

Total score: 11 points

March Boedihardjo © 2021

- Write your solutions on some papers. Scan as a pdf/jpg file(s). Upload the pdf/jpg file(s) as CCLE Assignment Quiz 2 before the end time.
- Open book. You may use calculator. But you cannot get any help from other people.
- Unless specified otherwise, you may compute any integral using Fundamental Theorem of Calculus without using the definition involving Riemann sum.

1. (4 points) Let $W = \{(x, y, z) \mid x, y \geq 0, 2x + 4y \leq z \leq x + y + 1\}$. Find $\int_W 1 \, d(x, y, z)$.

2. (3 points) Let $D = \{(x, y) \mid x, y \geq 0, x^2 + y^3 \leq 2\}$. Find $\int_D x \, d(x, y)$ using $\int \int dx \, dy$ set up.

3. (4 points) (i) Find the Cartesian coordinates of the polar coordinates $r = 5, \theta = \frac{\pi}{5}$.

(ii) Find the polar coordinates of the Cartesian coordinates $(-1, -3)$

(iii) Write the curve $r = 2 \cos^3 \theta$ in terms of x and y .

End of exam