Sardar Vallabhbhai Patel Institute of Technology, Vasad

Subject: Probability and Statistics Subject Code: 310006

Tutorial 3: Basic Statistics: Moments skewness

Note: Example numbers 1, 2, 5, 7, 8, 10, 11 will be solved in the tutorial. The remaining examples are for self-practice.

Q.1 Calculate the coefficient of variance for the following data:

Class interval:	0-10	10-20	20-30	30-40	40-50
Frequency:	5	7	2	3	3

Q.2 Calculate the first four moments about the mean of the following data:

X:	5	10	15	20	25
f:	6	10	14	6	4

Q.3 Calculate the first four moments about the mean of the following data:

X:	0	1	2	3	4	5	6	7	8
Y:	1	8	28	56	70	56	28	8	1

Q.4 Define moments about the assumed mean A. Obtain fist four moments about arbitrary origin from the following table:

Scores:	50-60	60-70	70-80	80-90	90-100
Players:	8	11	18	09	04

Q.5 Find the coefficient of skewness based on the Method of Moments for the following data:

Class:	0-10	10-20	20-30	30-40	40-50
Frequency:	13	20	30	25	12

Q.6 The following data relate to the profits of 1,000 companies:

Profits Rs. in thousands	100-120	120-140	140-160	160-180	180-200	200-220	220-240
No. of Companies:	17	53	199	194	327	208	02

Calculate the coefficient of skewness.

Q.7 For a group of 10 items, Σx = 452, Σx 2 = 24270, $and\ mode$ = 43.7. Find Karl Pearson's coefficient of Skewness.

Q.8 An analysis of monthly wages paid to workers in two firms A and B belong to the same industry gave the following results.

	Firm A	Firm B
No. of wages earners	986	548
Average Monthly wages	Rs. 52.5	Rs. 47.5
Variance of distribution of wages	100	121

(a) Which firm pays out large amounts as wage bill?

(b) In which firm there is greater variability in individual wages?

Q.9 Goal scored by two teams A and B in a football season were as follows:

No. of goals scored in a match	0	1	2	3	4
No. of matches played by team A	27	9	8	5	4
No. of matches played by team B	17	9	6	5	3

Find out which team is more consistent.

Q.10 The runs scored by two batsmen A and B in 10 matches are given in the following table:

A:	14	13	26	53	17	29	79	36	84	49

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<tr><td>B:</td><td>37</td><td>22</td><td>56</td><td>52</td><td>14</td><td>10</td><td>37</td><td>48</td><td>20</td><td>4</td></tr>
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Who is more consistent?
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<tr><td>Q.11</td><td>The arithmetic means of runs scored by three batsmen A, B and C, in the same series of 10 innings, are 50, 48 and 12 respectively. The standard deviations of their runs are 15, 12 and 2 respectively. Who is the most consistent of the three?</td></tr>
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