Math 1152 Written Homework 7

Due: Thursday, June 30th in Gradescope.

- Calculators are permitted EXCEPT those calculators that have symbolic algebra or calculus capabilities.
- SHOW ALL WORK!
- A completed version of this document is due to be uploaded to Gradescope by 11:59pm on **Thursday, June 30th**.
- If you have difficulties using Gradescope, see pages under the Gradescope header in the Modules section of our Carmen page for help.
- Ideally, this can be completed on an iPad or android tablet using an app like One Note, Notability, Papyrus, etc. - if you don't have access to one of these options,then printing and scanning or using a smartphone document-scanning feature to generate a pdf to upload will also work.
- If you have difficulties uploading the assignment, email a pdf to your recitation instructor.
- This homework will be graded via random subset selection - not every part of every question will be looked at by the grader.
- Rubrics to applicable questions will be provided later.

Question 1.
Consider the series

(I) $\sum \frac{(-1)^n}{2^{n/\log(n)}}$

(II) $\sum \left(\frac{3}{4}\right)^n$

(III) $\sum \frac{2n^2-2n+1}{n^2(n-1)^2}$.

(a). Show that each of these series converges.

(b). Find the remainder for each of these series.

(c). Which series converges *fastest* based on your answers to parts (a) and (b)?