

MATH 180A HOMEWORK #0

FALL 2020

This assignment is worth 5 points. The purpose is to familiarize you with Gradescope, the software used in this course for grading homework and exams, and other course details. Complete the following steps.

1. Read the course website carefully.
2. Answer the following questions (no justification required):
 - i. What is the radius of convergence of the series $\sum_{n=0}^{\infty} x^n$?
 - ii. Let r be the radius of convergence from the previous question. Find a closed form expression for the series $\sum_{n=0}^{\infty} x^n$ assuming $|x| < r$. In other words, find a function $f(x)$ that returns the value of the series using only a finite number of operations. **Note:** $f(x) = \sum_{n=0}^{\infty} x^n$ is not a closed form expression since it involves an infinite number of operations.
 - iii. Find a closed form expression for the series $\sum_{n=1}^{\infty} x^n$ assuming $|x| < r$.
 - iv. Find a closed form expression for the series $\sum_{n=m}^{\infty} x^n$ assuming $|x| < r$, where $m \geq 0$.
3. Make sure to include your name, student ID, and the name of your professor in the top right-hand corner of your assignment. For longer assignments later in the quarter, this only needs to be done on the first page.
4. Create an account with Gradescope (make sure you use your @ucsd.edu address). If you already have a Gradescope account linked to your @ucsd.edu address, then you do *not* need to create another account. Make sure that you provide the correct student ID (of the form AXXXXXXXX) in the corresponding field in your Gradescope account. If you fail to do so, you will be awarded **0 points** for this homework. Typical mistakes include: indicating your UCSD email address in the student ID field, indicating your name in the student ID field, etc.
5. Read the guide for submitting homework on Gradescope. Make sure you read the guide *carefully*. In particular, make sure you read the section **Assign** under **Submitting a PDF**.
6. Log into your account, find the course Gradescope page, select the correct assignment, and upload your scanned assignment following the guide in the previous step. If you cannot find the course Gradescope page, then you may need the course entry code: **9763XY**.