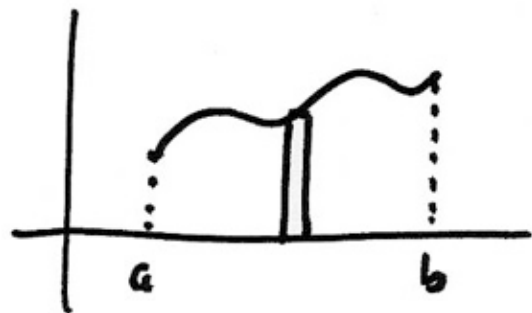


Area under a curve given by $\begin{cases} x = f(t) \\ y = g(t) \end{cases} : t_0 \leq t \leq t_1$.



$$A = \int_a^b y \, dx = \int_{t_0}^{t_1} g(t) \frac{dx}{dt} dt = \int_{t_0}^{t_1} g(t) f'(t) dt$$

Example: $\begin{cases} x = rt - r \sin t \\ y = r - r \cos t \end{cases} : 0 \leq t \leq 2\pi$.