

Applied Statistics

Digital Assignment

- 1) The average monthly sales, based on past experience of a particular brand of toothpaste in departmental stores is Rs 200. An advertisement campaign was made by the company and then a sample of 26 departmental stores was taken at random and found that the average sales of the particular brand of toothpaste are Rs 216 with a standard deviation of Rs 8. Does the campaign have helped in promoting the sales of a particular brand of toothpaste?
- 2) A sample of 10 students from a school was selected. Their scores in a particular subject are 72, 82, 96, 85, 84, 75, 76, 93, 94 and 93. Can we support the claim that the class average score is 90?
- 3) Two types of batteries are tested for their length of life (in hours). 14 type A batteries have an average life of 94 hours and a standard deviation of 16 hours. 13 type B batteries have an average life of 86 and a standard deviation of 20. Is there any significant difference between the average life of the two batteries at a 5% level of significance?
- 4) A genetics engineer was attempting to cross a tiger and a cheetah. She predicted a phenotypic outcome of the traits she was observing to be in the following ratio 4 stripes only: 3 spots only: 9 both stripes and spots. When the cross was performed and she counted the individuals she found 50 with stripes only, 41 with spots only and 85 with both. According to the Chi-square test, did she get the predicted outcome?
- 5) A statistician wishes to test the claim that the standard deviation of the weights of firemen is less than 25 pounds. She selected a random sample of 20 firemen and found $s=23.2$ pounds. Assuming that the weights of firemen are normally distributed, test the claim of the statistician at the 0.05 level of significance.