Course outline

Assignment 0

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

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

1) Suppose you roll a die twice. What is the probability that you get a prime number in both the rolls?   **1 point**

- ○ 1/2
- ○ 1/4
- ○ 1/6
- ○ 1/36

No, the answer is incorrect.
Score: 0
Accepted Answers:
1/4

2) Suppose you roll a die n times. What is the probability that you get a prime number in all the n rolls?   **1 point**

- ○ $\frac{1}{2}$
- ○ $\frac{1}{2^n}$
- ○ $\frac{1}{6^n}$
- ○ None of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
$\frac{1}{2^n}$

3) In this course, you will study the following case study. In the 1960s, there was a famous TV show called "Let's make a deal", whose host was   **1 point**
Monty Hall. In the show, there are 3 closed doors, one of which hides a car, while the remaining two hide a goat each. Suppose the contestant's name is Bob.
Bob can choose only one door among the three (without opening). He will win the car if he chooses the correct door which hides the car and gets a goat
otherwise. Suppose Bob chooses Door 1. The host Monty then proceeds to open Door 2 to reveal a goat there. Now, Monty gives an option to Bob to either
keep his choice of Door 1 or to switch his choice to Door 3. Which door should Bob choose now, in order to have the best winning chances?

- ○ Door 1, keep his original choice.
- ○ Door 3, switch his choice.
- ○ Does not matter. Both Door 1 and 3 have 50% chance of having the car.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Door 3, switch his choice.

4) The instructor designs a single answer MCQ question with total 4 options. Suppose option number 1 is the correct answer. The instructor   **1 point**
submits this question to the NPTEL staff, who shuffle all the options randomly before adding it to the exam. What is the chance that option number 1 is still
the correct answer after shuffling?

- ○ 1/2
- ○ 1/4
- ○ 3/4
- ○ 1/24

No, the answer is incorrect.
Score: 0
Accepted Answers:
1/4

5) Merlin selects two real numbers and puts them in two envelopes. Using a fair coin toss, he selects one of the envelopes and reveals the   **1 point**
number in that envelope. He asks you whether the number in the other envelope is bigger than the one revealed.

Can you guess correctly with probability greater than 1/2?

- ☐ Yes
- ☐ No
- ☐ Maybe
- ☐ No idea, but I'd like to know

No, the answer is incorrect.
Score: 0
Accepted Answers:
Yes
No idea, but I'd like to know

6) How many people do you need in a room so that the probability of at least two of them sharing the same birthday is greater than 1/2?   **1 point**

- ○ 365
- ○ 100
- ○ 23
- ○ 57

No, the answer is incorrect.
Score: 0
Accepted Answers:
23

7) Consider the statement: In a long coin-tossing game each player will be on the winning side for about half the time, and the lead will pass not   **1 point**
infrequently from one player to the other. This statement

- ○ Is True
- ○ Is False
- ○ Looks weird
- ○ Sounds about right

No, the answer is incorrect.
Score: 0
Accepted Answers:
Is False

8) You are given two concentric circles C1 and C2 with radii r and r/2 respectively. What is the probability, upon randomly choosing a chord of the   **1 point**
bigger circle that it will intersect the smaller one?

- ☐ 1/2
- ☐ 1/3
- ☐ 1/4
- ☐ Cannot be computed

No, the answer is incorrect.
Score: 0
Accepted Answers:
1/2
1/3
1/4