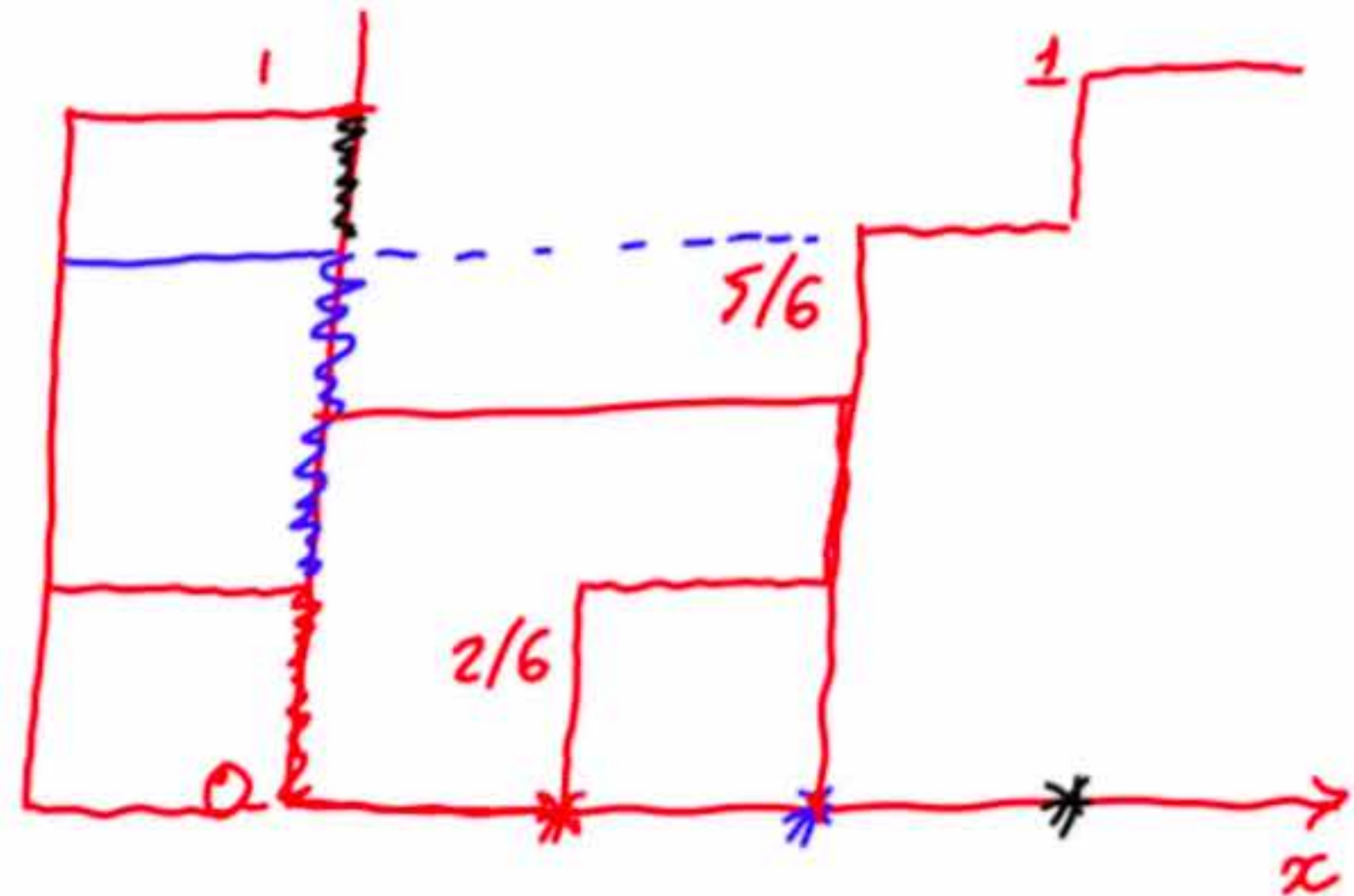
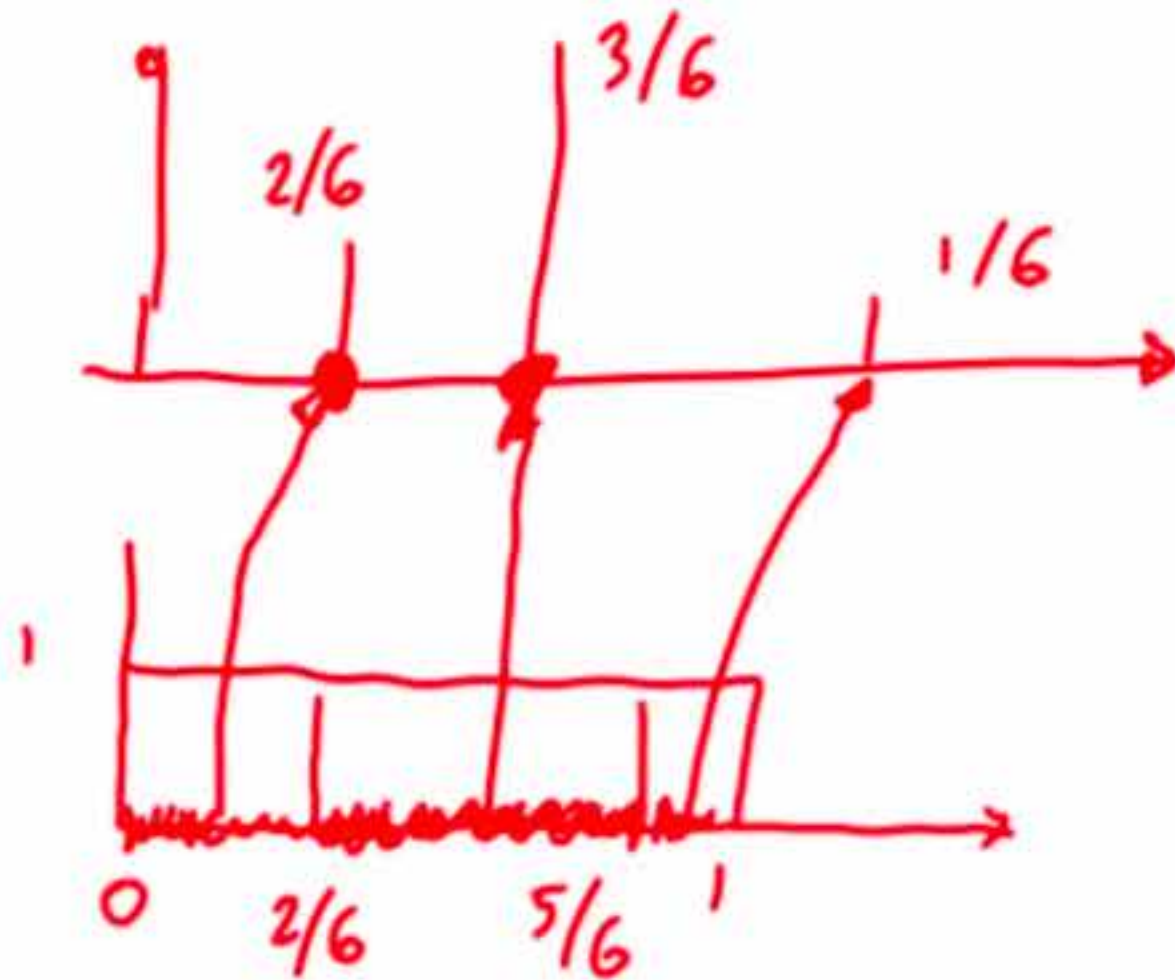


Simulation: Generate sample of X with given CDF $F_X(\cdot)$



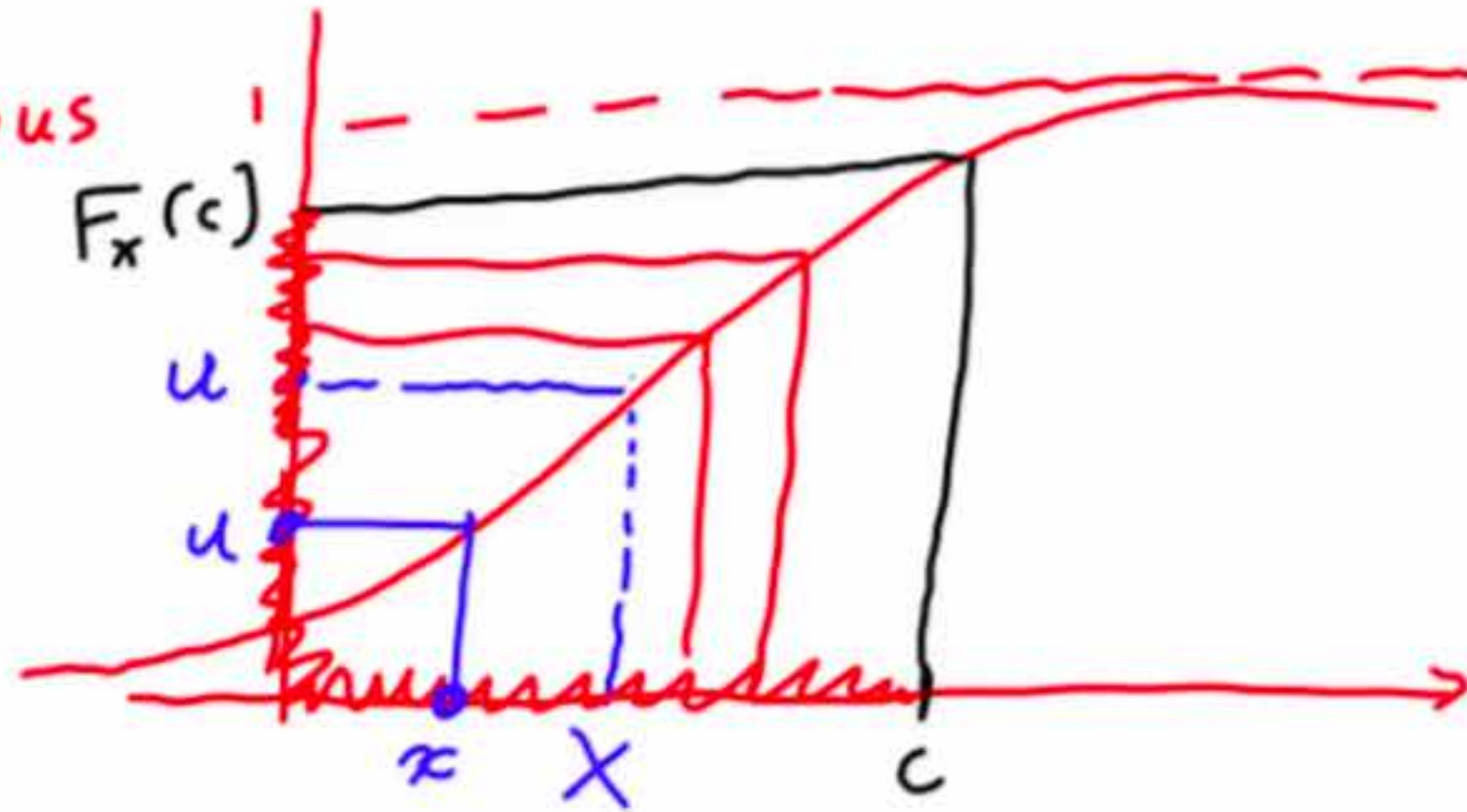
Simulation: Generate sample of X with given CDF $F_X(\cdot)$

- Assume F_X is strictly monotonic

continuous

$$X \leq c \iff U \leq F_X(c)$$

$$\begin{aligned} P(X \leq c) &= P(U \leq F_X(c)) \\ &= F_X(c) \end{aligned}$$



$$X \sim \text{Exp}(1)$$

$$F_X(x) = 1 - e^{-x}$$

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

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

$$-x = \log(1 - u)$$

$$x = -\log(1 - u)$$