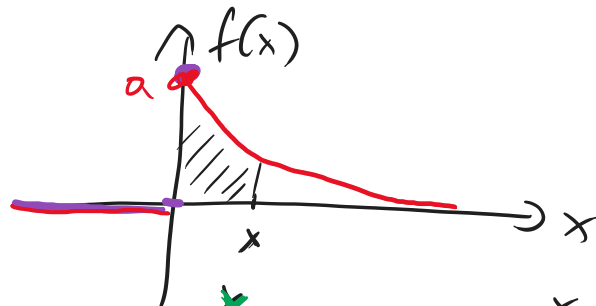


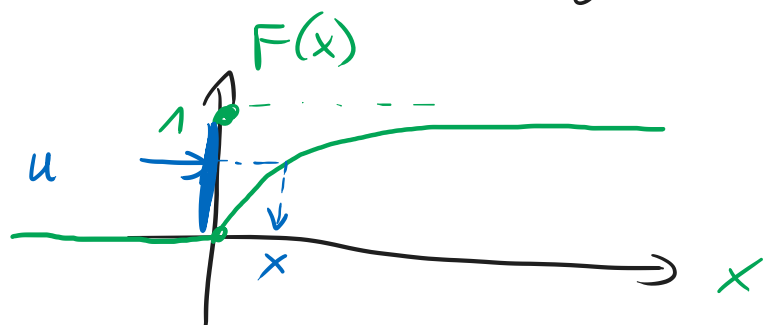
$$f(x) = \begin{cases} ae^{-ax} & \text{for } x \geq 0 \\ 0 & \text{for } x < 0 \end{cases}$$



$$F(x) \triangleq \int_{-\infty}^x f(x) dx = \int_0^x ae^{-ax} dx = \left[-e^{-ax} \right]_0^x = -e^{-ax} - (-1) =$$

$$= 1 - e^{-ax} = u$$

$$x \in [0, \infty)$$



$$-e^{-ax} = 1 - u$$

$$-ax = \ln(1 - u) \rightarrow x = \ln(1 - u) / a$$

return $-\log(\underline{1 - \text{rand}()}) / a$

$-\log(\text{rand}()) / a$