Random variable

A random variable is a variable that takes an uncertain value. Since the event that takes place generating a particular value to the random variable is uncertain, some probability of occurrence can be attached to it.

Discrete/Continuous random variable

Notation:

- X a random variable

- x a particular value

- $P(X = x)$ the probability that X equals the particular value x.

A random variable is *discrete* if it can only assume some numerical values. Example: the results in a test with 10 questions can be $0, 1, 2, ..., 10$.

A random variable is *continuous* when it can assume any value in an interval. Example: time between student arrivals at a professor's office during office hours (in minutes).