

MITx: 14.310x Data Analysis for Social Scientists

Helj



#### **Bookmarks**

- 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
- Module 4: Joint,
   Marginal, and
   Conditional
   Distributions &
   Functions of Random
   Variable

Module 6: Special Distributions, the Sample Mean, the Central Limit Theorem, and Estimation > The Sample Mean, Central Limit Theorem, and Estimation > The Sample Mean - Quiz

# The Sample Mean - Quiz

☐ Bookmark this page

# **Question 1**

1/1 point (graded)

Which of the following is true about a sample mean? (Select all that apply)

- a. It can be described as the arithmetic average of n random variables from a random sample of size n.
- b. It can be described as the arithmetic average of the realizations of n random variables.
  - c. It only applies to random variables from normal distributions
  - d. It only applies to random variables from uniform distributions



#### **Explanation**

The sample mean is the arithmetic average of the random variables, but also describes the arithmetic average of the realization of those random variables. As Professor Ellison mentioned in the lecture, we have to keep both of these descriptions in mind. C. and D. are incorrect, because the underlying

- Module 5: Moments of a Random Variable,
   Applications to Auctions,
   Intro to Regression
- Module 6: Special
   <u>Distributions, the</u>

   <u>Sample Mean, the</u>
   <u>Central Limit Theorem,</u>
   and Estimation

# <u>Human Subjects and Special</u> Distributions

Finger Exercises due Nov 07, 2016 at 05:00 IST

# The Sample Mean, Central Limit Theorem, and Estimation

Finger Exercises due Nov 07, 2016 at 05:00 IST

#### Module 6: Homework

▶ Exit Survey

distribution of the random variables does not need to be normal or uniform in order to calculate the sample mean.

Submit You have used 1 of 2 attempts

Correct (1/1 point)

## Question 2

1/1 point (graded)

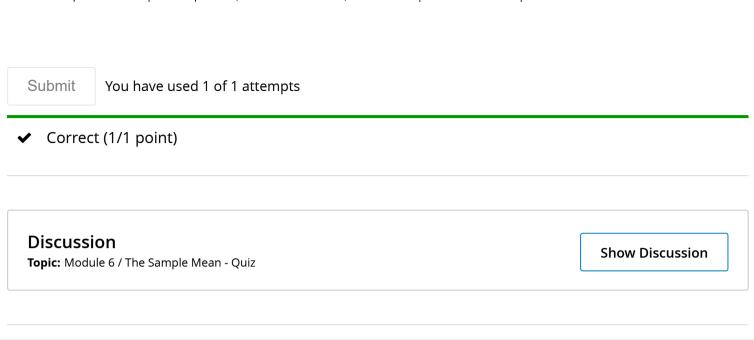
When the sample mean is defined as the arithmetic average of n random variables from random sample of size n, the sample mean will also be a random variable.

a. True

b. False

### **Explanation**

A function of random variables must be a random variable. Being the arithmetic average of n random variables makes the sample mean a function of random variables, so the sample mean must be a random variable.



© All Rights Reserved



© 2016 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.















