



## MITx: 6.041x Introduction to Probability - The Science of Uncertainty



Bookmarks

- ▶ Unit 0: Overview
- ▶ Entrance Survey
- ▶ Unit 1: Probability models and axioms
- ▶ Unit 2: Conditioning and independence
- ▶ Unit 3: Counting
- ▶ Unit 4: Discrete random variables
- ▼ Unit 5: Continuous random variables

Unit overview

**Lec. 8: Probability density functions**

Exercises 8 due Mar 16, 2016 at 23:59 UTC

**Lec. 9: Conditioning on an event; Multiple r.v.'s**

Exercises 9 due Mar 16, 2016 at 23:59 UTC

Unit 5: Continuous random variables &gt; Lec. 8: Probability density functions &gt; Lec 8 Probability density functions vertical5



Bookmark

**Exercise: Normal random variables**

(1/1 point)

Choose the correct answer below.

According to our conventions, a normal random variable  $X \sim N(\mu, \sigma^2)$  is a continuous random variable

always.

if and only if  $\sigma \neq 0$ . ✓if and only if  $\mu \neq 0$  and  $\sigma \neq 0$ .

Answer:

When  $\sigma \neq 0$ , the distribution of  $X$  is described by a PDF, and so  $X$  is a continuous random variable. But when  $\sigma = 0$ , then  $X$  has all of its probability assigned to a single point, and therefore it is not a continuous random variable. (For continuous random variables, any single point must have zero probability.)

*You have used 1 of 2 submissions*

**Lec. 10:**  
**Conditioning on a  
random variable;**  
**Independence;**  
**Bayes' rule**

Exercises 10 due Mar  
16, 2016 at 23:59 UTC

**Standard normal  
table**

**Solved problems**

**Problem Set 5**

Problem Set 5 due Mar  
16, 2016 at 23:59 UTC

**Unit summary**

© All Rights Reserved



© edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

POWERED BY  
**OPENedX**

