

Classroom Voting Questions: Elementary Statistics

Comparing Two Proportions

1. A two proportion z interval was constructed for the difference in the two population proportions, p_1 and p_2 . The resulting 99% confidence interval was $(-0.004, 0.12)$. A conclusion that could be drawn is:
 - (a) There is no significant difference between p_1 and p_2 .
 - (b) There is a significant difference between p_1 and p_2 .
 - (c) The range of possible differences between the two proportions could be from a 0.4% difference with p_2 being larger up to a 12% difference with p_1 being larger.
 - (d) Both (a) and (c) are correct.
 - (e) Both (b) and (c) are correct.
2. Two methods are used to predict the shear strength for steel plate girders. Each method is applied to nine specific girders and the ratio of predicted load to observed load is calculated for each method and each girder. What kind of t -test should we use to compare these data?
 - (a) Independent t -test
 - (b) Paired t -test
3. Two catalysts are being analyzed to determine how they affect the mean yield of a chemical process. Catalyst 1 is used in the process eight times and the yield in percent is measured each time. Then catalyst 2 is used in the process eight times and the yield is measured each time. What kind of t -test should be used to compare these data?
 - (a) Independent t -test
 - (b) Paired t -test
4. Six river locations are selected and the zinc concentration is determined for both surface water and bottom water at each location. What kind of t -test should be used to compare these data?
 - (a) Independent t -test
 - (b) Paired t -test