QUESTIONS

1. The average number of days survived by mice inoculated with 5 strains of typhoid organisms along with their standard deviation and number of mice involved in each experiment is given below. On the basis of these data, what would be your conclusions regarding the strains of typhoid organisms ?

Strains of typhoid	A	B	C	D	E
No. of mice, n_i	10	6	8	11	5
Average, $\overline{y_i}$	10.9	13.5	11.5	11.2	15.4
Standard deviation, s_i	12.72	5.96	3.24	5.65	3.64

2. (a) A manufacturing company has purchased three new machines of different makes and wishes to determine whether one of them is faster than the others in producing a certain outupt. Five-hourly production figures are observed at random from each machine and the results are as follows.

	Machine A_1	Machine A_2	Machine A_3
Observations	25	31	24
	30	39	30
	36	38	28
	38	42	25
	31	35	28

Use analysis of variance technique and determine whether the machines are signifacntly different in their mean speeds. Use $\alpha = 5\%$.

(b) Analyse the above data after shifting the origin to 30. How are the results in Part (a) affected ? Explain.

3. The following table gives quality rating of ten service stations by five professional raters.

RATER	SERVICE STATION									
	1	2	3	4	5	6	7	8	9	10
A	99	70	90	99	65	85	75	70	85	92
B	96	65	80	95	70	88	70	51	84	91
C	95	60	48	87	48	75	71	93	80	93
D	98	65	70	95	67	82	73	94	86	80
E	97	65	62	99	60	80	76	92	90	89

Analyse the data and discuss whether there is any significant difference between raters or between service stations.