Math 105
Assignment 4
Due the week of January 31, 2011

Your name: ___________________________ Student ID # ___________________________

1. (10 points) Evaluate

\[ \int \frac{x^{18}}{(49 - x^2)^{1/2}} \, dx \]

2. (15 points) Evaluate

\[ \int \frac{x^3 - 4}{x^2 - 2x - 3} \, dx \]
3. (15 points) Consider the integral

\[ I = \int_0^1 \sqrt{1 - x^2} \, dx. \]

(a) Find \( I \) (use geometry). (b) Find an approximation of \( I \) using Midpoint rule and Trapezoid rule with \( n = 4 \). (c) For both Midpoint and Trapezoid rules, calculate the absolute error between the estimate and the true value.