

(1) Download the basketball data at  
<http://seeds.okstate.edu/SeedsPPP/TAN,3/basketball.xlsx>

Use the VLOOKUP function to pull data on the survey of 2013 students (in green) into the dataset containing all years (in orange).

(2) Create a new sheet and paste your basketball data (only the part in orange) to that sheet. Create a new variable that equals “1” if the last digit of the student’s phone number is 0, 1, 2, 3, or 4, and zero otherwise. Call this new variable *LastDigit*.

(3) Create a Pivot-Table from these data.

(4) Determine the average shooting performance for males, from the free-throw line, for those where *LastDigit* is one and then the average for those where *LastDigit* is zero.

(4.a) Which group shoots better?

(4.b) What does this say about the ability of one’s phone number to improve shooting performance?

(4.c) Are there enough data to say conclusively which group is superior?

(5) Leave the Pivot-Table and return to your data with the variable *LastDigit*. Sort the data according to gender, then type of shot, then *LastDigit*. Following the directions in chapter TAN.3, conduct a hypothesis test to determine if there really is a difference in shooting ability between the two groups. Do this by...

- Select all the values of shooting performance for males, free-throw, where *LastDigit* = 0. Name this array *lowdigit*.
- Select all the values of shooting performance for males, free-throw, where *LastDigit* = 1. Name this array *highdigit*.
- Use the T.TEST function to determine if the high-performing group in question 4 really is better at shooting basketball. Make it a one-tailed statistical test and assume the type of test is “two-sample unequal variance (heteroscedastic).” Can you say the differences in shooting performances are statistically different? This is the same as asking whether one’s telephone number really influences shooting performance.
- What do you conclude?