

AP Statistics Summer Work Packet  
DUE THE FIRST DAY OF SCHOOL

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**Welcome to AP Statistics!**

This course is a college-level introductory statistics course. I expect that you will treat this course with the same seriousness and dedication that you would treat a college course.

Your **required** summer work includes the following:

- 1) **Complete the “Get Ready for AP Statistics, Summer, 2023” course on Khan Academy.** Log into Khan Academy using your Latin email address, and join the class using class code 5MTEX22P or join using [this](#) link.
- 2) Complete the **Calculator Skills** section of the packet.
- 3) Purchase a **new or used graphing calculator** of one of the following models: TI-84 Plus, or TI 84 Plus CE. You **must** have a graphing calculator by the first day of class. Non-TI calculators (Casio, HP Prime, etc.) or graphing calculator apps are not acceptable. If purchasing a calculator is a hardship for your family, please let me know as soon as possible so that we can determine a workable solution. *You will need this calculator in class and at home daily. Waiting until midway through the year to purchase or talk with me about this need is not acceptable.*



- 4) Purchase an **AP Statistics test prep book**. Kaplan, Princeton Review, 5 Steps to a 5, or Barron's are all good books and are easily available. If purchasing a prep book is a hardship for your family, please let me know as soon as possible so that we can determine a workable solution.
- 5) Purchase a **set of 100 index cards** (line or unlined), a **metal ring** to connect them, and a **container** to hold them.

AP Statistics Summer Work Packet  
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**AP Statistics Calculator Skills:**

Watch [this video](#) on calculator functions for the AP Statistics exam (Google “AP Statistics Calculator Review Ti84 AP STATS” by the Algebras). Bookmark this video so that you can refer to it throughout the year. There will likely be some measurements that you have never heard. That is fine. Right now, we are working on becoming comfortable with your calculator.

Complete the following problems:

- 1) Students measured their heart rates before and after drinking a sugary soda. The data are below. Use your calculator to find the mean, standard deviation, median, and IQR of the data.

Student	Heart Rate Before Soda
1	72
2	67
3	68
4	75
5	62
6	59
7	86
8	86
9	79
10	70

mean  $\bar{x}$ : \_\_\_\_\_

standard deviation  $S_x$ : \_\_\_\_\_

median: \_\_\_\_\_

IQR: \_\_\_\_\_

- 2) Sketch a boxplot of the data below. Make sure to include a scale.

AP Statistics Summer Work Packet  
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3)

Student	Heart Rate Before Soda	Heart Rate After Soda
1	72	78
2	67	71
3	68	80
4	75	78
5	62	68
6	59	66
7	86	92
8	86	89
9	79	85
10	70	77

a. Find the correlation  $r$  between these two variables. \_\_\_\_\_

b. Find the equation of the regression line ("linreg") \_\_\_\_\_

4) Sketch a scatterplot of the data above. Make sure to include a scale.

5) Sketch a residual plot for the data above. Make sure to include a scale.

6) Find the residual ( $y$ -value) for the data point that has an  $x$  value of 67.

AP Statistics Summer Work Packet  
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- 7) Calculate a  $\chi^2$  (chi-squared) test for the data in this table using a matrix that is a  $10 \times 2$ . Write your values below:

Heart Rate Before Soda	Heart Rate After Soda
72	78
67	71
68	80
75	78
62	68
59	66
86	92
86	89
79	85
70	77

$\chi^2$  \_\_\_\_\_

df: \_\_\_\_\_

p: \_\_\_\_\_

- 8) Now calculate a  $\chi^2$  GOF (chi-squared goodness-of-fit) test for the data in this table using the data below for  $L_1$  and  $L_2$  and 9 degrees of freedom ( $df = 9$ ). Write your values below:

Heart Rate Before Soda	Heart Rate After Soda
72	78
67	71
68	80
75	78
62	68
59	66
86	92
86	89
79	85
70	77

$\chi^2$  \_\_\_\_\_

df: \_\_\_\_\_

p: \_\_\_\_\_