

Name: \_\_\_\_\_

Score: \_\_\_\_\_

1. Pick TWO of the following integrals and evaluate them. (6 points total)

Evaluate three integrals for a bonus point!

$$\int_0^\pi x \sin x \cos x, \int_0^{\pi/2} \left| \frac{1}{2} - \cos x \right| dx, \int_0^3 \sqrt{6x - x^2} dx, \int_0^1 \frac{e^{\cos^{-1} x}}{\sqrt{1-x^2}} dx,$$

2. Estimate the integral  $\int_0^4 e^{x^2} dx$  using (a) the Midpoint Rule, (b) the Trapezoidal Rule, (c) Simpson's Rule, each with  $n = 4$ . (4 points)