Lab 3

Unit 5: Random variable and mathematical expectation

1. The number of failure of a computer system in a week of operation has the following pmf;

No of failure	0	1	2	3	4	5	6
probability	0.18	0.28	0.25	0.18	0.06	0.04	0.01

Find E(X), E(XX^2) , Var(X), E(2X+3), Var(2X+3)

2.

Number of computers	0	100	200	300	400	500
Probability	0.05	0.20	0.30	0.25	0.15	0.05

What is the probability of

a. 300 computers being sold in a given month?

b. 400 or 500 computers being sold in a given month?

c. At least 300 computers being sold in a given month?

d. Determine the expected numbers of computers demanded and standard deviation of computers demanded per month.

3. Construct a probability distribution based on the following frequency distribution based on the following frequency distribution and compute the expected value, variance and standard deviation of the outcome.

Outcome	102	105	108	111	114	117

Frequency	10	20	45	15	20	15