Math 172A
Spring 2010
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Integral Calculus
Quiz 1
Write your name on this quiz

Solution

1. Find the general indefinite integral $\int \left(x^3 - \frac{3}{x^2}\right) dx$.

$$= \frac{x^4}{4} + \frac{3}{x} + C$$

2. Evaluate the definite integral $\int_{-1}^{0} x(1-x^2)^7\, dx$.

$$u = 1 - x^2 \quad du = -2x\,dx \rightarrow -\frac{1}{2}\,du = x\,dx$$

$$\int_{-1}^{0} x(1-x^2)\,dx = -\frac{1}{2}\int_{0}^{1} u^7\,du$$

$$= -\frac{1}{2}\,\frac{u^8}{8}\Big|_0^1 = -\frac{1}{16} - \left(-\frac{0}{16}\right) = \frac{-1}{16}$$