

CDF

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Definition

For a random variable X , the **cumulative distribution function** (CDF) of X is defined as $F_X(x) = P(X \leq x)$.

Usage

- $P(a < X \leq b) = P(X \leq b) - P(X \leq a) = F_X(b) - F_X(a)$

Discrete Random Variables

- $F_X(x^+) = F_X(x)$
- $F_X(x^-) = F_X(x) - P(X = x)$

Continuous Random Variables

- $F_X(x^+) = F_X(x) = F_X(x^-)$