

Dear AP Statistics Student:

You have made a wise choice to enroll in Advanced Placement Statistics. Let me stress that again... YOU have made a wise choice. Although others may have influenced your decision, YOU are the student and this is YOUR education: own it! The time you invest in this class will be rewarding, but YOU must make that investment.

This is an Advanced Placement course. The work load will be heavy at times. You must expect this, and manage your time appropriately. This is not just another honors course. This is a COLLEGE LEVEL course. I will provide all the tools and resources that you need for your success, and your job is to organize and utilize them. The **effort** you put into this class WILL be **rewarded!**

The point of this summer assignment is to review the key prerequisite knowledge used in chapters P, 1, and 3. We do not have a lot of time for such review during the school year as we must get through the entire curriculum before the AP exam in the first week of May. Therefore, the effort you put into understanding/reviewing these concepts is important. *Get prepared!*

Look through all of the information in this packet. Do NOT skip anything. Start getting yourself organized for the school year by getting yourself a **large binder** (or several small ones), a spiral notebook, a Ti-84 calculator, and a BUNCH of paper. Throughout the year I will be giving you many resources, and you will need to organize them. This packet is your FIRST resource. **Do not lose this packet... ever.** We do not throw anything away in this class. Nothing is just "busy work". We don't have time for that sort of thing. **Everything I give you and everything that we do is important.**

What is contained in this packet:

Page 2: The directions for the summer assignment - tells you the complete assignment.

Page 3: Data collection topics to choose from (or come up with your own and submit for approval.)

Page 4: An AP Stats exam free response Question #1 - to be completed

Page 5-6: Academic Honesty agreement. This is serious.

Page 7: Summer assignment assessment sheet - CONSULT THIS BEFORE TURNING IN!!!

Good luck on this assignment. I look forward to a fantastic upcoming year!

With high hopes and expectations,



Mrs. Theresa Smith

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Room334

AP Statistics Summer Assignment (150 points)

This assignment will be collected on the first day of school. Graded for **CORRECTNESS**.
Be sure to read over the assessment sheet (found at the end) as you complete the assignment.

What you will need for this assignment and for the entire school year:

- ❖ Ti-84 Silver (this is the most preferred) (T-83+, Ti-83+ silver, Ti-84, are acceptable)
- ❖ The Textbook - **COVER IT**
- ❖ Recommended: Microsoft Word and Microsoft Excel (or equivalent)

Section 1: Edmodo

- ❖ Register at Edmodo before June 6. Use Code _____: expires on June 6!
- ❖ If you need to register after June 6 for any reason, email me for a new code.
- ❖ If you have questions regarding this assignment or the class, please post a comment on Edmodo AND email me a note saying you posted a question. (Check through Edmodo. to see if the answer to your question already exists there!)
 - This is better than only emailing since all registered students can see my answer and I don't have to answer multiple emails with the same question.

Section 2: Data Collection and Analysis.

Choose a topic from the next page *OR* submit an alternate topic via email for approval (preferred).

- ✓ Cover Sheet to include your Name and the title of your data collection.
- 1. Give an introduction
- 2. **Type** your analysis report (answers to the questions in the data collection topic that you picked)
 - Present **your data in a table**. (You can make a table in excel and copy it into word—use borders.)
 - **Graphs** are to be done in excel (or comparable program) or VERY neat. Use labels! Copy/Paste from excel into the word document. (Hint: you can size your graph to fit into the document nicely. You can also use different types of "text wrapping" for the graph to make it look nice.)
- 3. **Answer the questions given for that topic and give a summary/conclusion** - what did you find out? What problems (if any) did you encounter while recording your data? What lurking variables may have influenced your data in any way that you did not measure or control?
 - ❖ You are graded on content, completion, and professionalism (organization and written presentation).
 - ❖ If you do NOT have access to a computer over the summer, please contact me for advice.
 - Great site for understanding standard deviation: <http://www.mathsisfun.com/data/standard-deviation.html>
 - Great site for understanding correlation: <http://www.mathsisfun.com/data/correlation.html>

Section 3: A Taste of AP

- ❖ AP Exam Question 1. This question deals with the information in Chapter 1. You may opt to handwrite the answer on the question sheet in the space provided, but a typed solution is preferred. Make sure your method is clear and your work/explanation is organized.
NOTE: this part is graded on correctness.

Academic Honesty Agreement: Read, understand, and sign. I do NOT tolerate academic dishonesty.

Assessment Sheet: Be sure to include the assessment sheet when you turn in your assignment.

DATA COLLECTION TOPICS or make one up one your own and get approved!

• **Every time you refuel your car (all the way to FULL)...**

- Record Miles since last fill up and Gallons put into the tank (to fill up the tank)
- Calculate the gas mileage each time.
- What are the mean and standard deviation for gas mileage?
 - A) Show by hand using the formulas for each.
 - B) Check your answer using excel or your calculator.
- Does Miles vs. Gallons have a linear or nonlinear (curved) relationship?
 1. Make a Scatterplot (x = miles, y = gallons) - preferred in excel
 2. Describe what you see. Do the data points appear to have a linear relationship?
 3. Calculate the correlation (which can also be done in excel).
 4. Does your correlation value support your answer from part 2?

At least **10 fill-ups!**
Does not need to be from empty to full, but you do need to fill up to full.

• **Record gas prices daily from the same gas station.** (Could be easily modified for following the price of milk, crabs, etc.)

Give the dates a "Day" number. For example: if you start collecting data on June 18th, June 18 = day 1, June 19 = day 2, June 20 = day 3, July 1 = day 14. Etc. If you miss June 19th, June 20th is STILL day 3.

- What relationship appears between price and date (if any)? Collect data over 5-8 weeks.
 1. Make a Scatterplot (x = day number, y = price) - preferred in excel
 2. Describe what you see. Do the data points appear to have a linear relationship? Are there any "interesting points" where the relationship changes? Thoughts?
 3. Calculate the correlation (which can also be done in excel).
 4. Does your correlation value support your answer from part 2?
- What are the mean and standard deviation of price?
 - A) Show by hand using the formulas for each.
 - B) Check your answer using excel or your calculator.

Collect at least **10** Data Points.

• **Plant seeds and watch them grow! (Sunflowers, basil, ...anything that grows fast.)**

Give the dates a "Day" number. For example: if you start collecting data on June 18th, June 18 = day 1, June 19 = day 2, June 20 = day 3, July 1 = day 14. Etc. If you miss June 19th, June 20th is STILL day 3. Make Day 1 the first day of measurement. Day 1 is NOT the day you planted the seeds. It can be when the plants are a few inches tall if you want. Plant multiple seeds. (You will have multiple heights for each Day.)

- What relationship appears between plant height and date (if any)?
 1. Make a Scatterplot (x = day number, y = height) - preferred in excel
 2. Describe what you see. Do the data points appear to have a linear relationship as day number increases? Are there any "interesting points" where the relationship changes? Thoughts?
 3. Calculate the correlation (which can also be done in excel).
 4. Does your correlation value support your answer from part 2?
- What are the mean and standard deviation of plant height?
 - A) Show by hand using the formulas for each.
 - B) Check your answer using excel or your calculator.

Collect data over at least 5 weeks. You will need at least 10 data points.

• **Record your weight and body fat percent daily.** Use a scale that can also calculate body fat percentage.

- Be sure to use the EXACT same scale each time. Measure at the same time of day each day.
- What relationship appears between weight and body fat % (if any)?
 1. Make a Scatterplot (x = weight, y = body fat %) - preferred in excel
 2. Describe what you see. Do the data points appear to have a linear relationship?
 3. Calculate the correlation (which can also be done in excel).
 4. Does your correlation value support your answer from part 2?
- What are the mean and standard deviation of your weight?
 - A) Show by hand using the formulas for each.
 - B) Check your answer using excel or your calculator.

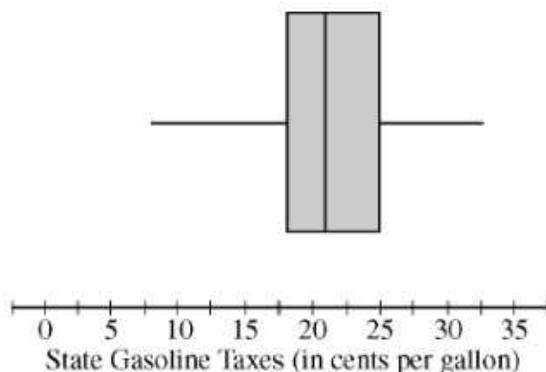
Collect at least **10 observations** over **30-60 days**

This is a great option for those whose weight seems to change frequently, or for those who are weight training.

A Taste of AP: AP Exam Question 1

Directions: Show all your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

1. As gasoline prices have increased in recent years, many drivers have expressed concern about the taxes they pay on gasoline for their cars. In the United States, gasoline taxes are imposed by both the federal government and by individual states. The boxplot below shows the distribution of the state gasoline taxes, in cents per gallon, for all 50 states on January 1, 2006.



- (a) Based on the boxplot, what are the approximate values of the median and the interquartile range of the distribution of state gasoline taxes, in cents per gallon? Mark and label the boxplot to indicate how you found the approximated values.
- (b) The federal tax imposed on gasoline was 18.4 cents per gallon at the time the state taxes were in effect. The federal gasoline tax was added to the state gasoline tax for each state to create a new distribution of combined gasoline taxes. What are approximate values, in cents per gallon, of the median and interquartile range of the new distribution of combined gasoline taxes? Justify your answer.

Academic Honesty Agreement

Academic Dishonesty (Cheating): Any action intended to obtain or assist in obtaining credit for work that is not one's own. Examples include submitting another's work as one's own, obtaining/accepting a copy of tests or answer keys, giving/receiving test questions or answers, copying from another student's test/ homework or allowing another student to copy, using materials that are not permitted during a test, plagiarizing (presenting published materials as one's own), having someone else prepare the assignment, or collaborating on assignments and exams meant to be done individually.

*In this class **all assignments are to be done individually** unless specifically told otherwise.*

Determination: Determination of Academic Dishonesty will be made by the instructor, with input from other instructors and/or administrators if required.

Examples: The following are examples, not exhaustive, of Academic Dishonesty:

1. Copying from the assignment or exam of another person in class OR allowing another student to copy from your work. (This includes students of previous years!)
2. The use of notes for closed notes assessments. Notes include papers, books, formulae on calculators or electronic devices, information written on any media, etc.
3. Plagiarism, intentional or unintentional, of papers, prose, internet sites, etc.
4. Copying of graphs, charts, formulas, etc. from another person's work
5. Having another person do an assignment or parts of an assignment and representing it as one's own work.
6. Telling someone or (being told by someone) how to do a problem on a take-home assignment made for individuals to complete on their own.

Consequences: Violation of the Academic Honesty Policy has two major parts: Class and Administration. In this class, any academic dishonesty will result in consequences that may range from a discussion about the incident to a failing grade for the assignment. Severity of the punishment is at the sole discretion of the instructor and will depend on the severity of the violation and perceived level of intent. Those acts seen as intentional will be referred to the appropriate administrator and the administration may suggest an appropriate course of action. The National Honors Society sponsors will also be notified of the incident, potentially resulting in the loss of membership. A copy of materials related to the incident will be posted to the student's permanent records.

I have read and understand the definition of Academic Dishonesty, know the consequences of any such action, agree to only submit my own work for this class, and will not allow others to submit my work as their own.

Name: _____

Class: AP Statistics

Signed: _____

Date: _____

So, how can you "work together" without being academically dishonest? See back of this page.

How you can “work together” without being academically dishonest:

- Use **edmodo** to publically ask questions.
- Get tutoring on a particular topic that is covered on the assignment, but not the actual assignment itself: “Yes, you have to do a matched pairs test. Do you need help in doing a matched pairs test? We can work on one from the book if you want...”

Note:

Saying that you worked with someone because you didn't understand some of the problem IS

CHEATING! Saying you didn't know you weren't allowed to do that (even if that is genuine) does not mean you did not cheat. It is very important that you understand what it means to be academically dishonest. The consequences are severe in college and military situations, and they will already assume you understand the definition. In a college setting, any form of academic dishonesty can lead to failing the course and/or expulsion. In the military, you will lose rank (enlisted) or be dismissed from service (officer).

If you don't have your **INTEGRITY**, you have **NOTHING**.

Students have **FAILED** this course due to lack of academic integrity.

Cheating gets you nowhere pleasant....

Summer Assignment Assessment Sheet

Attach with your assignment

Data Collection and Analysis.	0 missing	45 Incomplete or sloppy. Minimal Effort. Minimal Correctness	60 Lacking organization. Minimal Correctness	75 Could use better organization, or could look more professional. Mostly correct	90 Creative approach, Typed, well organized, professional looking (including equations/formulas) Mostly (or 100%) correct.
AP Exam Question 1	0 missing	10 Incomplete, and/or Incorrect, sloppy	30 Partially Correct, and/or Partially Incomplete, work is missing or sloppy	40 Essentially to Partially Correct, Complete, all work is shown	50 Essentially Correct, labels are used, scale is shown, complete sentences used, neat and easy to read, all work is shown and organized
Academic Honesty Agreement	0 Not Signed				5 Signed
Registered at Edmodo by 6/15.	0 NO			5 Late registrant	5 YES

Score: _____ Process: _____ Product: _____

Note: Your score will be split up: 75% process, 25% product.

How to turn in: Staple these 4 things together, with your NAME on it, IN THIS ORDER:
 (Put remaining pages from this packet into your class binder.)

1. Summer Assignment Assessment Sheet
2. A taste of AP: AP Exam Question 1
3. Data Collection report
4. Signed Honesty Agreement

When typing your report, please make use an equation writer in Word or something equivalent for typing any equations or formulas.