

2022 - 2023 AP STATISTICS SUMMER ASSIGNMENT

Ms. Salvatore

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Introduction:

Welcome to AP Statistics!

Below you will find important information about resources/supplies, what you can expect from the course, grading policies, how you can succeed in this course and the summer assignment.

The purpose of the summer assignment is to get us off to a strong start in the fall and to also ensure that we have sufficient time to cover all of the required course material AND have time to review prior to the AP Statistics Exam in May 2023. The summer assignment covers the first THREE chapters of the AP Statistics Textbook, a review of essential Algebra I and Algebra II concepts necessary for the course and vocabulary you will need to know prior to the course.

Please read the directions carefully. Please feel free to email me (salvatorem@gilbertschool.org) if you have any questions or need clarification on any expectations; I will be checking it periodically over the summer.

In this class, you will learn to describe and analyze data. This course is not like any other math course that you have taken in that it is a combination of Math and English; reading and writing skills are just as important in this class as math skills. Statistics is also very important to many different career fields beyond those typically related to math. It can be a very challenging class at times and communication and self-advocacy skills are very important. Since it is an AP course, it is considered to be college-level and will move at a college-level pace; there is a great deal of material that is required to be covered by approximately April vacation.

Resources/Supplies:

- ☐ **Textbook:** Bock, Velleman, De Veaux. *Stats: Modeling the World, AP Edition, 3rd edition*, 2010. (A pdf version of this text is posted in our Google Classroom.)
- ☐ **Google Classroom:** class code: **kxrzmcb**
- ☐ **Khan Academy Classroom:** class code: **TQCE854**
- ☐ **Graphing Calculator (REQUIRED):** minimum of a TI-84. You will need this for homework assignments and the AP Statistics exam. I do have a class set of TI-84 Plus CE but you will not be able to take these home.
- ☐ **Binder** with loose leaf paper (this usually works best for notes, homework, handouts)
- ☐ **Pencils and erasers**

What You Can Expect:

- ☐ **Summer Assignment AND Vocabulary QUIZ during first week of school**
- ☐ Direct instruction
- ☐ Student learning (group and individual tasks)
- ☐ HOMEWORK IS ASSIGNED EACH CLASS PERIOD DUE NEXT CLASS
- ☐ Quizzes which will include approximately two chapters of the current unit
- ☐ Tests which will include all of the material on the current and prior units
- ☐ You will not receive a review sheet for assessments; it will be your responsibility to review the material.
- ☐ READ the text prior to instruction
- ☐ Show all necessary work for full credit on homework, unless I state otherwise.
- ☐ Explaining in words how your results relate to the given problem.

Grading Policy:

- ☐ Will be discussed at first class

How to Succeed in AP Statistics:

- ☐ Take notes in class and keep an organized binder (write the date, chapter, and topic on you notes, for example; divide your binder by unit)
- ☐ Complete each homework assignment and check your solution
- ☐ Do not wait to ask for help; send an email and/or make an appointment with me early if you need help.
- ☐ Read your textbook

- ☐ Use online resources like Khan Academy, etc. for more information and practice problems

Academic Integrity:

It is expected that you do your own work on all assignments given and **NOT** copy the answers from another person or another source (internet, textbook, etc.). Zeros will be given for any instance of plagiarism, parents will be contacted and other appropriate consequences will be given (per TGS student handbook)

Group projects/activities will require equitable distribution of work.

Summer Assignment:**Part 1 (DUE BEFORE YOU LEAVE FOR SUMMER VACATION!):**

This is the easiest part of your summer assignment!!

- ☐ Join the AP Statistics Google Classroom: Class Code **kxrzmcb**
- ☐ Complete the AP Statistics Survey in Google Classroom (It is a Google Form under the "Classwork Tab" under the "Summer Work" Topic) to help me to know you more as a student (Some of the questions are mandatory, some are optional - you **MUST** answer the mandatory ones to be able to submit the form).
- ☐ Remember to turn in AP Agreement by the end of final exams (will be sent home soon)
- ☐ Join Khan Academy Class: Class Code (in Google Classroom):
TQCE854

Part 2: Reading and Vocabulary (Due by first class):☐ **Reading Assignment (pdf of text is posted in Google Classroom):**

- ☐ Read Chapter 1: Stats Start Here (pages 2 - 6)
- ☐ Read Chapter 2: Data (pages 7 - 16)
- ☐ Read Chapter 3: Displaying and Describing Categorical Data (pages 20 - 37)

☐ **Vocabulary (Quiz to be given during FIRST WEEK OF SCHOOL!):**

Please define each of the following terms from the information in your **textbook** (chapters 1 - 3 and beyond) and/or from the information on the **Stat Trek website** (link and directions posted in Google Classroom). When asked to provide an example of the word, provide a unique example of the word **NOT** given on the website. You may either write your definitions on this packet or type into a Google doc. to share with me.

There will be a vocabulary quiz the first week of classes

1. Categorical Variables:

Example:

2. Quantitative Variables:

Example:

3. Univariate Data:

4. Bivariate Data:

5. Median:

6. Mean:

7. Population:

Example:

8. Sample:

Example:

9. Center:

10. Spread:

11. Symmetry:

12. Unimodal and Bimodal:

13. Skewness:

Sketch Skew Left:

Sketch Skew Right:

14. Uniform:

15. Gaps:

16. Outliers:

17. Dot plots:

18. Difference between a bar chart and histogram:

19. Stem plots:

20. Boxplots:

21. Quartiles:

22. Range:

23. Interquartile Range:

24. Parallel boxplots:

25. Difference between a frequency table and relative frequency table:

26. Parameter:

27. Statistic:

28. Marginal Distribution:

29. Conditional Distribution:

30. Segmented Bar Chart:

31. What are the “W’s” of data:

Part 3: Practice Problems (Due by first class)

General Directions: Please either use a separate sheet of paper (attached to this packet when turned in) or a Google Doc, shared with me, to complete the following work.

- ☐ **Page 17** (13 - 19, 22 ALL)
- ☐ **Page 38** (5, 7, 11, 14, 19, 20, 21, 22, 28, 31, 32)
- ☐ **Categorical or Quantitative.** Determine if the variables listed below are quantitative or categorical.

1. Time it takes to get to school _____
2. Number of people under 18 living in a household _____
3. Hair color _____
4. Temperature of a cup of coffee _____
5. Teacher salaries _____
6. Gender _____

7. Smoking _____
8. Height _____
9. Amount of oil spilled _____
10. Age of Oscar winner _____
11. Make and model of car _____
12. Jelly Bean flavors _____
13. Country of origin _____
14. Type of meat sold at a supermarket _____
15. Number of shoes owned _____

☐ **Algebra Problems:**

The prerequisite for AP Statistics is Algebra II. Although there will not be much equation solving in this course, there will be some; a quick review of Algebra I and Algebra II content will be helpful.

A formula that is used often in AP Statistics is one used for a z-score:

$$Z = \frac{x - \bar{x}}{s}$$

1. If $z = 2.5$, $x = 102$, and $\bar{x} = 100$. What is the value of s ? Show your work.

2. If $z = -3.35$, $x = 60$, and $s = 4$, what is the value of \bar{x} ? Show your work.

3. Solve $0.05 = 1.96\sqrt{\frac{0.5^2}{n}}$ for n.

4. If $-1.64 = \frac{60 - \mu}{\sigma}$ and $1.96 = \frac{95 - \mu}{\sigma}$

5. Basic math concepts such as dividing fractions become necessary when calculating probabilities. Divide the two fractions below. Show all steps. Do **NOT** change the fractions to decimals.

$$\frac{\frac{2}{3}}{\frac{6}{14}}$$

6. Basic math concepts such as multiplication of fractions become necessary when calculating probabilities. Multiply the two fractions below. Show all steps. Do **NOT** change the fractions to decimals.

$$\frac{2}{5} \cdot \frac{5}{6}$$

7. Basic math concepts such as addition of fractions become necessary when calculating probabilities. Add the two fractions below. Show all steps. Do **NOT** change the fractions to decimals.

$$\frac{2}{5} + \frac{5}{6}$$