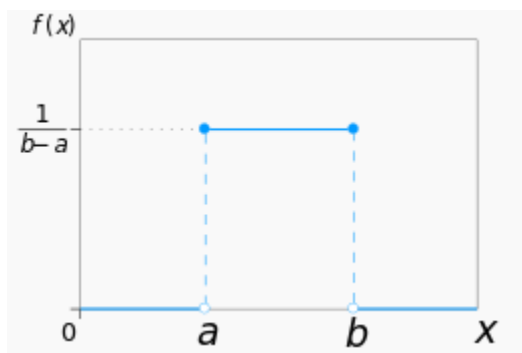


### Uniform Probability Distributions

A uniform distribution is a probability distribution wherein all events of the same length are equally likely. It is commonly abbreviated  $U(a,b)$  where 'a' and 'b' are the minimum and maximum value, respectively.

The uniform distribution is informally called the rectangle distribution because of its shape. The distribution can be described as having length  $b$  minus  $a$  ( $b - a$ ) and height  $\frac{1}{b-a}$ .



For any uniform probability distribution  $U(a,b)$ :

- $\mu_U = \frac{a+b}{2}$
- $\sigma_U = \sqrt{\frac{(b-a)^2}{12}}$
- $P_k = (k - a) \cdot \frac{1}{(b-a)}$