Quiz 8 Calculus 1 Due 11/26/2012

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:

$\Delta x =$

$\overline{x}_1 =$

$\overline{x}_2 =$

$\overline{x}_3 =$

$\overline{x}_4 =$

$f\left(\overline{x}_1\right) =$

$f\left(\overline{x}_2\right) =$

$f\left(\overline{x}_3\right) =$

$f\left(\overline{x}_4\right) =$

$\sum_{k=1}^{4} f\left(\overline{x}_k\right) \cdot \Delta x =$

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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:

$\Delta x =$

$\overline{x}_1 =$

$\overline{x}_2 =$

$\overline{x}_3 =$

$\overline{x}_4 =$

$f\left(\overline{x}_1\right) =$

$f\left(\overline{x}_2\right) =$

$f\left(\overline{x}_3\right) =$

$f\left(\overline{x}_4\right) =$

$\sum_{k=1}^{4} f\left(\overline{x}_k\right)\cdot\Delta x =$

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

$\Delta x =$

$\overline{x}_1 =$

$\overline{x}_2 =$

$\overline{x}_3 =$

$\overline{x}_4 =$

$f\left(\overline{x}_1\right) =$

$f\left(\overline{x}_2\right) =$

$f\left(\overline{x}_3\right) =$

$f\left(\overline{x}_4\right) =$

$f\left(\overline{x}_5\right) =$

$f\left(\overline{x}_6\right) =$

$f\left(\overline{x}_7\right) =$

$f\left(\overline{x}_8\right) =$

$\sum_{k=1}^{8} f\left(\overline{x}_k\right) \cdot \Delta x =$

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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:

$\Delta x =$

$\overline{x}_k =$

$f\left(\overline{x}_k\right) =$

$\sum_{k=1}^{n} f\left(\overline{x}_k\right)\cdot\Delta x =$

$\lim_{n\to\infty}\sum_{k=1}^{n} f\left(\overline{x}_k\right)\cdot\Delta x =$