P&S   Mid & Assignment Questions

1. Fit a straight line to the data

x	1	3	5	7	9
y	1.5	2.8	4.0	4.7	6.0

2. Fit a second degree polynomial to the data

x	1	2	3	4	5
y	10	12	8	10	14

3. Fit a curve of the form $y = ae^{bx}$ to the data

x	77	100	185	239	285
y	2.4	3.4	7.0	11.1	19.6

4. Calculate the Carl pearson Coefficient to the data

X	38	45	46	48	35	38	46	32	36	38
Y	28	34	38	34	36	26	28	29	25	36

5. Calculate rank correlation Coefficient to the data

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

6. If $\Sigma X = 11.34$, $\Sigma Y = 20.78$, $\Sigma X^2 = 12.16$, $\Sigma y^2 = 84.96$, $\Sigma XY = 22.13$ are quantities of 200 pairs of observations. Compute the equation $Y = a + bX$ and find Y at $X = 150$.

7. The mean life of a sample of 100 light tubes produced by a Company is found to be 1560 hrs with a population S.D of 90 hrs. Test the hypothesis for $\alpha = 0.05$ that the mean life time of tubes produced by the company is 1580 hrs.

8. The average marks scored by 32 boys is 72 with a S.D of 8. While that for 36 girls is 70 with a S.D of 6. Does this indicate that the boys perform better than girls at level of significance 0.05.

9. A manufacturer claims that at least 95% of the equipment which he supplied to a factory conformed to specifications. An examination of sample of 200 pieces of equipment revealed that 18 were faulty. Test his claim at 5% level of significance.

10. In a random sample of 1000 persons from town A, 400 are found to be consumers of wheat. In a sample of 800 from town B, 400 are found to be consumers of wheat. Do these data reveal a significant difference between town A and B, so far as the proportions of wheat consumers is concerned.