

Intro to Python

Homework 5

Problem 1

Using a *for* loop, write a program that displays, ten numbers per line, all the numbers from 100 to 1,000 that are divisible by 5 and 6. Separate the numbers by one space in your output. (Bonus: do the same thing using a while loop)

Problem 2

The function $f(x)=e^x$ can be approximated near $x=0$ by the n^{th} order Taylor series, $T(x)=1+x+x^2/2!+\dots+x^{n-1}/(n-1)!$. This approximation is n^{th} order because the largest error term is $x^n/n!$. Write a program that takes in an x -value x_0 (floating point number) and an order of error n (integer). Using nested *for* loops, calculate the n^{th} order Taylor approximation for e^{x_0} . You should not need any methods from the *math* module.

(Hint: Use one loop to keep track of which term you're calculating and nested loops to calculate the exponent and factorial.)

(Bonus: Do this with a single *for* loop.)