

BC Trapezoid, Simpson's & Midpoint Review

For 1-3 approximate the integral using :

A) Trapezoid Method

B) Midpoint Rule

1. $\int_0^2 x^2 dx; N = 4$

2. $\int_0^4 \sqrt{x} dx; N = 4$

3. $\int_1^4 x^3 dx; N = 6$

For 4-6 approximate the integral using Simpson's Rule:

4. $\int_0^4 \sqrt{x} dx; N = 4$

5. $\int_0^3 \frac{1}{x^4+1} dx; N = 6$ could you do #5 if N=5?

6. $\int_3^5 (9 - x^2) dx; N = 4$

7. $\int_1^4 \frac{1}{x} dx; T_{10}$

A) is T_{10} an over or underestimation, why?

B) State the error (Do NOT Calculate T_{10})

8. $\int_1^3 \frac{1}{x} dx$

A) Calculate the error for S_8

B) Find N such that S_N has an error of at most 10^{-6}