

(063) Math 131: Finite Mathematics.Quiz IV(Ch9): August 20, 2007

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Contents

Marks: 15; Time: 20 Minutes

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SERIAL# SECTION #: 01. Marks:

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Q1.(Marks : 9) . 474TB18. The following table for a small car rental company gives the probability that x cars are rented daily:

$X = x$	$P(X = x)$
0	0.05
1	0.10
2	0.15
3	0.25
4	0.20
5	0.15
6	0.10

(a) Find the following Probabilities:

(i) $P(X \geq 2) = \text{-----}$

(ii) $P(X \neq 2) = \text{-----}$

(iii) $P(2 < X < 6) = \text{-----}$

(b) Find the expected value $\mu = E(X)$.

(c) Find the variance $\sigma^2 = Var(X)$.

Q.2.

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6.(Binomial Disribution) .(Marks : 6) . During a certain medical campaign a random sample of 7 people was drawn from a large population of whom 70 % are smokers.

What is the probability that at most (maximum) 2 people in the sample will be smokers? Do Not Use Binomial Table.

$[X \sim Bin(n, p) : f(x) = \binom{n}{x} p^x q^{(n-x)}$, where
 $\binom{n}{x} = \frac{n!}{[x!][(n-x)!]}$, $0 \leq p \leq 1$,
 $(q = 1 - p)$, $x = 0, 1, 2, 3, \dots, n]$.

$P(X \leq 2) = \text{-----}$