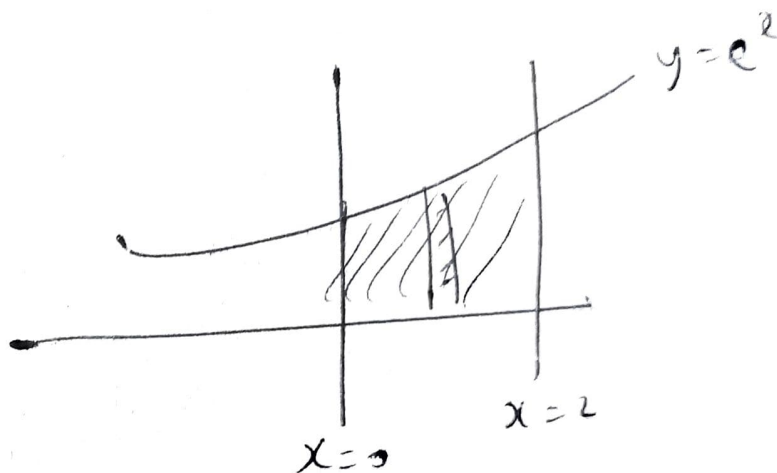


$$g(x) = \int_0^x (x-t)e^t dt$$

$$g'(x) = \int_0^x e^t dt + 0 - 0 \quad (\text{Leibnitz rule})$$

$$\boxed{g''(x) = e^x}$$



$$\text{ans. 4} = \int_{x=0}^2 \int_{y=0}^{e^x} dy dx \Rightarrow \int_0^2 e^x dx \Rightarrow [e^x]_0^2 \Rightarrow \boxed{e^2 - 1}$$