HOMEWORK 1

(1) Install DETools from the textbook CDROM on your computer.

(2) Read Section 1.1 of the textbook and do problems 4, 6, 10, and 11 on pp. 14-17. (In the problem 6(b) the last two years in the table to determine $k$).

(3) Compute the following integrals. Do not use calculator. Show all your work.

(a) \[ \int (x + 1)^3 dx; \]

(b) \[ \int \left( \frac{3}{x} + \sqrt{x} - \frac{1}{\sqrt{x}} \right) dx; \]

(c) \[ \int \left( \frac{1}{1 + t^2} + \frac{1}{\sqrt{1 - t^2}} + \cos(2t) \right) dt; \]

(d) \[ \int_0^1 e^{-3t} dt; \]

(e) \[ \int_0^2 \frac{dt}{2t + 5}; \]

(f) (use integration by parts) \[ \int ye^{-2y} dy; \]

(g) (use partial fractions) \[ \int \frac{5}{(t + 2)(t - 3)} dt. \]