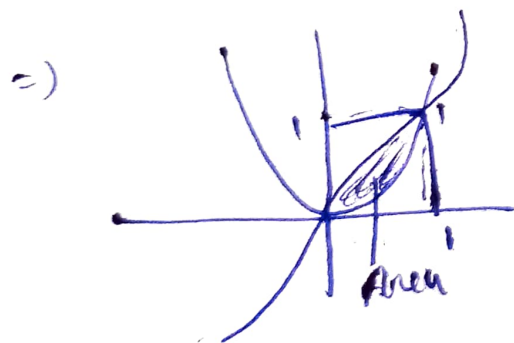


$$\text{area blw } f \text{ \& } g = \text{area blw } f^{-1} \text{ \& } g^{-1}$$

$$f(x) = \frac{1}{2}x(x+1) \rightarrow \text{parabola} \rightarrow \text{graph}$$

$$g(x) = \frac{1}{2}x^2(x+1) \rightarrow \text{cubic} \rightarrow \text{graph}$$

$$\Rightarrow \begin{matrix} f(0)=0 & \& f(1)=1 \\ g(0)=0 & \& g(1)=1 \end{matrix} \Rightarrow \text{Intersection of } f \text{ \& } g \text{ are } (0,0) \text{ \& } (1,1)$$



$$\text{area} = \left| \int_0^1 f(x) - g(x) dx \right| = \left| \int_0^1 \frac{x^2+x}{2} - \frac{x^3+x^2}{2} dx \right|$$

[area is +ve]

$$\Rightarrow \frac{1}{2} \int_0^1 x + x - x^3 - x^2 dx = \frac{1}{2} \left[\frac{x^2}{2} - \frac{x^3}{3} \right]_0^1$$

$$\Rightarrow \frac{1}{2} \left[\frac{1}{2} - \frac{1}{3} \right] = \frac{1}{2} \left[\frac{2-1}{6} \right] = \left[\frac{1}{8} \right] \text{ m}$$