MAT 319 HOMEWORK–13 DUE AT THE BEGINNING OF CLASS ON MONDAY, DECEMBER 10

One goal for this course is for you to develop your skill in effectively communicating mathematics. With this in mind, you should clearly write up your solutions. Solutions with little or no justification will receive little or no credit. Clear, organized, partially correct work may receive partial credit.

(1) Do problem 32.2.

(2) Let g denote the function on $[0, 1]$ defined as follows:
$$g(x) = \begin{cases} x & x = \frac{1}{2^n}, \ n \in \mathbb{N}. \\ 0 & \text{elsewhere} \end{cases}$$

Determine whether or not g is integrable on $[0, 1]$. If it is, determine the value of the integral. If not, prove it is not.

(3) Do problems 33.4, 33.11, 34.3, and 34.8.

(4) Suggested, but not to submit: Problems 32.7, 33.12.

Below are some additional problems/suggestions for final exam review. These will be updated through Friday, December 14.

(5) I will ask you to prove a theorem on the final exam that is proved or outlined in the textbook. It will be one of: 29.3, 29.8, 32.5, 33.2, and 34.1.

(6) The main topics on the exam are sequences, series, continuity, differentiation and integration.

(7) You should know every definition associated to the five topics above.

(8) You should know main theorems about the five topics above.

(9) One good way to study would be to re-do old homework sets.