1. A sales manager collected the following data on annual sales and years of experience:

Amount of Sales ($1000s)	92	103	111	123	117	136
Years of Experience	4	6	8	10	11	13

(a) Calculate the correlation co-efficient "r" and make comment.   **[2]**
(b) Develop an estimated linear regression equation and make comment.   **[2+1]**
(c) If the experience of a worker is 9, what would be the estimated sales? **[1]**

2. More than 50 million guests stay at bed and breakfasts (B&Bs) each year. The website for the Bed and Breakfast Inns of North America, which averages three visitors per minute.
(a) Compute the probability of no website visitors in a one-minute period.   **[2]**
(b) Compute the probability of one or more visitors in a 30-second period.   **[2]**

3. The probability distribution of the random variable X is given below. Calculate   **[6]**

x	1	3	4	5	8	10
P(x)	0.2	0.15	0.2	0.15	0.2	0.1

a) P(X=5)   b) P(X>3)   c) P(X=4 | X≤7)   d) Mean and standard deviation of X.

4. Assume that a particular detection system has a 0.8 probability of detecting a missile attack. Use the binomial probability distribution to answer the following questions.
 (a) What is the probability that a single detection system will detect an attack?   **[2]**
 (b) If two systems are installed, what is the probability that at least one will detect the attack? **[2]**