AP Statistics Final Paper 2015-16 (50 points)

Guidelines for writing paper:

* Your paper must be typed and no longer than five pages with a font size of 12. It should be well-organized and free of grammatical errors.
* You may work in a team of maximum two people.
* Your paper must be submitted on School Loop no later than **Friday, May 27th at 3:30 pm**

List of ideas:

1. Find an episode of Myth Busters and either verify they used statistics properly or show that it was used incorrectly to draw a conclusion (of course, do not re-use the yawning episode). Write a paper that summarizes the experiment, the results, and explains the statistical analysis.
2. Discover a new distribution that was not covered in our class, i.e. not a normal, t, chi-square, binomial or geometric distribution). Teach the class in less than 10 minutes about this new distribution and show working through each step in at least one specific example, like we did with our extra examples in the class. **If you choose this option, you will NOT need to write a paper.**
3. Make sense of the statistical analysis in a research article. Either use one of the 5 technical articles provided and answer all of the follow-up questions, or find an article that interests you, get pre-approval, and address all of the items below:
   1. **Summary:** In your own words, summarize the contents of the article in a paragraph.
   2. **Participants and Sampling:** Describe the type and number of subjects or experimental units and the sampling techniques used.
   3. **Experimental Design:** Explain the details of how the experiment was conducted in order to reduce bias in the results.
   4. **Type of Analysis:** Explain the type of statistical analysis that was performed (Ex: two sample t-test) in 1-2 sentences.
   5. **Results:** Explain the results of the study and what significance level was used. Some research may report results as confidence intervals and others may report P values, etc.:
4. Read one of the following 3 books and write a report: Freakanomics by Levitt & Dubner, How to lie with Statistics by Huff, Outliers by Gladwell. Be sure that each of these 3 items is addressed and I can clearly find them in your paper.
5. **Book Summary**: In your own words, what was this book about?
6. **5 Examples**: Find 5 of the most interesting examples or stories in the book that pertain to something you learned in class while preparing for the AP Statistics exam. Tell me what page they are on and write about them.
7. **Conclusion**: How has this book shaped some of the ways you think about politics, economics, public policy, psychology, etc.?

1. Learn to use a statistical software such as MiniTab, Fathom or JMP and do a demonstration for the class. **In this case, you do NOT need to write a paper, but you will need to do a demonstration for the class.** You might start at this link:

<http://statpages.info/javasta2.html>

\*\* Extra Credit can be earned for exceptional work on this project.