

Name: \_\_\_\_\_

Quiz #7 (November 24<sup>th</sup>, 2008)

Let  $f(x) = x^2e^{-2x}$ .

1. Approximate the area under  $f(x)$  between  $x = 1$  and  $x = 3$  using the Right Hand Rule and  $n = 10$ .

Area  $\approx$  \_\_\_\_\_

2. We want to compute the **exact** area under  $f(x)$  between  $x = A$  and  $x = B$ .

Give a formula which will compute this area. \_\_\_\_\_

3. Find the **exact** area under  $f(x)$  between  $x = 1$  and  $x = 3$  and then find a decimal approximation of your answer (use 10 decimal places).

Area = \_\_\_\_\_  $\approx$  \_\_\_\_\_

4. Suppose that  $f(x)$  represents the rate of sales of Pat's Onion Bagels ( $f(x)$  is measured in *thousands* of dollars per year,  $x$  is the number of years since Pat started selling bagels). What does

$$\int_1^2 f(x) dx \approx 0.10964$$

tell us (write a sentence to explain – please use English)?

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