

Name:

Section: 7 8

1. Use the Trapezoidal Rule and Simpson's Rule with  $n = 4$  to approximate  $\int_1^5 x^2 dx$ .

2. Find an integer  $n$  that would guarantee Simpson's Rule  $S_n$  to be within  $10^{-8}$  of  $\int_1^5 x^{3/2} dx$ . You do not need to simplify your answer.

3. Evaluate the improper integral  $\int_0^{\infty} \frac{4}{x^2 + 5x + 6} dx$ .