

Written Activity on Confidence Intervals

- Find the value of $z_{\alpha/2}$ given
 - 92% degree of confidence
 - 98% degree of confidence
- In each case, find \hat{p} and \hat{q}
 - $n = 75$ and $X = 20$
 - $n = 110$ and $X = 19$
- Find the value of $t_{\alpha/2}$ given
 - $n = 37$ for the 85% confidence interval for the mean
 - $n = 15$ for the 94% confidence interval for the mean
- The drug Ziac is used to treat hypertension. In a clinical test, 3.2% of 221 Ziac users experienced dizziness (based on data from Lederle Laboratories). Construct a 99% confidence interval estimate of the percentage of all Ziac users who experience dizziness.
- In a study of 32 ninth-grade students, the mean number of hours per week that they played video games was 10.6. The standard deviation of the population was 1.4. Find the 95% confidence interval of the mean of the time playing video games.
- Maximum breadth of samples of male Egyptian skulls from 4000 B.C. and 150 A.D. (based on data from *Ancient Races of the Thebaid* by Thomson and Randall-Maciver):

4000 B.C. : 131 119 138 125 129 126 131 132 126 128 128 131

150 A.D. : 136 130 126 126 139 141 137 138 133 131 134 129

Changes in head sizes over time suggest interbreeding with people from other regions. Find the sample standard deviation and use a 90% confidence interval to determine whether the head sizes appear to have changed from 4000 B.C. to 150 A.D. Explain your result.