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- Unit 1: Probability models and axioms

Lec. 1: Probability models and axioms
Exercises 1 due Jan 26, 2017 20:59 ART

Mathematical background: Sets; sequences, limits, and series; (un)countable sets.

Solved problems

Problem Set 1
Problem Set 1 due Jan 26, 2017 20:59 ART

- Unit 2: Conditioning and independence

Problem 2 Vertical: Set operations and probabilities

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Problem 2: Set operations and probabilities

3/3 points (graded)

Find the value of $\mathbf{P}\left(A \cup (B^c \cup C^c)^c\right)$ for each of the following cases:

1. The events A, B, C are disjoint events and $\mathbf{P}(A) = 2/5$.

$\mathbf{P}\left(A \cup (B^c \cup C^c)^c\right) =$ 0.4 ✔

2. The events A and C are disjoint, and $\mathbf{P}(A) = 1/2$ and $\mathbf{P}(B \cap C) = 1/4$.

$\mathbf{P}\left(A \cup (B^c \cup C^c)^c\right) =$ 0.75 ✔

3. $\mathbf{P}\left(A^c \cap (B^c \cup C^c)\right) = 0.7$.

$\mathbf{P}\left(A \cup (B^c \cup C^c)^c\right) =$ 0.3 ✔

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✔ Correct (3/3 points)

DISCUSSION

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Discussion

Topic: Unit 1/Problem Set 1 / Set operations and probabilities

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Probability sum of 3 disjoint events

discussion posted 2 days ago by **Mixenia**

Is P(A) + P(B) + P(C) in this case is a universal set and equal to 1 or 3 disjoint sets are a part of a universal set?

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1 response

hchar
2 days ago

Not necessarily. If A, B and C are disjoint events, their union don't necessarily exhaust the sample space. They are, however, definitely subsets of the sample space.

Thank you! That helped a lot

posted 2 days ago by **Mixenia**

btw, disjoint events that exhaust the sample space are special. They form a "partition" of the sample space in such case.

posted 2 days ago by **hchar**

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