

Probability and Statistics (3130006) TUTORIAL 2: BASIC STATISTICS

1. Calculate the standard deviation of the weights (in Kg) of 10 persons: 45, 49, 55, 50, 41, 44, 60, 58, 53, 55. **Ans: 5.967**
2. The Mean and Standard deviation of 100 items are found to be 40 and 10. At the time of calculations, two items are wrongly taken as 30 and 72 instead of 3 and 27. Find the correct Mean and correct Standard deviation. **Ans: 39.28, 10.18**
3. The Mean & Standard deviation of distributions of 100 and 150 items are 50, 5 & 40, 6 respectively. Find the Mean and Standard deviation of all the 250 items taken together. **Ans: 44, 7.46**
4. A sample of 90 values has a Mean of 55 and a Standard deviation of 3. A second sample of 110 values has a Mean of 60 and a Standard deviation of 2. Find the Mean and Standard deviation of the combined sample of 200 values. **Ans: 3.53**
5. Two automatic filling machines A and B are used to fill a mixture of cement concrete in a beam. A random sample of beams on each machine showed the following information:

Machine A	32	28	47	63	71	39	10	60	96	14
Machine B	19	31	48	53	67	90	10	62	40	80

Find the standard deviation of each machine and also comment on the performances of the two machines.

Ans: $\sigma_A = 25.495$, $\sigma_B = 24.429$, $CV_A = 55.423\%$, $CV_B = 48.858\%$

6. The runs scored by two batsman A and B in 9 consecutive matches are given below:

A	85	20	62	28	74	5	69	4	13
B	72	4	15	30	59	15	49	27	26

Which of the batsman is more consistent? **Ans: $\sigma_A = 30.37$, $\sigma_B = 21.18$, $CV_A = 75.925\%$, $CV_B = 64.18\%$**

7. Find Mean and Standard deviation of the following distribution: **Ans: Mean=30.21, S.D.=7.94**

Age (in years)	<20	<25	<30	<35	<40	<45	<50
No. of persons	0	170	280	360	405	445	480

8. Define: Skewness. Calculate Karl Pearson's coefficient of Skewness from the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of candidates	10	15	24	25	10	10	6

Ans: 0.0476

9. Karl Pearson's measure of Skewness of a distribution is 0.5. Its Median and Mode are respectively 42 and 36. Find the coefficient of variation. **Ans: 40**
10. In a distribution, Mean=65, Median=70, Coefficient of Skewness= -6. Find the Mode and Coefficient of variation. **Ans: Mode=80, CV=39.78%**