Bookmarks

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

Question 1

(1/1 point)

Which of the following statements are together given as a definition of probability? (Check all that apply)

- [x] a. The probability of each event occurring is greater than or equal to zero for all events in the sample space ✔
- [x] b. The probability of the entire sample space is equal to one. ✔
- [ ] c. The probability of the union of any sequence of disjoint sets of events occurring is equal to one
- [x] d. The probability of the union of any sequence of disjoint sets of events occurring is equal to the sum of the probabilities of those same events ✔

✔

EXPLANATION

As discussed in class, for every event A assigned a number P(A), we define a probability as a collection of numbers P(A) where the following three are true: (1) P(A) is greater than or equal to zero for all A in the sample space S. (2) The sum of each of the P(A) in the sample space S (equivalent to P(S)) is equal to 1. (3) For any sequence of disjoint sets A1, A2, A3, ... the probability of the union of these events occurring is equal to the union of the probabilities of the events occurring.

You have used 1 of 2 submissions

Question 2

(1/1 point)

Suppose that you have P(A), the probability of A. What is meant by the probability of $P(A^c)$ (A-complement)?

- a. The probability of the next most likely outcome
- b. The probability of all outcomes that are not in event A ✔
- c. The probability of any outcome that is contained in A
- d. The probability of any outcome which has some intersection with A

EXPLANATION

The probability of $P(A^c)$ (A complement) is equivalent to the probability of all events that are not included in event A. This can be a useful fact to keep in mind for cases where you know the probability of all outcomes not included in A, $P(A^c)$, and can use this information to calculate the probability of A. For example, suppose that you know that the probability of rain on a given day is 0.6 or 60%. You can use this information to calculate the probability that it does not rain as 1-0.6, which is equal to 0.4 or 40%. (In the way this example is set up, P(does rain)=0.6 is the complement and P(does not rain)=0.4 is the event of interest.)

You have used 1 of 2 submissions