"QUIZ" for Lecture 12

NAME: (print!) Fayed Ruza **Section:** 6

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q12FirstLast.pdf) ASAP BUT NO LATER THAN Oct. 19 8:00pm

1. Calculate the iterated integral

$$\int_1^2 \int_{-1}^1 (x + y^2)\, dx\, dy \quad .$$

14/3

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

$\frac{x^2}{2} + xy^2 \Big|_{-1}^{1}$

$\frac{1}{2} + y^2 - \frac{1}{2} + y^2$

$2y^2$

$2\int_1^2 y^2\, dy$ $\quad \frac{y^3}{3}\Big|_1^2$

$2\left(\frac{8}{3} - \frac{1}{3}\right) = 2\left(\frac{7}{3}\right) = \frac{14}{3}$

2. Calculate the double integral

$$\int\int_R \frac{x^2 y}{x^3 + 1}\, dA \quad ,$$

$$R = \{(x, y) \,|\, 0 \le x \le 1\,,\, -1 \le y \le 1\} \quad .$$

0

$\int_0^1 \int_{-1}^{1} \frac{x^2 y}{x^3+1}\, dy\, dx$

$\frac{x^2}{x^3+1} \int_{-1}^{1} y\, dy$

$\int_0^1 0 \cdot \frac{x^2}{x^3+1}\, dx$ $\quad \frac{y^2}{2}\Big|_{-1}^{1} = 0$

$\int_0^1 0\, dx = 0$