

# AP Statistics Summer Assignment

Welcome to AP Statistics. In this class you will learn to describe and analyze sets of data and use that analysis to draw conclusions about the situations that gave that data. The purpose of this assignment is to see how much you remember about basic statistics, if you know some algebra skills, and general knowledge. All answers must be on your own paper and legible. Be careful with spelling, sentence structure, and grammar. A large part of this class is clear communication of your answers.

If you are even confused about how to do something, you can:

1. Email me. I will be in and out all summer, but will be checking my email: [jharrison64@cox.net](mailto:jharrison64@cox.net) or [moharris@vbschools.com](mailto:moharris@vbschools.com)
2. Use [www.dictionary.com](http://www.dictionary.com) Not only does this site have quick definitions of words, but the encyclopedia tab provides more in-depth explanations.
3. Google any term or concept you want more information about.

Knowing how to use your graphing calculator is essential. If you do not currently own one, you need to buy one. A TI-83 is the minimum calculator needed for this course, but the 84 or higher is better as it has built-in functions that do not exist on the 83. The TI-89 or TI-nSPIRE (gray version only – NOT BLUE) are also good choices, but are overkill if you are not planning to major in math or science in college. The gray version of the Nspire is difficult to find in the stores. If you already own a calculator, you do not need to buy another one. If you already own or choose to buy a different brand (Casio, HP, etc), be certain you know how to use it as I will only be teaching how to use a TI calculator. If you don't want to buy new, you will find good prices at pawn shops, at Cash Converters, and on Amazon and eBay.

If you don't know how to do something using your calculator, refer to your manual. If you have lost or misplaced your manual, you can download a free copy from the TI website: [www.education.ti.com](http://www.education.ti.com)

**Part I. (50 pts)** The excel spreadsheet shows the salaries for the governor for each state.

Enter this data into your calculator and then find:

1. mean (average) salary for a state governor
2. median
3. range
4. standard deviation

Draw the following graphs of this data:

1. histogram using five, evenly spaced bars
2. boxplot
3. stem and leaf plot
4. dotplot

Write a paragraph summarizing what you found. Be certain that your paragraph includes a description of the center, shape and spread of the data.

## Part II. (35 pts)

Given the equation:  $y = a + bx$

1. What is the slope?
2. What is the intercept?
3. If  $y$  represents hours watching TV and  $x$  represents hours reading,  $a = 3.1$  and  $b = 2$ , how can you interpret the slope in the context of TV and reading?

Graph the following equations. Use graph paper. (You can download a piece of graph paper from: <http://incompetech.com/graphpaper/lite/> ) It is ok to use your calculator and the trace function to get precise graphs.

1.  $y = e^x$
2.  $y = 2 - 3x$
3.  $y = 1 + x^2$
4.  $y = \ln x$

## Part III. (15 pts)

Answer the following questions.

1. Why would someone use a circle graph rather than a bar graph to display information?
2. What is the difference between a census and a survey?
3. What does it mean if you take the SAT and the results show that you are in the 85<sup>th</sup> percentile?
4. In football, the referee tosses a coin to determine if a team will receive or kick off. What is the probability that a team will win the toss?
5. How many hearts are in a deck of cards? How many kings?

## Part IV.

1. What is the last book you read for pleasure – not as part of an English assignment?
2. What is your first choice for college and your proposed major?
3. Is this your first AP class? If not, what others have you taken and how did you do on the AP exam?
4. Why did you elect this class?
5. What do you do to study for a math test? Please be as specific as possible in your answer.
6. Do you have an email account that you check regularly? What is the address?
7. Do you have access to Sharepoint at home?
8. There are two main expectations for this course: that you will attend class and that you will take the AP exam in May. I will expect you to make attendance a priority. I will begin collecting money for the exam the first week of school. A minimum of \$20 will be due by the end of September.