

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

- Lecture 5: Probability over infinite space.
- Lecture 6: Conditional probability, Partition formula.
- Lecture 7: Independent events, Bayes theorem.
- Lecture 8: Fallacies. Random variables.
- Week-2 Slides: Conditional Probability
- Week-2 Slides: Bayes' Theorem
- Week-2 Slides: Random variables
- Feedback For Week 2
- Quiz: Week 2: Assignment 2
- Week 2: Assignment 2 solutions

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

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Week 2: Assignment 2

The due date for submitting this assignment has passed.

Due on 2021-09-08, 23:59 IST.

As per our records you have not submitted this assignment.

1) Which of the following is a valid sigma algebra?

1 point

1. $\{\Phi, \Omega\}$
2. $\{\Phi, A, A^C, \Omega\}$
3. $\{\Phi, A, A^C, B, B^C, A \cup B, A \cap B, \Omega\}$

- Both 1 and 2.
 Both 1 and 3.
 Both 2 and 3.
 All of 1,2 and 3.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both 1 and 2.

2) Pick two real numbers a, b uniformly at random from infinite sample space $[-1,1]$. What is the probability that $a^2 + b^2 > 1$?

1 point

- $\pi/4$
 $1 - \pi/4$
 $\pi/16$
 $1 - \pi/16$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $1 - \pi/4$

3) Which of the following is true for two events A and B each having non-zero probability of occurrence?

1 point

1. If A and B are mutually exclusive, then they are also independent.
2. If A and B are independent, then they can be mutually exclusive.

- Only 1.
 Only 2.
 Both 1 and 2.
 Neither 1 nor 2.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Neither 1 nor 2.

4) Suppose the Covid-19 RT-PCR test is 95% accurate. Also assume the prevalence of Covid is 0.2, i.e. 20% of the population is Covid infected. If **1 point** your RT-PCR test comes out positive, what is the probability that you are infected?

- 19/20
 19/23
 17/20
 17/23

No, the answer is incorrect.
Score: 0

Accepted Answers:
19/23

5) Suppose you roll a dice twice. What is the probability that the sum of two rolls is an even number given that the first roll was an even number. **1 point**

1 point

- 1
 0
 1/2
 2/3

No, the answer is incorrect.
Score: 0

Accepted Answers:
1/2