Problem Set 1 Calculus 2 Due 9/28/07

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 5 points. For full credit indicate clearly how you reached your answer. All work must be legible and submitted on clean paper without ragged edges.

1. Derive Line 36 from the table of integrals at the end of the book.

2. Derive Line 44 from the table of integrals at the end of the book.

3. Derive Line 52 from the table of integrals at the end of the book.

4. a) Derive $\int \frac{\sin x\,dx}{x^m} = -\frac{\sin x}{(m-1)x^{m-1}} + \frac{1}{m-1}\int \frac{\cos x\,dx}{x^{m-1}}$. [Line 282 from CRC 14th]

   b) Use part a) to evaluate $\int \frac{\sin x dx}{x^2}$.