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Welcome to the Course

Introduction to R

Introductory Lecture

Finger Exercises due Oct 03, 2016 at 05:00 IST

Module 1: Homework

Homework due Sep 26, 2016 at 05:00 IST

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Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions &gt; Fundamentals of Probability &gt; Probability: Another Example - Quiz

## Question 1

(1/1 point)

In the mathematical notation described in class, factorial, represented by '!', means which of the following?

- ☐ a.  $5!$  Is shorthand for  $5*5$
- ☐ b.  $5!$  Is shorthand for  $5*5*5*5*5$
- ☐ c.  $5!$  Is shorthand for  $1/5$
- ☒ d.  $5!$  Is shorthand for  $5*4*3*2*1$  ✓

### EXPLANATION

A factorial for a number  $X$ , represented as  $X!$ , is the product of all positive integers less than or equal to  $X$ . In other words, take the set all positive integers less than or equal to  $X$  and multiply them together. If this concept is new to you or you need a refresher on this notation, we encourage

you to learn or refresh on some of these concepts before we get too far along with probability and statistics.

*You have used 1 of 2 submissions*

## Question 2

(1/1 point)

True or false: Suppose you have a bag with 50 differently colored balls. Under sampling without replacement, each time that you randomly draw a ball, the probability of drawing any one colored ball is different than the previous draw.

☒ a. True ✓

☐ b. False

### EXPLANATION

True. Under sampling without replacement, each time a certain colored ball is removed from the bag, the probability of drawing any of the remaining colors changes. For example, suppose there is one yellow ball. For the first draw, the probability of randomly selecting the yellow ball is  $1/50$ . Suppose you randomly select a green ball during the first draw. When it comes time for the second draw, there are now 49 differently-colored balls in the bag. So, for the second draw, the probability of randomly selecting the yellow ball is  $1/49$ .

*You have used 1 of 1 submissions*

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