5.6 Numerical Integration

Name: Date: July 6, 2015

P 2. Use the Trapezoidal Rule to approximate the value of

$$\int_1^2 \left(\frac{x^2}{4} + 1 \right) \, dx$$

with $n = 4$.

P 10. Use the Simpson's Rule to approximate the value of

$$\int_0^2 x\sqrt{x^2 + 1}\, dx$$

with $n = 4$.

P 28. Estimate the error in approximating

$$\int_0^\pi \cos x \, dx$$

with $n = 4$ using the Trapezoidal Rule.

P 30. Find n such that the error in the approximation of

$$\int_0^1 \frac{1}{1+x}\, dx$$

is less than or equal to 0.00001 using Simpson's Rule.