

Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Department of Mathematics

ASSIGNMENT

Degree & Branch	BE/B.Tech - CSE & IT	Semester	IV
Subject Code & Name	UMA1478 - Probability and Statistics	Regulation:	2018

K3	1. A simple sample of heights of 6400 English men has a mean of 170 cm and a S.D of 6.4 cm while a simple sample of heights of 1600 Americans has a mean of 172 cm and S.D of 6.3 cm. Do the data indicate that Americans are, on the average, taller than the English men?	CO3
K3	2. A random sample of 500 pineapples was taken from a large consignment and 65 were found to be bad. Show that the S.E of the proportion of bad once in a sample of this size is 0.015 and deduced that the percentage of bad pineapples in the consignment almost certainly lies between 8.5 and 17.5.	CO3
K3	3. A random sample of 10 boys had the following I. Q's: 70, 120, 110, 101, 88, 83, 95, 98, 107, 100. Do these data support the assumption of a population mean I.Q of 100? Find a reasonable range in which most of the mean I.Q values are samples of 10 boys lie.	CO3
K3	4. Below are given the gain in weights (in lbs) of pigs fed on two diets A and B. Gain in weight Diet A: 25, 32, 30, 34, 24, 15, 32, 24, 30, 31, 35, 25 Diet B: 44, 34, 22, 10, 47, 31, 40, 30, 32, 35, 18, 21, 35, 29, 22 Test, if the two diets differ significantly as regards their effect on increase in weight.	CO3
K3	5. Two independent sample of 8 and 7 items respectively had the following values of the variable. Sample 1: 9, 11, 13, 11, 15, 9, 12, 14 Sample 2: 10, 12, 10, 14, 9, 8, 10 Do the two estimates of population variance differ significantly at 5% level of significance?	CO3
K3	6. The theory predicts the proportion of beans in the four groups A, B, C and D should be 9:3:3:1. In an experiment among 1600 beans, the number in the four groups were 882, 313, 287 and 118. Does the experimental result support the theory?	CO3

	<p>7. Fit a Binomial distribution for the following data and test the goodness of fit:</p> <table><tr><td>X :</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>Total</td></tr><tr><td>f :</td><td>5</td><td>18</td><td>28</td><td>12</td><td>7</td><td>6</td><td>4</td><td>80</td></tr></table>	X :	0	1	2	3	4	5	6	Total	f :	5	18	28	12	7	6	4	80	CO3										
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K3	<p>8. Two researchers adopted different sampling techniques while investigating the same group of students to find the number of students falling in different intelligence levels. The results are as follows:</p> <table><tr><th rowspan="2">Researchers</th><th colspan="4">No of students in each level</th><th rowspan="2">Total</th></tr><tr><th>Below Average</th><th>Average</th><th>Above Average</th><th>Genius</th></tr><tr><td>X</td><td>86</td><td>60</td><td>44</td><td>10</td><td>200</td></tr><tr><td>Y</td><td>40</td><td>33</td><td>25</td><td>2</td><td>100</td></tr><tr><td>Total</td><td>126</td><td>93</td><td>69</td><td>12</td><td>300</td></tr></table> <p>Would you say that the sampling techniques adopted by two researches are significantly different?</p>	Researchers	No of students in each level				Total	Below Average	Average	Above Average	Genius	X	86	60	44	10	200	Y	40	33	25	2	100	Total	126	93	69	12	300	CO3
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