

Welcome to the 5th class of AP Statistics at Lincoln High School. I'm delighted to have you as a part of my class. We have a lot of material to cover before the AP exam in May (the 5th to be exact!) and in order to get a jump start on the new school year, I'd like you to do some pre-work over the summer on some of the basic tools that you will need in this course (don't worry, it's all from Chapter 1! It'll just give a head start so that we can get to the good stuff faster.) Please have all of your answers typed and ready to turn on the first day of school.

You will also need a graphing calculator for this course; a TI 83, 83+, 84+, or 89 is recommended. Sorry, but the 86 doesn't have the statistical software needed for this course. If this is a hardship, please talk to me as soon as possible. If you have any questions over the summer, please don't hesitate to e-mail me at: c.johanson.paul@gmail.com. Or, feel free to give me a call at (408) 834-9010. See you on August 26th!

Directions: Use the Internet or other research source to answer the following questions. Make sure to cite the sources you use for each question and always try to put your responses in your own words, unless directly quoting; no plagiarism please. Use correct grammar and complete sentences.

Before beginning any tasks on the calculator, be sure to turn the "Diagnostic On." (Check your user handbook or go to <http://education.ti.com/us/global/guides.html>)

1. What are statistics? What does a student in a course of Statistics study?
2. What is data? How is it gathered?
3. What is the difference between a categorical variable and a quantitative one? List at least 5 examples of each.
4. What is a "distribution of data?"
5. What is an outlier with respect to statistics?
6. What are the mean, median, mode, range, first quartile, third quartile, and interquartile range of a set of data?

7. What numbers make up the "5 number summary?" What symbols or notation, if any, are used to represent each of the 5 numbers?
8. What is a modified box plot? What are parallel box plots?
9. What does it mean if a distribution is symmetric? Skewed left? Skewed right?
10. Enter the following data into a list on your calculator:

57, 61, 57, 57, 58, 57, 61, 54, 68, 51, 49, 64, 50, 48, 65, 52, 56, 46, 54, 49, 51, 47,
55, 55, 54, 42, 51, 56, 55, 51, 54, 51, 60, 61, 43, 55, 56, 61, 52, 69, 64, 46, 54

Name this list PREZ. Use your calculator to sort the data in ascending order. Use your calculator to find "1-var stats" for this data. What do the following symbols mean under 1-var stats: \bar{x} , S_x , n . Use the down arrow key to scroll down. What other information does "1-var stats" give you

11. Find an example of each type of graph below. Cut and paste the graph into your document (be sure to cite it), and answer the following questions about each graph in paragraph form: Which type of data (categorical or quantitative) is used with each type of graph? Are there any specific times when each type graph should be used?

-stem and leaf plot -scatterplot -box and whisker plot -histogram
-pie chart* -time plot* -ogive graph* -bar graph* -dotplot*

For the 4 graphs above without stars, answer the following questions as well:

- What is the spread (range) of the graph?
- What is the shape of the graph? (symmetric, fairly symmetric, skewed?)
- Are there any outliers and if so, what are they?

12. Which of the above data displays are you NOT able to graph on your calculator?

Here are some cites that might help get you started:

<http://mathforum.org/library/>
<http://www.herkimershideaway.org/apstatistics/yymmsum99/ymm.htm>
<http://exploringdata.cqu.edu.au/>
<http://www.anu.edu.au/nceph/surfstat/surfstat-home/surfstat.html>
http://www.cas.lancs.ac.uk/glossary_v1.1/main.html

