Math 233 - Quiz 5

Name _____

November 18, 2021

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due November 30.

1. (3 points) Evaluate the iterated integral and sketch the region of integration.

$$\int_{-1}^{1} \int_{-x^2}^{x^2} (x^2 - y) \, dy \, dx$$

2. (3 points) Evaluate the iterated integral by reversing the order of integration.

$$\int_{0}^{4} \int_{\sqrt{y}}^{2} e^{x^3} \, dx \, dy$$

3. (4 points) Consider the double integral given below, where R is the plane region bounded by the graphs of $y = \sqrt{x}$, $y = 2$, and $x = 0$. Sketch the region R, write the double integral as an iterated integral in both orders, and evaluate either one of your iterated integrals.

$$\iint\limits_{R} \sin y^3 \, dA,$$