

"QUIZ" for Lecture 13

NAME: (print!) Angelica Armstrong Section: 23

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q13FirstLast.pdf) ASAP BUT NO LATER THAN Oct. 22, 8:00pm

1. Change the order of integration in

$$\int_1^4 \int_0^{\ln y} f(x, y) dx dy$$

$$0 < x < \ln y \quad 1 < y < 4 \quad \int_1^4 \int_0^{\ln y} f dx dy$$

$$0 < x < \ln 4 \quad e^x < y < 4 \quad \int_0^{\ln 4} \int_{e^x}^4 f dy dx$$

2. Evaluate

$$\int_0^2 \int_{y/2}^1 \frac{1}{(x^2+1)^2} dx dy$$

by inverting the order of integration and evaluating the new iterated integral.

$$0 < y < 2 \quad y/2 < x < 1 \rightarrow 0 < x < 1 \quad 0 < y < 2x$$

$$\int_0^1 \int_0^{2x} \frac{1}{(x^2+1)^2} dy dx \rightarrow \frac{1}{(x^2+1)^2} \int_0^{2x} dy \rightarrow \frac{1}{(x^2+1)^2} \cdot 2x$$

$$\int_0^1 \frac{2x}{(x^2+1)^2} = \frac{1}{2}$$