

MITx: 14.310x Data Analysis for Social Scientists

Helj



- Module 1: The Basics of R and Introduction to the Course
- Entrance Survey
- Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions
- Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates
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Module 4: Joint, Marginal, and Conditional Distributions & Functions of Random Variable > Functions of Random Variables > Probability Integral Transformation - Quiz

# **Probability Integral Transformation - Quiz**

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## **Question 1**

1/1 point (graded)

Suppose X is a continuous random variable, and is distributed uniformly over the interval [0,75] Let  $Y=F_x(X)$ .

**True or False:** The induced support, or range of  $F_X$  is also [0,75].

True



# **Explanation**

As Professor Ellison explained in class, whatever the support of X,Y lives on [0,1]. This is because the Y is a CDF

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You have used 1 of 1 attempts

# Joint, Marginal, and Conditional Distributions

Finger Exercises due Oct 24, 2016 at 05:00 IST

### <u>Functions of Random</u> Variables

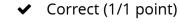
Finger Exercises due Oct 24, 2016 at 05:00 IST

#### Module 4: Homework

Homework due Oct 17, 2016 at 05:00 IST

(A)

- Module 5: Moments of a Random Variable,
   Applications to Auctions,
   Intro to Regression
- Exit Survey



# Question 2

1/1 point (graded)

Suppose X is a binomal random variable, with PDF  $f_x(x)$  and CDF  $F_X(x)$ . Let  $Y=F_X(X)$ .

**True or False:** You can use the probability integral transformation method to find out how Y is distributed.

O True			

# **Explanation**

● False

Since X is a binomal distribution, X is a discrete random variable. This implies that  $F_X$  is not invertible, and hence you cannot use the integral transformation method, because you cannot solve for X, since the inverse is not defined.

Submit You have used 1 of 1 attempts

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