

Assignment Probability

P PAVAN KUMAR

padmanabhunipavan0@gmail.com

FWC22088

IITH Future Wireless Communication (FWC)

probability

December 23, 2022

1 Problems

1. Q:11,16.4,4

1.1 Problem1

Q1: In a certain lottery 10,000 tickets are sold and ten equal prizes are awarded. What is the probability of not getting a prize if you buy (a) one ticket (b) two tickets (c) 10 tickets ?

solution:

Given,

Total no of tickets sold = $S = 10000$

Number of prizes awarded = 10

Number of tickets not awarded = $P = 9990$

let $X = 0 \leq n \leq S$ where $n \in 0,1,2,3,\dots,N$

$$P(X) = \begin{cases} 0 & n < 1 \\ \frac{{}^P C_n}{{}^S C_n} & 1 \leq n \leq P \\ 1 & P < n \leq S \end{cases}$$