

Quiz 4 Calculus 1 Due 12/3/2018

Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. If you use a left-hand sum with $n = 4$ subdivisions to approximate $\int_1^5 \frac{1}{x} dx$, what are:

$$\Delta x =$$

$$c_1 =$$

$$c_2 =$$

$$c_3 =$$

$$c_4 =$$

$$f(c_1) =$$

$$f(c_2) =$$

$$f(c_3) =$$

$$f(c_4) =$$

$$\sum_{i=1}^4 f(c_i) \cdot \Delta x =$$

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2. If you use a right-hand sum with $n = 4$ subdivisions to approximate $\int_1^3 x^2 dx$, what are:

$$\Delta x =$$

$$c_1 =$$

$$c_2 =$$

$$c_3 =$$

$$c_4 =$$

$$f(c_1) =$$

$$f(c_2) =$$

$$f(c_3) =$$

$$f(c_4) =$$

$$\sum_{i=1}^4 f(c_i) \cdot \Delta x =$$

3. If you use a midpoint sum with $n = 8$ subdivisions to approximate $\int_1^5 \frac{1}{x} dx$, what are:

$$\Delta x =$$

$$c_1 =$$

$$c_2 =$$

$$c_3 =$$

$$c_4 =$$

$$c_5 =$$

$$c_6 =$$

$$c_7 =$$

$$c_8 =$$

$$f(c_1) =$$

$$f(c_2) =$$

$$f(c_3) =$$

$$f(c_4) =$$

$$f(c_5) =$$

$$f(c_6) =$$

$$f(c_7) =$$

$$f(c_8) =$$

$$\sum_{i=1}^8 f(c_i) \cdot \Delta x =$$

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4. If you use a right-hand sum with n subdivisions to approximate $\int_1^3 x^2 dx$, what are:

$$\Delta x =$$

$$c_k =$$

$$f(c_k) =$$

$$\sum_{k=1}^n f(c_k) \cdot \Delta x =$$

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n f(c_k) \cdot \Delta x =$$