



PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-
GOA

Roll No:					
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TUTORIAL NO: 5 (common to all batches)

Semester: II (RC 2019-'20)

Course Instructor: Prof. Komal Paroolkar

Course: FE210

Mathematics-II

Topic: change of order of integration (in Cartesian coordinates).

- Q1.** Write the following as one double integral and evaluate **CO CL**
CO1 CL3

$$\int_0^1 \int_0^1 2x + 5 \, dx dy + \int_1^2 \int_0^{2-x} 2x + 5 \, dx dy$$

- Q2** Change the order of integration and hence evaluate **CO1 CL3**

$$\int_1^3 \int_0^x 2x + 3y \, dx dy$$

- Q3** Evaluate by changing the order **CO1 CL3**

$$\int_0^2 \int_{y^2}^{2+y} x + y \, dx dy$$

- Q4.** Evaluate **CO1 CL3**

$$\int_0^\infty \int_x^\infty e^{-y^2} \, dx dy$$

- Q5.** Change the order of integration and evaluate

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

Q6. Evaluate $\int_0^1 \int_{y+1}^2 \sin(\frac{\pi y}{x-1}) dx dy$ CO CL
CO1 CL3

Q7. Write the following as one double integral and evaluate **CO1 CL3**
$$\int_{-1}^0 \int_0^{x+1} 2x + 5 dx dy + \int_0^1 \int_0^1 2x + 5 dx dy$$

Q8. Evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} y e^{\frac{x}{\sqrt{1-y^2}}} dx dy$ **CO1 CL3**

Q9. Change the order in the following **CO1 CL3**
$$\int_0^2 \int_0^{\sqrt{y}} f(x, y) dx dy + \int_2^4 \int_{y-2}^{\sqrt{y}} f(x, y) dx dy$$

Q10. Change the order and evaluate **CO1 CL3**
$$\int_1^2 \int_1^{x^2} e^{-y^2} dx dy.$$