



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 > Lec. 9: Conditioning on an event; Multiple r.v.'s > Lec 9 Conditioning on an event Multiple r v s vertical4



Bookmark

Exercise: Jointly continuous r.v.'s

(2/2 points)

The random variables X and Y are continuous. Is this enough information to determine the value of $\mathbf{P}(X^2 = e^{3Y})$?

No ▾



Answer: No

The random variables X and Y are jointly continuous. Is this enough information to determine the value of $\mathbf{P}(X^2 = e^{3Y})$?

Yes ▾



Answer: Yes

Answer:

a) There is no information on the relation between the two random variables. If, for example, $X = \sqrt{e^{3Y}}$, the probability is 1, whereas if $X = \sqrt{e^{3Y}} + 1$, then the probability is zero.

b) The set of points on the x - y plane that correspond to the event $X^2 = e^{3Y}$ is a one-dimensional curve, which has zero area, and therefore zero probability.

You have used 1 of 1 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

