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uniform (discrete) random variable

Canonical name	UniformdiscreteRandomVariable
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Entry type	Definition
Classification	msc 60-00
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Synonym	uniform random variable
Synonym	discrete uniform distribution

$X$  is a **uniform (discrete) random variable** with parameter  $N$  if

$$f_X(x) = \frac{1}{N}, x = \{1, 2, \dots, N\}$$

Parameters:

$$\star \quad N \in \{1, 2, \dots\}$$

Syntax:

$$X \sim U\{N\}$$

Notes:

1.  $X$  represents the experiment in which all  $N$  outcomes are equally likely to occur.
2.  $E[X] = \frac{N+1}{2}$
3.  $Var[X] = \frac{N^2-1}{12}$
4.  $M_X(t) = \sum_{j=1}^N \frac{1}{N} e^{jt}$