Math 227 Test 2 Tips

In order to have any hope of passing Test 2, you must memorize the table of series on page 808 of your textbook. This is so important that it will be repeated in bold:

You must memorize the table on page 808.

Of course, memorizing the table is not enough. You also need to know how to use it. See problems 2 and 3 of Practice Test 2 for examples where you need to know the table.

In addition to the table, there are several other topics that you need to know for the test. You can check your notes, WebAssign problems, and the Practice Test for these topics.

On most of Test 2, it should be clear how much work you need to show and how you should write down your answer. However, there will be a few kinds problems that require a specific solution format for full credit. These situations are explained below.

- If one of your answers is a binomial series, it is not enough to write

$$\sum_{n=0}^{\infty} \binom{k}{n} x^n$$

  You also need to demonstrate that you know what $\binom{k}{n}$ means. You can either write out the first few terms:

$$\sum_{n=0}^{\infty} \binom{k}{n} x^n = 1 + kx + \frac{k(k-1)}{2!} x^2 + \frac{k(k-1)(k-2)}{3!} x^3 + \dots$$

  or you can rewrite the series using the definition of $\binom{k}{n}$:

$$\sum_{n=0}^{\infty} \binom{k}{n} x^n = 1 + \sum_{n=1}^{\infty} \frac{k(k-1)(k-2)\dots(k-n+1)}{n!} x^n$$

- If you use Taylor's Inequality, you must state the interval on which it is true. This is because Taylor's Inequality is, in general, false outside of that interval. For example, a final answer of the form
$$|R_4(x)| \leq \frac{2}{5!} 0.5^5$$
  would not receive full credit. Instead, final answers should be written in the form

$$|R_4(x)| \leq \frac{2}{5!} 0.5^5 \text{ for } |x - 3| \leq 0.5$$

- In order to find the interval of convergence of certain power series, you'll need to test two series for convergence. In order to get full credit for these tests, you will need to state the tests you are using, but you will not be required to work out the details of those tests.