

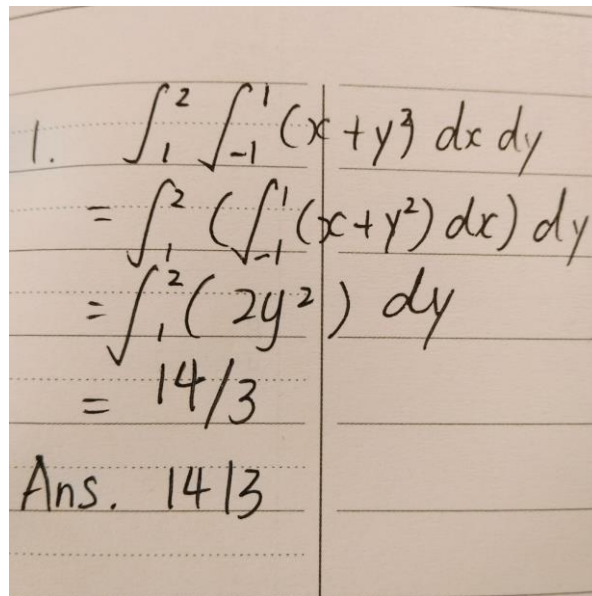
"QUIZ" for Lecture 12

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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

$$\text{Int}(\text{int}((x + y^2), x=1..2), y=-1..1)$$



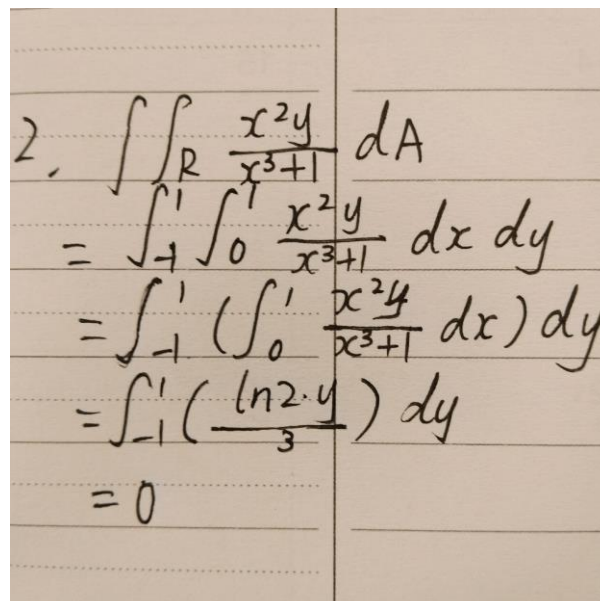
Handwritten solution for problem 1:

$$\begin{aligned} 1. & \int_1^2 \int_{-1}^1 (x + y^2) dx dy \\ &= \int_1^2 \left(\int_{-1}^1 (x + y^2) dx \right) dy \\ &= \int_1^2 (2y^2) dy \\ &= 14/3 \\ \text{Ans. } & 14/3 \end{aligned}$$

2. Calculate the double integral

$$\iint_R (x^2 y) / (x^3 + 1) dA,$$

$$R = \{(x, y) \mid 0 \leq x \leq 1, -1 \leq y \leq 1\}.$$



Handwritten solution for problem 2:

$$\begin{aligned} 2. & \iint_R \frac{x^2 y}{x^3 + 1} dA \\ &= \int_{-1}^1 \int_0^1 \frac{x^2 y}{x^3 + 1} dx dy \\ &= \int_{-1}^1 \left(\int_0^1 \frac{x^2 y}{x^3 + 1} dx \right) dy \\ &= \int_{-1}^1 \left(\frac{\ln 2 \cdot y}{3} \right) dy \\ &= 0 \end{aligned}$$