Calculus Week 1 Homework
Due Monday 7 February 2006
Mr. Quinn

Evaluate these integrals.

$\int 5x^4 - 3x^2 + 2x + 6\,dx$ $\int 3x^{-3} - 2x^{-2} + x^4 + 16x^7\,dx$ $\int (1+x^2)(x-2)\,dx$

$\int x^{\frac{1}{3}}(2+x)\,dx$ $\int (x^3+x)^2\,dx$ $\int x(x+1)^3\,dx$

$\int (\cos x - 5\sin x)\,dx$ $\int (\sec^2 x + x)\,dx$ $\int \sin 2x \cos 2x\,dx$

$\int x^3\sqrt{5x^4+20}\,dx$ $\int \frac{3x}{\sqrt[3]{10-x^2}}\,dx$ $\int \frac{1}{(x-1)^2}\,dx$

Find these integrals, given the indicated x and y pairs.

$\int 12x^2 + 6x - 5\,dx$ if x = 0 when y = -3

$\int (3x^3+5)^2\,dx$ if x = 1 when y = 11

$\int 2x^3\sqrt{3x^4-5}\,dx$ if x = 2 when y = 5

Estimate the area under these curves from 1 to 5 using *both* the left-hand and right-hand methods.

$y = x^2 + 3$ $y = 2x^3 - 1$ $y = \sqrt{x+1}$