Math 111-002
Assignment # 6

Please remember that the assignment consists of only a sample of the kind of questions you are supposed to be able to do. It is **not** a safe practice to just do the assignment, and that is why there is a list of "suggested practice problems" in the course web page.

1. Evaluate the integral.

(a) $\displaystyle\int_0^1 (x^2+3)\,e^x\,dx$

(b) $\displaystyle\int_1^2 \sqrt{u}\,\ln u\,du$

(c) $\displaystyle\int_0^1 x\,\arctan(x)\,dx$

(d) $\displaystyle\int e^{\sqrt{x}}\,dx$

(e) $\displaystyle\int_0^1 \frac{t^3}{\sqrt{2+t^2}}\,dt$

(f) $\displaystyle\int_0^{\pi/2} \cos^5 t\,dt$

(g) $\displaystyle\int \tan^4 x\,\sec^4 x\,dx$

(h) $\displaystyle\int \frac{1}{1-\cos t}\,dt$

(i) $\displaystyle\int_0^1 \sqrt{x^2+1}\,dx$

(j) $\displaystyle\int \frac{1}{(5-4x-x^2)^{5/2}}\,dx$

(k) $\displaystyle\int_0^2 x\sqrt{16-x^2}\,dx$

(l) $\displaystyle\int_0^2 x^2\sqrt{16-x^2}\,dx$