

QUIZ 9

1. Match the following Riemann Sum Formulas (or rules) to their name.

The Right Riemann Sum $\frac{\Delta x}{2}[f(x_0) + 2f(x_1) + \cdots + 2f(x_{n-1}) + f(x_n)]$

The Left Riemann Sum $\Delta x[f(x_0) + \cdots + f(x_{n-1})]$

The Midpoint Rule $\Delta x[f(x_1) + \cdots + f(x_n)]$

The Trapezoid Rule $\frac{\Delta x}{3}[f(x_0) + 4f(x_1) + 2f(x_2) + \cdots + 2f(x_{n-2}) + 4f(x_{n-1}) + f(x_n)]$

Simpson's Rule $\Delta x[f(\bar{x}_1) + \cdots + f(\bar{x}_n)]$

2. Match the following formulas for error bounds to the appropriate Riemann Sum.

The Midpoint Rule $|error| \leq \frac{K(b-a)^3}{12n^2}$

The Trapezoid Rule $|error| \leq \frac{K(b-a)^5}{180n^4}$

Simpson's Rule $|error| \leq \frac{K(b-a)^3}{24n^2}$