

**Academic Magnet High School  
2020 AP Statistics Summer Assignment**

**If you have questions or concerns while doing this assignment, email or text Gwen Hooffstetter.**

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**Join the AP Statistics Google Classroom page.**

**The code is q3unbza.**

**Preliminaries:** This is not like any other math class you have ever taken.

- 1) You must be competent in basic algebra. More complicated topics will be (re)taught.
- 2) You should be familiar with basic statistical plots such as box-and-whiskers plots, scatter plots, bar graphs, histograms, circle (pie) graphs, and stem-and-leaf plots. These topics should have been covered in Algebra I and Algebra II.
- 3) You must be willing to explain your answers. Just getting the correct number will not be sufficient for this course.
- 4) **You must own your own calculator and bring it to class everyday.** You need a TI-84, 84 Plus or TIInspire.

One of the goals of the study of statistics is to prepare students to be knowledgeable consumers of information. The use of numbers as support for opinions and decisions impacts all aspects of our lives. Doing statistics is not just collecting data. More importantly it is using data to draw conclusions. The most important aspect of our study will be to communicate to others what the data is telling us both orally and in written form.

### **SUMMER ASSIGNMENTS**

Submit assignments at [turnitin.com](https://www.turnitin.com).

Assignment ID: **25138345**

Password: **APStat2020**

Part One of this assignment is due **Sunday, July 12, 2020.**

Parts Two of this assignment is due **Sunday, August 2, 2020.**

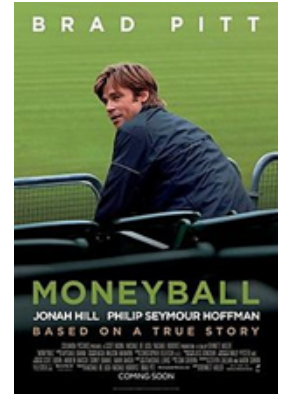
Part Three of this assignment is a MC Quiz on the Greek Alphabet. This quiz will be given on the **first day of class.**

Late work will be penalized, so get in touch if you have any issues. The points attached to this assignment are equal to a test grade in this course which counts 60% of your quarter grade. Each part combines to count for 33 1/3 points out of 100. Doing a good job here will lay a strong foundation for the rest of the semester.

## PART ONE

### Moneyball

Watch the film "Moneyball" released in 2011. If you are industrious, you could also read the book on which the film is based. The book was written by Michael Lewis and published in 2003. Once you watch the film, answer the following questions below. Type and submit this assignment to turnitin.com.



- 1) In 1991, what was the total payroll for: New York Yankees? Oakland Athletics?
- 2) Name the three players that the Oakland Athletics lost to free agency.
- 3) What was Billy Beane (General Manager) told to do by the team owner of the Athletics?
- 4) What is the real problem that Billy and his team of scouts have to solve?
- 5) As a High School baseball star, why was Billy projected to be picked in the first round of the player draft?
- 6) According to Pete Brandt, "... the goal of people who run ball clubs is not to buy players, it is to \_\_\_\_\_ . In order to \_\_\_\_\_ , they need to \_\_\_\_\_ ."
- 7) The equation on the whiteboard  $\frac{(\text{runs scored})^2}{(\text{runs scored})^2 + (\text{runs allowed})^2}$  is called the 'Pythagorean Expectation Formula.'

What does it allow Pete to project?

- 8) How many runs are needed, and how many runs can be allowed, in order for the team to reach this goal?
- 9) Pete explains to Billy that the code that is shown on his computer is an algorithm that analyzes players based on a number of statistics. It is all about getting everything down to . . .  
What is it used for?
- 10) How does Pete know that there are 25 potential players that must be out there and available for Oakland?
- 11) Why is Chad Bradford (a pitcher), undervalued by other teams?
- 12) How is Billy going to replace players like Jason Giambi, Johnny Damon and Olmedo Saenz?
- 13) The three replacement players that Billy is interested in all have 'problems' but are cheap. Name the players. What do they all have in common?
- 14) Why did Billy not succeed at the major - league level as a player, despite having 'all the tools'?
- 15) The team that Billy has assembled is based on a statistical theory known colloquially as 'Moneyball'. Who invented this idea, and what was his real job at the time?
- 16) Why does Billy prefer Scott Hatteburg at 1st base instead of Carlos Pena (despite Hatteburg's lack of experience and fielding skills in the position)?
- 17) Even though Jeremy Giambi was a player acquired using the 'Moneyball' formula, why do you think Billy felt the need to trade him?
- 18) What is "The Streak"?
- 19) Billy states that if the A's win the last (championship) game of the season, they would have reinvented the game. What does he mean by this?
- 20) At the end of the 2002 season, the Athletics had exactly the same number of wins as the Yankees. How much did the Yankees pay on average for each win? How much did the A's pay on average for each win?

## PART TWO

Read **Freakonomics** by Steven D. Levitt and Stephen J. Dubner. Answer the following questions fully and in complete sentences. Type your answers and submit them online using turnitin.com from the first page of this document.

The book has six chapters. After every two chapters, write a reading response.

For your reading response, type a response to what you read in those two chapters. Do not summarize.

- Instead:
- Describe which parts you found interesting
  - Describe parts you didn't understand and why
  - Ask questions about what you read

## PART THREE

You will have a multiple choice quiz on the Greek Alphabet on the 1<sup>st</sup> day that your class meets in August. Please be prepared. This quiz will count 1/3 of your test grade for summer work. Please use these Greek letters, as some of the letters can vary depending on their usage.

# The Greek Alphabet

Alpha	Α α	Iota	Ι ι	Rho	Ρ ρ
Beta	Β β	Kappa	Κ κ	Sigma	Σ σ
Gamma	Γ γ	Lambda	Λ λ	Tau	Τ τ
Delta	Δ δ	Mu	Μ μ	Upsilon	Υ υ
Epsilon	Ε ε	Nu	Ν ν	Phi	Φ φ
Zeta	Ζ ζ	Xi	Ξ ξ	Chi	Χ χ
Eta	Η η	Omicron	Ο ο	Psi	Ψ ψ
Theta	Θ θ	Pi	Π π	Omega	Ω ω