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Bernoulli random variable

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X is a **Bernoulli random variable** with parameter p if

$$f_X(x) = p^x(1-p)^{1-x}, x = \{0, 1\}$$

Parameters:

$$\star \quad p \in [0, 1]$$

Syntax:

$$X \sim \text{Bernoulli}(p)$$

Notes:

1. X represents the number of successful results in a Bernoulli trial. A Bernoulli trial is an experiment in which only two outcomes are possible: success, with probability p , and failure, with probability $1 - p$.
2. $E[X] = p$
3. $\text{Var}[X] = p(1 - p)$
4. $M_X(t) = pe^t + (1 - p)$