n^2} \approx \frac{\pi^2}{6} \tag{1}$$

(a) Write a script which calculates how many terms are needed to approximate the limit within an error of 10^{-6}. Be sure to print out the total number of terms to the command window.

Directions Both questions should be answered in a single script using cell mode. Please see the example MATLAB files that have been posted to Blackboard from past weeks for examples in formatting. Any functions will be turned in as separate .m files.

You must turn this assignment in to Blackboard as a published pdf. Create a script to complete the homework assignment, taking care to control what is output to the command window. The code should be **well commented** so that it is easy to follow along.