

Department of Mathematical Sciences
Rajiv Gandhi Institute of Petroleum Technology, Jais

Tutorial Set-5

Subject: Statistical Methods & Data Analysis (MA 231)

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1. The following is the record number of bricks laid each day for 20 days by a bricklayer.

700	675	725	625	650	700	650	700	600	650
550	600	575	550	650	600	550	525	625	600

Calculate the average number of bricks laid each day. Also, find median, mode and S.D.

2. The frequency distribution of weight in grams of mangoes of a given variety is given below.

Weight in grams:	410-419	420-429	430-439	440-449	450-459	460-469	470-479
Number of mangoes:	14	20	42	54	45	18	7

Calculate the average and median weight of a mango.

3. An incomplete distribution is given below:

Variable:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency:	10	20	?	40	?	25	15

Given the total frequency is 170 and median is 35, find the missing frequencies and mean.

4. Calculate mean, mode, median and S.D. for the following data.

Class Interval	Frequency	Class Interval	Frequency
100-110	4	150-160	25
110-120	7	160-170	16
120-130	15	170-180	10
130-140	24	180-190	6
140-150	40	190-200	3

5. During the 10 weeks of a session, the marks obtained by two candidates, Sheoran and Dhanda, taking the Statistical Methods course are given below:

Sheoran:	58	59	60	54	65	66	52	75	69	52
Dhanda:	87	89	78	71	73	84	65	66	56	46

Who is better scorer — Sheoran or Dhanda? Who is more consistent?

6. Two brands of tyres are tested with the following results:

Life (in '000 miles):	20-25	25-30	30-35	35-40	40-45
No. of tyres of brand } X	1	22	64	10	3
} Y	0	24	76	0	0

Which brand of tyres have greater average life and more variability? Which brand of tyres would you use on your fleet of trucks?

7. Calculate the quartiles and Bowley's measure of skewness for the following data:

Marks	No. of students	Marks	No. of students
Above 0	180	Above 60	65
Above 15	160	Above 75	20
Above 30	130	Above 90	5
Above 45	100		

8. Compute Bowley's measure of skewness. Also find the Pearson's coefficient of skewness and kurtosis.

Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students:	5	6	11	21	35	30	22	18

9. Previously, De Anza statistics students estimated that the amount of change daytime statistics students carry is exponentially distributed with a mean of \$0.88. Suppose that we randomly pick 25 daytime statistics students.

(a) In words, $X =$ _____

(b) $X \sim$ ___ (___, ___)

(c) In words, $\bar{X} =$ _____

(d) $\bar{X} \sim$ ___ (___, ___)

(e) Find the probability that an individual had between \$0.80 and \$1.00.

(f) Find the corresponding probability given a sample of 36.

10. From the population of 125 items with mean of 105 and a standard deviation of 17, 64 items were chosen.

(a) What is the standard error of the mean?

(b) What is the $P(107.5 < \bar{X} < 109)$?