

In Class Activity

Method Matching

For each scenario on the left, select the best statistical method to use from the list on the right. Use each method once. Do NOT solve the problems.

1. Use a sample of 150 to estimate the average height of college women basketball players with 95% confidence
2. A study done in 1966 of British doctors between the ages of 55 and 64 found that 28 of the 5710 nonsmokers died from a heart attack, while 206 of the 28612 smokers died from a heart attack. Estimate the difference in the proportion of nonsmokers who died vs. the proportion of smokers who died. Use 90% confidence.
3. 100 students were surveyed to find out the average amount of time they studied (outside of class) for MATH 1530 per week. The teacher had hypothesized that it was less than 1 hour (outside of class) per week. Test to see if the teacher is correct.
4. A teacher wanted to know if the average difference in the test scores for midterm and final in Math 1530 was statistically significant. The sample test scores are below.

Student	1	2	3	4	5
Midterm	75	67	87	92	48
Final	89	90	57	99	83

5. A table contains 40 randomly selected list prices for homes for sale in Smyrna, TN and 40 prices of homes in Murfreesboro, TN in April, 2013. Decide with a significance level of 0.05 whether homes in Murfreesboro are more expensive than homes in Smyrna.
6. A recent survey of 310 college students found that 243 had cell phones. Estimate with 90% confidence the proportion of all college students who have cell phones.
7. Test subjects were asked to place household objects (keys, hat, etc.) into the rooms of a computer-generated house. After performing an unrelated task, they were then asked to recall the locations of the items, and the number of correct responses was recorded. Estimate the difference in recall scores between men and women with 95% confidence.
8. The real estate search engine Zillow estimated in 2011 that 31.1 percent of all homes with a mortgage were underwater. (A home is underwater if the owners owe more than the home is worth.) Suppose we do a survey now of 200 mortgage holders and find that 58 of them are underwater. Can we conclude that the percentage of underwater mortgages has decreased since 2011?

- A. Large one-sample confidence interval for proportions
- B. Two-sample confidence interval for difference in means
- C. One-sample confidence interval for the mean
- D. Large one-sample hypothesis test for proportions
- E. Two-sample confidence interval for difference in proportions
- F. One-sample T-test
- G. Test for paired data
- H. Two-sample T-test

(Be sure to summarize the **MAIN IDEAS** from this lesson on the next page!)