Math 233 - Quiz 5

Name _____

April 8, 2021

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due April 15.

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

$$\int_{-1}^{1} \int_{x}^{2x} e^{x+y} \, dy \, dx$$

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

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

Turn over.

3. (3 points) Evaluate by converting to polar coordinates.

$$\int_0^1 \int_x^{\sqrt{2-x^2}} (x + 2y)\, dy\, dx$$

4. (1 points) Let E be the plane region between the graphs of $y = x^2$ and $y = x + 2$. Sketch the region E and write the iterated integral (in the $dy\, dx$ order) for the double integral given below. Do not evaluate.

$$\iint_E (xy + 5)\, dA,$$