

# Assignment 3 Probability

Narsupalli Sai Vamsi

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## Abstract

This pdf consists the solution to the question 2.19 from in Papoulis pillai

# Outline

1 Question2.19

2 Solution

## Question 2.19

(Q2.19) A box contains  $m$  white and  $n$  black balls. Suppose  $k$  balls are drawn. Find the probability of drawing at least one white ball.

# Solution

## Solution:

Given that we have  $m$  white and  $n$  black balls and  $k$  balls are drawn from them and we have to find the probability of drawing at least 1 white ball.

$$P(\text{at least 1 white ball}) = 1 - P(\text{all the drawn } k \text{ balls are black})$$

# Solution

Solution:

$$P(\text{all the drawn } k \text{ balls are black}) = \frac{\binom{n}{k}}{\binom{m+n}{k}}$$

$$\text{from this we can say } P(\text{at least 1 white ball}) = 1 - \frac{\binom{n}{k}}{\binom{m+n}{k}}$$