

Quiz 10

Let $U \sim \text{Uni}[0, 1]$. Write X as a function of U such that

$$F_X(x) = \begin{cases} 0, & x < 0, \\ x + \frac{1}{2}, & 0 \leq x < \frac{1}{2}, \\ 1, & x \geq \frac{1}{2}. \end{cases}$$

Solution

$$X = \begin{cases} 0, & 0 \leq U \leq \frac{1}{2}, \\ U - \frac{1}{2}, & \frac{1}{2} < U \leq 1. \end{cases}$$