Notes: **Closed book**.
Can bring *note* paper *writing hand* 1 sheet size A4.
No can open HP/Gadget/Laptop

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1. a. Find element $dA$ coordinate Polar with use Jacobians
   b. Use coordinate polar for count integral following:

$$\int_0^\infty \int_0^\infty e^{-\sqrt{x^2 + y^2}}\, dx\, dy$$

2. Determine is Medan vector $\vec{F} = z\,\hat{\imath} + x\,\hat{k}$ is conservative? If yes, find the Medan scalar potential

3. Determine $\int_c \vec{F} \cdot d\vec{r}$ with C is $x^2 + y^2 - 2 = 0$ from point $(1, 1)$ to point $(1, -1)$ and $\vec{F} = (2x - 3y)\,\hat{\imath} - (3x - 2y)\,\vec{J}$

4. Draw it sketch following function

$$f(x) = \begin{cases} x, & 0 < x < 4 \\ 8 - x, & 4 < x < 8 \end{cases}$$

And develop become row:
   a. Row Fourier Cosine (draw the sketch)
   b. Fourier Series Sinus (draw the sketch)