

**Quiz 4      Calculus 1      Due 12/2/2016**

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:

$$\Delta x =$$

$$x_1^* =$$

$$x_2^* =$$

$$x_3^* =$$

$$x_4^* =$$

$$f(x_1^*) =$$

$$f(x_2^*) =$$

$$f(x_3^*) =$$

$$f(x_4^*) =$$

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

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

$$\Delta x =$$

$$x_1^* =$$

$$x_2^* =$$

$$x_3^* =$$

$$x_4^* =$$

$$f(x_1^*) =$$

$$f(x_2^*) =$$

$$f(x_3^*) =$$

$$f(x_4^*) =$$

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