

**MATH 311 – CALCULUS 3**  
**Spring 2006**  
**QUIZ 8**

NAME \_\_\_\_\_

1. Evaluate:  $\int_0^2 \int_0^{2y} x + y \, dx \, dy =$

2. Insert the limits of integration that reverse the order of integration in problem #1:

$$\int_{\boxed{\phantom{0}}}^{\boxed{\phantom{2}}} \int_{\boxed{\phantom{0}}}^{\boxed{\phantom{2y}}} x + y \, dy \, dx.$$

3. Set up but DO NOT EVALUATE a double integral to compute the area of the region  $R$  bounded by the curves  $y = \sqrt{x}$  and  $y = x^2$ .

4. Set up but DO NOT EVALUATE a double integral to compute the volume of the solid bounded by the graphs of  $x = 0$ ,  $x = 2$ ,  $y = x$ ,  $y = 4$ ,  $z = 0$  and  $z = xy$ .