Binomial Distribution

Question 1- A binomial variable X satisfies the relation $9P(X=4) = P(X=2)$ when $n=6$. Find the value of the parameter p and $P(X=1)$.

Question 2- Comment on the following statement:
For a Binomial distribution, mean is 6 and variance is 9.

Question 3- 9f 10% of the bolts produced by a machine are defective, determine the probability that out of 10 bolts chosen at random
(i) 1 (ii) None (iii) atmost 2 bolts will be defective.

Question 4-(a) Out of 800 families with 4 children each, how many families would be expected to have
(i) 2 boys and 2 girls (ii) atleast one boy
(iii) no girl (iv) atmost two girls?
(b) Out of 800 families each having 5 children, how many you expect to have
(i) 3 boys (ii) 5 girls (iii) either 2 or 3 boys.

Question 5- Four person in a group of 20 are graduates. If 4 persons are selected at random from 20, find the probability that

(i) all are graduates (ii) atleast one is graduate.

Question 6- Fit a binomial distribution for the following data:

x:	0	1	2	3	4	5
f:	2	14	20	34	22	8

Question 7- If the mean of a binomial distribution is 3 and the variance is $\frac{3}{2}$, find the probability of obtaining atleast 4 successes.

Question 8- If the probability of a defective bolt is 0·1, find (a) the mean (b) the standard deviation for the distribution in a total of 400 bolts.

Question 9- Ramesh takes a step forward with probability 0·4 and backward with probability 0·6. Find the probability that at the end of 11 steps, he is one step away from starting point