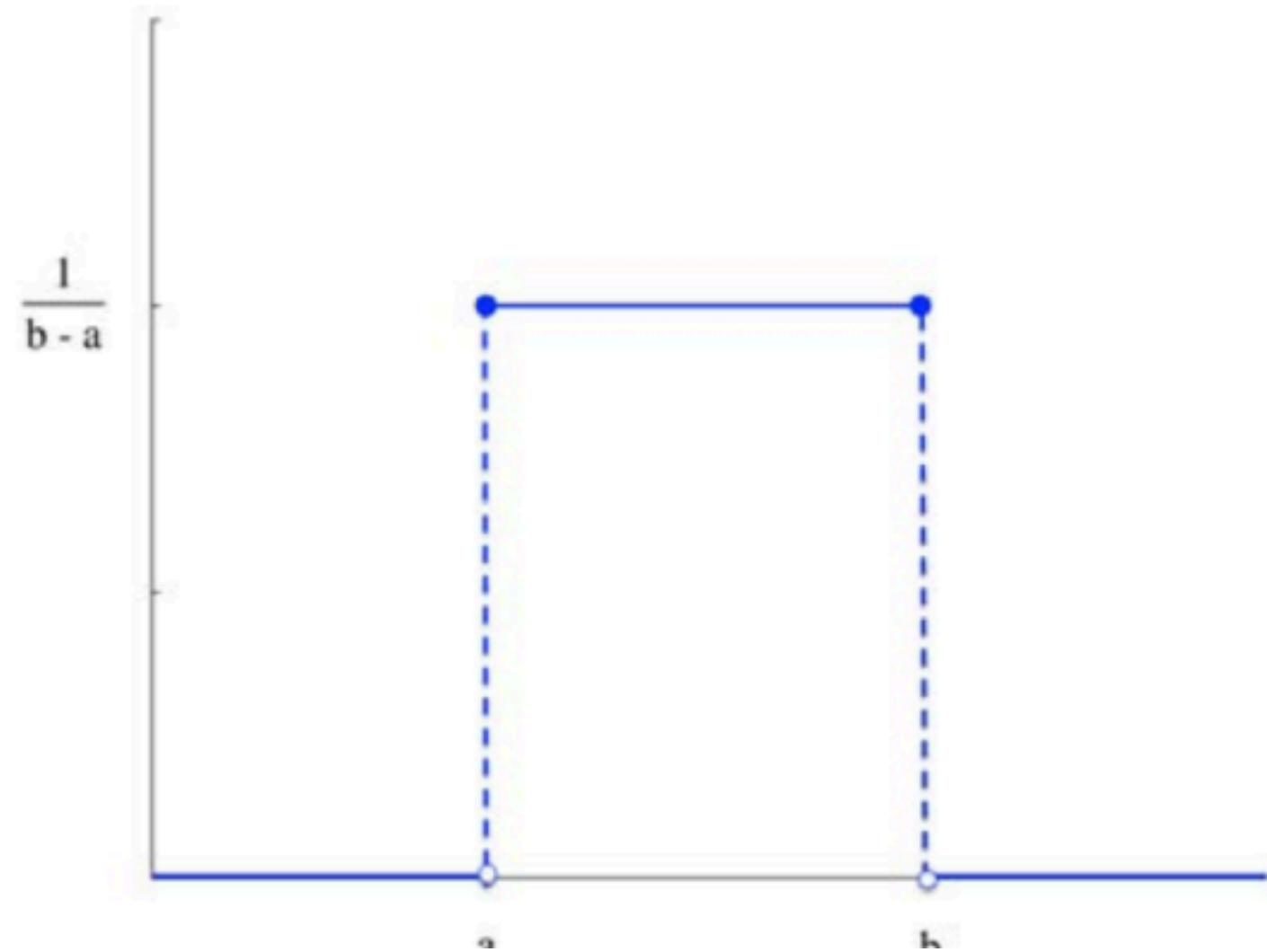
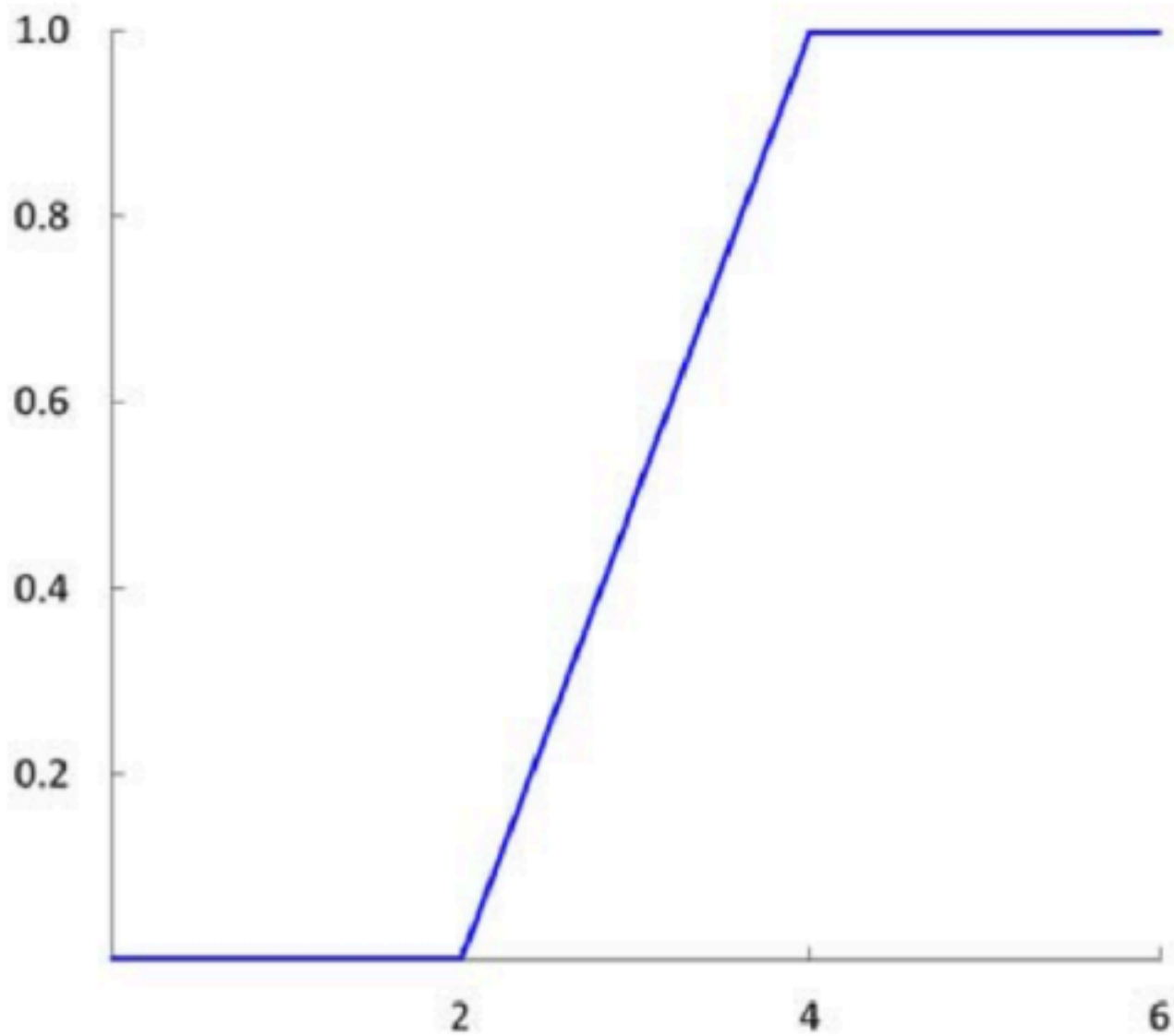


some continuous random variables and their pdfs



uniform distribution $X \sim \text{Unif}(a, b)$





some continuous random variables and their pdfs

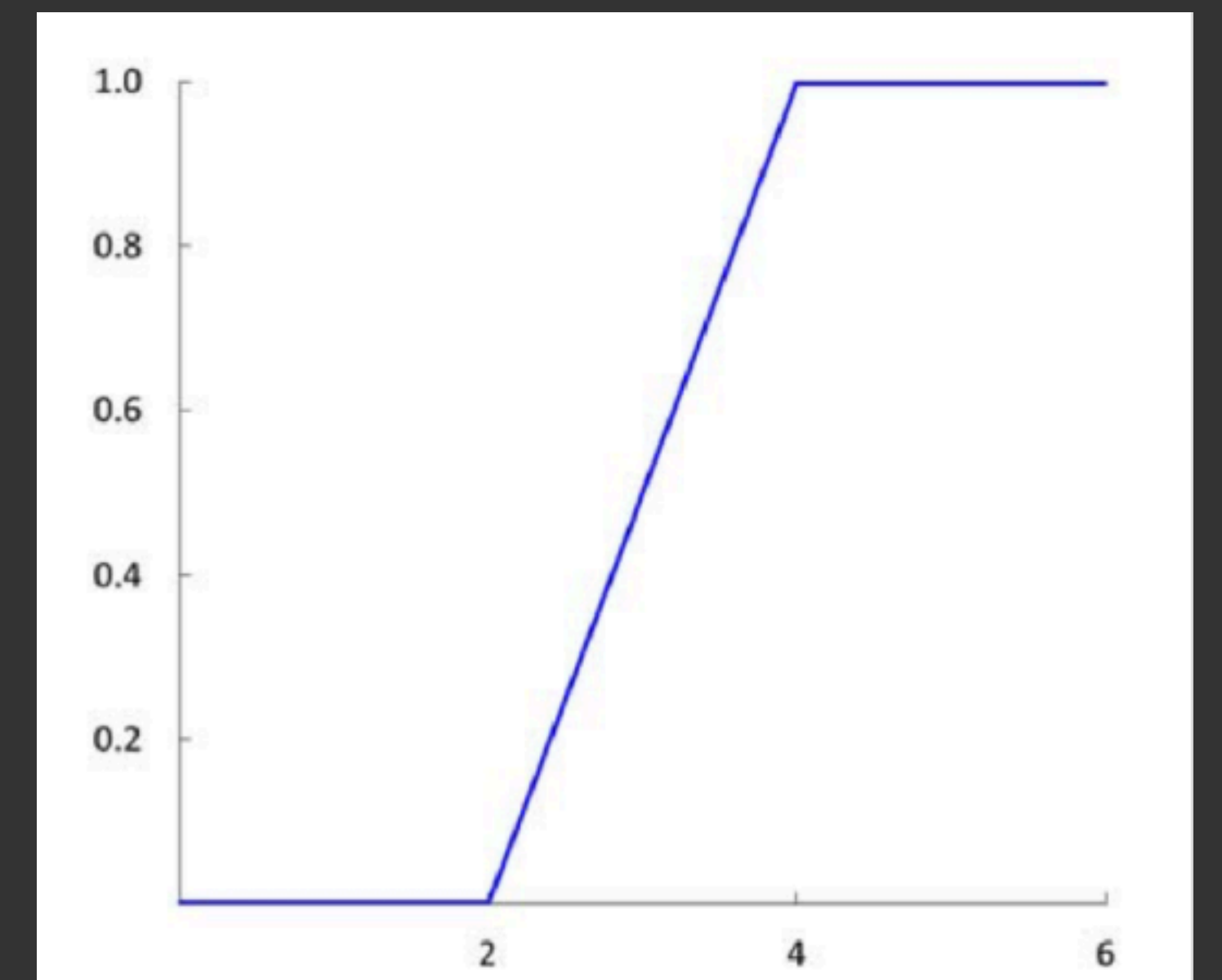
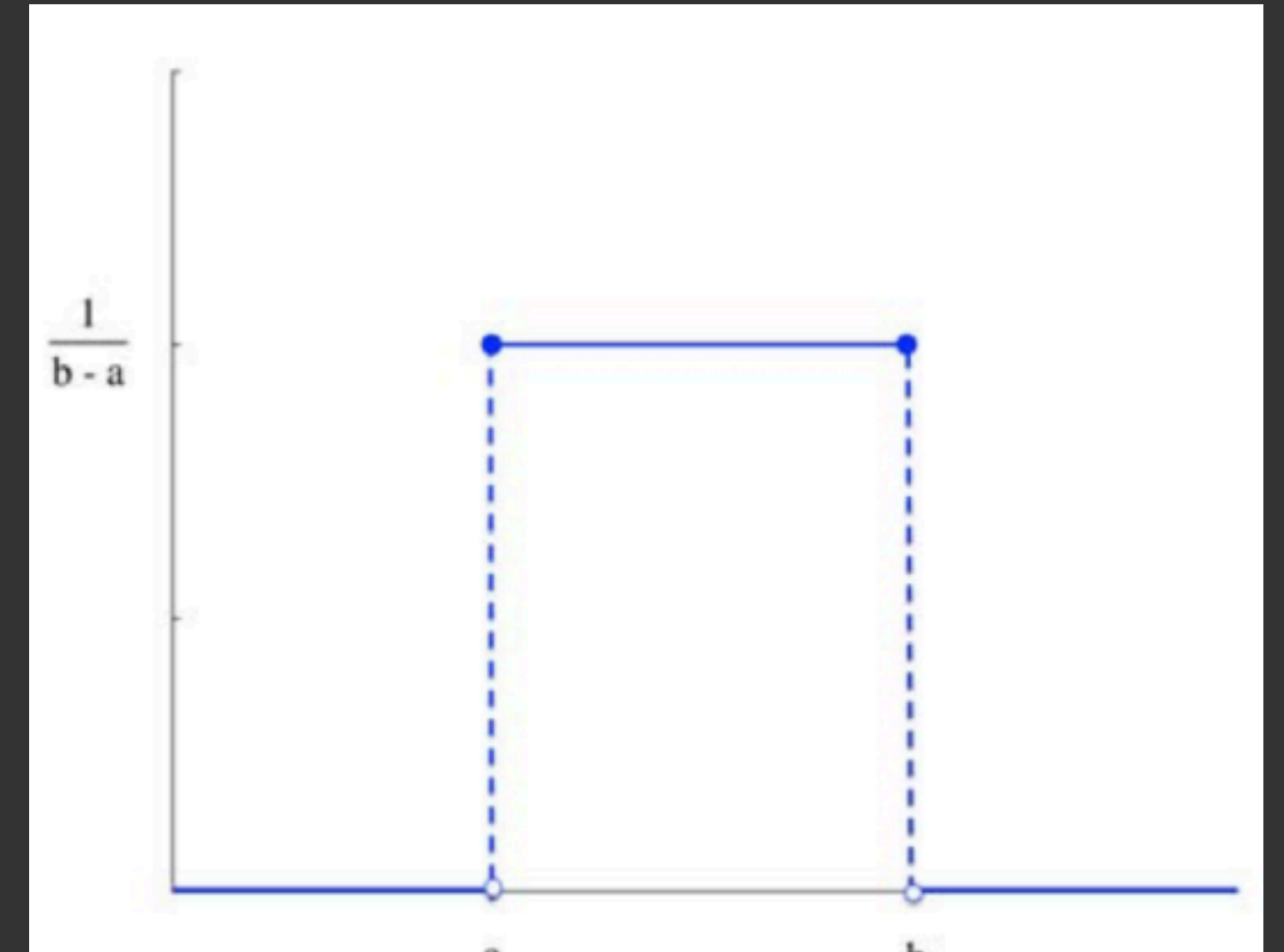
uniform distribution $X \sim \text{Unif}(a, b)$

A continuous random variable X has uniform distribution on the interval $[a, b]$ for values $a \leq b$ if it has the following pdf:

$$f(x) = \begin{cases} \frac{1}{b-a} & \text{for } a \leq x \leq b \\ 0 & \text{otherwise} \end{cases}$$

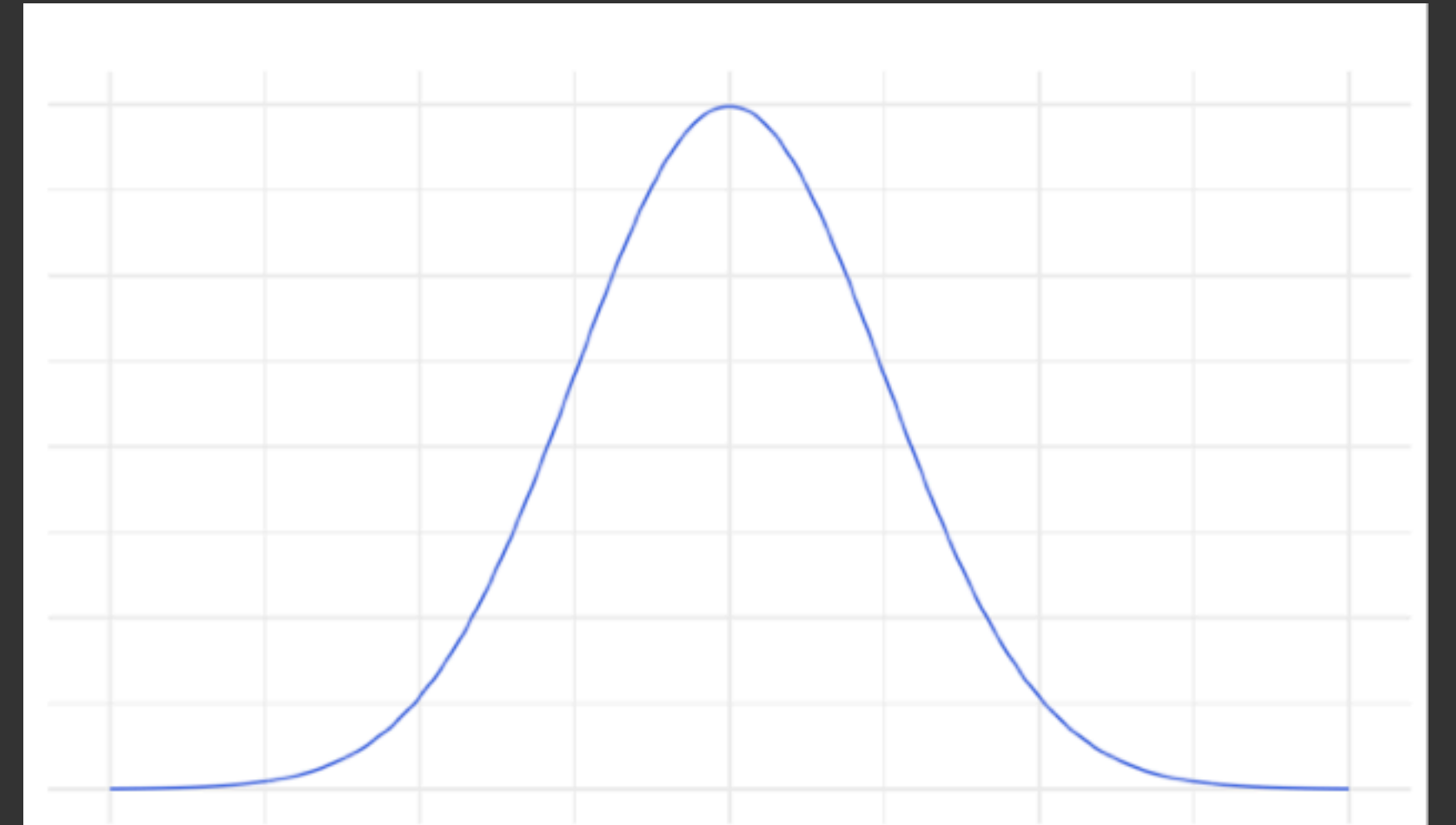
The cdf is given by

$$f(x | a, b) = \begin{cases} 0 & \text{if } x < a \\ \frac{x-a}{b-a} & \text{if } a \leq x \leq b \\ 1 & \text{if } x > b \end{cases}$$



some continuous random variables and their pdfs

normal distribution $X \sim N(\mu, \sigma^2)$



If continuous random variable $X \sim N(\mu, \sigma^2)$ then random variable Z defined as

$$Z = \frac{X - \mu}{\sigma}$$

has standard normal distribution $Z \sim N(0,1)$