



MITx: 6.041x Introduction to Probability - The Science of Uncertainty



Bookmarks

- ▶ Unit 0: Overview
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Lec. 1: Probability models and axioms

Exercises 1 due Feb 10, 2016 at 23:59 UTC

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

Solved problems

Problem Set 1

Problem Set 1 due Feb 10, 2016 at 23:59 UTC

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EXERCISE: SAMPLE SPACE (2/2 points)

For the experiment of flipping a coin, and for each one of the following choices, determine whether we have a legitimate sample space:

 $\Omega = \{\text{Heads and it is raining, Heads and it is not raining, Tails}\}$



Answer: Yes

 $\Omega = \{\text{Heads and it is raining, Tails and it is not raining, Tails}\}$



Answer: No

Answer:

 In the first case, the elements of Ω are mutually exclusive and collectively exhaustive, and therefore Ω is a legitimate sample space.

 For the second case, if the outcome is "Tails and it is not raining," then the outcome "Tails" will have also occurred. Therefore the elements of Ω are not mutually exclusive, and Ω is not a legitimate sample space.

You have used 1 of 1 submissions

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