

## Course outline

How does an NPTEL online course work?

### Week 0

### Week 1

- Lecture 1: Introductory examples
- Lecture 2: Examples and Course outline
- Lecture 3: Probability over discrete space
- Lecture 4: Inclusion-Exclusion principle
- Week-1 Slides: Definitions and set operations
- Week-1 Slides: Course outline
- Feedback For Week 1
- Quiz: Week 1: Assignment 1**
- Week 1: Assignment 1 Solutions

### Week 2

### Week 3

### Week 4

### Week 5

### Week 6

### Week 7

### Week 8

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# Week 1: Assignment 1

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) If 8 coins fall to the floor, what is the probability that there are four heads and four tails? **1 point**

- 35/256  
 67/256  
 35/128  
 53/128

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

35/128

- 2) A number is perfect if it is equal to the sum of all its proper divisors (i.e. excluding itself). We roll two standard 6 sided dice. What is the probability that the product of numbers that appear on the two faces is a perfect number? **1 point**

- 5/36  
 1/9  
 1/12  
 2/3

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

1/9

- 3) A pack of 52 cards has been dealt to 4 players. What is the probability that one of the players receives all 13 spades? **1 point**

- $1/\binom{52}{4}$   
  
  $4/\binom{52}{4}$   
  
  $1/\binom{52}{13}$   
  
  $4/\binom{52}{13}$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$4/\binom{52}{13}$

- 4) A deck of cards is shuffled and the cards are drawn one at a time until a Queen appears. If we draw another card, what is more likely, that the next card is Queen of clubs or that it is the King of hearts? **1 point**

- Queen of clubs  
 King of hearts  
 Both of them are equally likely  
 Cannot be determined

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

Both of them are equally likely

- 5) Suppose 3 people get their hats returned in random order. What is the probability that at least one of them gets the correct hat? **1 point**

- 2/3  
 1/3  
 2/7  
 3/4

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

2/3