

1. MATH 36B: PROJECT 01

Your first project, a preliminary version of which is due wednesday Feb 28, is to analyze the data on Etruscan men (which I will email to you) to test the hypothesis that modern Italian men are descendants of the Etruscans. You should also make a *normal plot* to “show” that the data is approximately normal. The hypothesis testing should be done in two stages: First test the variance of the sample to see if the variance agrees with that of cranial size of Italian men. Second test the mean.

Afterwards, I also want you to determine the power of your test. All projects should have an introduction and conclusion and explanations of the computations. It should be a report which repeats the instructions above as if you thought of it yourself. (Don’t say “The problem is to do ...” or “You asked us to do ...” but rather say: “I (or we) will do [describe what you do in the report] in order to [describe the reason for each step]”

You can do it yourself, or you can form a group of 2 or three. (Choose one or two partners.) Each project receives one grade. All members of the team get that grade. If you like you can tell me which parts each member did. “I figured this part out.” or “I wrote the conclusion and Joe wrote the introduction.”

The project needs:

- (1) Title
- (2) Authors
- (3) Introduction
- (4) Computations with explanations
 - (a) χ^2 test on the sample variance.
 - (b) Test the sample mean.
 - (c) Calculate the power of your test.
 - (d) Make a normal plot (if the plot is a straight line the data is normal)
 - (e) Calculate the p -value
- (5) Conclusion

Reports may be handwritten or typed or typeset or a mixture of these. The preliminary version needs all of the calculations.