Continuous rv

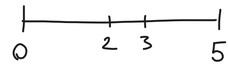
Rainfall : $\mathbb{R}_0^+$

$P(2mm) = 0$

$P(1 < x < 2) = p$

tram runs every 5 mins.

wait time x



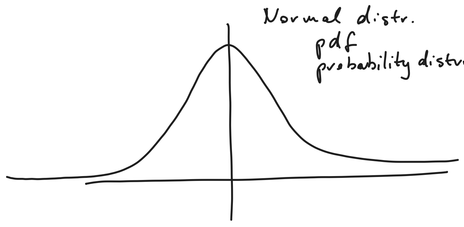
Continuous uniform distribution

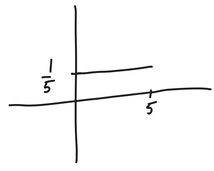
$P(2) = 0$

$P(0 \leq x \leq 5) = 1$

$P(2.5 \leq x) = 0.5$

$P(2 < x < 3) = 0.2$

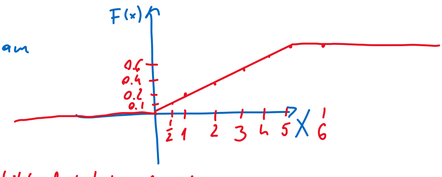




cdf: cumulative distribution function

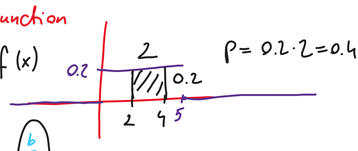
$F(x) = P(x < X)$

tram



pdf: probability distribution function

$F'(x) = f(x)$



$p = 0.2 \cdot 2 = 0.4$

$p(a < x < b) = \int_a^b f(x)\,dx$

area under the curve

$\int_{-\infty}^{\infty} f(x) = 1$

Normal pdf

$p(-a < x < a)$

$\int_{-\infty}^{\infty} f(x) = 1$

1. define cdf
2. pdf is just the derivative of cdf

$\int_a^b f(x)\,dx = F(b) - F(a)$

BASH