Part I: (due at the beginning of class Monday, February 19)

Everyone finished the derivation of Simpson's Rule in class on Friday; read the rest of the text in the Simpson's Rule handout if you didn't get to do that yet. Also, read the first page and a half of the goldenrod Indeterminate Forms handout, stopping when you get to Example 3. Answer the questions interspersed in the reading, including Examples 1 and 2, as your reading questions.

Remember that what you turn in for Part I should have 3 parts, as mentioned in the syllabus:

(a) Your responses to the reading/watching questions below.

(b) Your own questions/comments on the reading.

(c) The amount of time you spent on Part I (including the time spent reading/watching).

Part II: Exercises (prepare for class Monday, February 19)

Examples 1 and 2 on the Simpson's Rule handout.

Part III: Homework Problems (due Wednesday, February 21 at the beginning of class)

Review the guidelines and Sample Homework in the syllabus to make sure your Part III solutions follow them.

1. Suppose f is a function for which $f(x) > 0$, $f'(x) \leq 0$, and $f''(x) \leq 0$.

   (a) Put R_n, L_n, T_n, and M_n approximations for $\int_a^b f(x)\,dx$ in order from smallest to largest. Explain your answer, including an illustration.

   (b) The actual value of the integral must lie between two of the approximations you listed in part (a). Which two and why?