Previous Next

## 15.2.4 Expectation and mean



A common measure of a random variable is its mean value which is often called the expectation of the random variable. For a random variable $x$ with PDF $f(x)$ then the mean, $\mu_x$, and equivalently the expectation of $X$, $E[X]$, are defined as,

$$\mu_x \equiv E[X] \equiv \int_{-\infty}^{\infty} x f(x)\, \mathrm{d}x \tag{15.8}$$

Often, the mean value of a function of a random variable is of interest. So, suppose $g(x)$ is a function then,

$$\mu_g \equiv E[g(X)] \equiv \int_{-\infty}^{\infty} g(x) f(x)\, \mathrm{d}x \tag{15.9}$$

Previous Next

## Discussions

All posts sorted by recent activity

## edX

About
Affiliates
edX for Business
Open edX
Careers
News

## Legal

Terms of Service & Honor Code
Privacy Policy
Accessibility Policy
Trademark Policy
Sitemap
Cookie Policy
Your Privacy Choices

## Connect

Idea Hub
Contact Us
Help Center
Security
Media Kit