Assignment 2

Q.1 The values of independent variable x and dependent value y are given below:

X	Y
0	2
1	3
2	5
3	4
4	6

Find the least square regression line y=ax+b. Estimate the value of y when x is 10.

Q.2 What is the goal of the support vector machine (SVM)? How to compute the margin.
Q 3. What is the role of radial basis function i separating nonlinear patterns?
Q4. Estimate conditional probabilities of each attributes {colour, legs, height, smelly} for the species classes: { M, H} using the data given in the table, Using these probabilities estimate the probability values for the new instance -

No	Colour	Legs	Height	Smelly	Species
1	White	3	Show	Yes	M
2	Green	2	Tall	No	M
3	Green	3	Short	Yes	M
4	White	3	Show	Yes	M
5	Green	2	Short	No	H
6	White	2	Tall	No	H
7	white	2	3“all	No	H
8	White	2	Short	Yes	H

Q5. Explain Naive Bayes classifier and Bayesian belief networks.

Q6. Prove that how maximum likelihood (Bayesian learning) can be used in any learning algorithms that are used to minimize the squared error between actual output hypothesis and predicted output hypothesis.