

Pre-Work for AP Statistics

Due: the first day of class

Name: _____

This will count as the first test grade of the year!

Required for class and homework, every day:

- Calculator: any from the TI-83 or TI-84 family (Don't lose the manual!)
- Binder with loose-leaf paper
- Graph paper
- Pen, pencil, and highlighter
- Black and White Notebook

Recommended:

- A review book for the AP Statistics Exam
 - Some possibilities: Barron's, McGraw-Hill, Amsco, etc.
 - Search online, or visit a book store

Summer Activities

- *Please note that the calculator directions given are for a TI-83 Plus.*
- *You are required to show work for all questions, unless you are specifically instructed to use the calculator.*

Before beginning the tasks assigned below, perform the following operations in your calculator.

1. Select CATALOG (2nd, 0).
 2. Press the letter D. (Use the x^{-1} key. Since there is an "A" in the upper right corner of your screen, that means that you will be selecting the green "ALPHA" function of the key. That selection will allow you to jump to the D's in the catalog, rather than having to scroll through A, B, and C to get there.)
 3. Scroll down (use the down arrow key) to find "DiagnosticOn."
 4. Hit enter to select it, then enter again to actually perform the function.
- Your calculator will now display information that you will need to access. If you clear the memory on your calculator at any point, you'll need to repeat this process.
 - Always begin a procedure in the calculator from a blank "home screen." (The "regular" screen, where you can perform arithmetic operations.)

I. Stat Button use:

Enter the following data into List 1.

1. Select the STAT menu.
2. Choose "Edit."

510 510 510 543 454 438 459 459 498 466 448 403 498 466 498 433 454 454 498 419
415 454 407 498 443 448 498 433 459 459 419

Double-check the number of values you entered as well as the values themselves!

Sequence of commands: Stat, Calc, 1-Var-Stats, L1

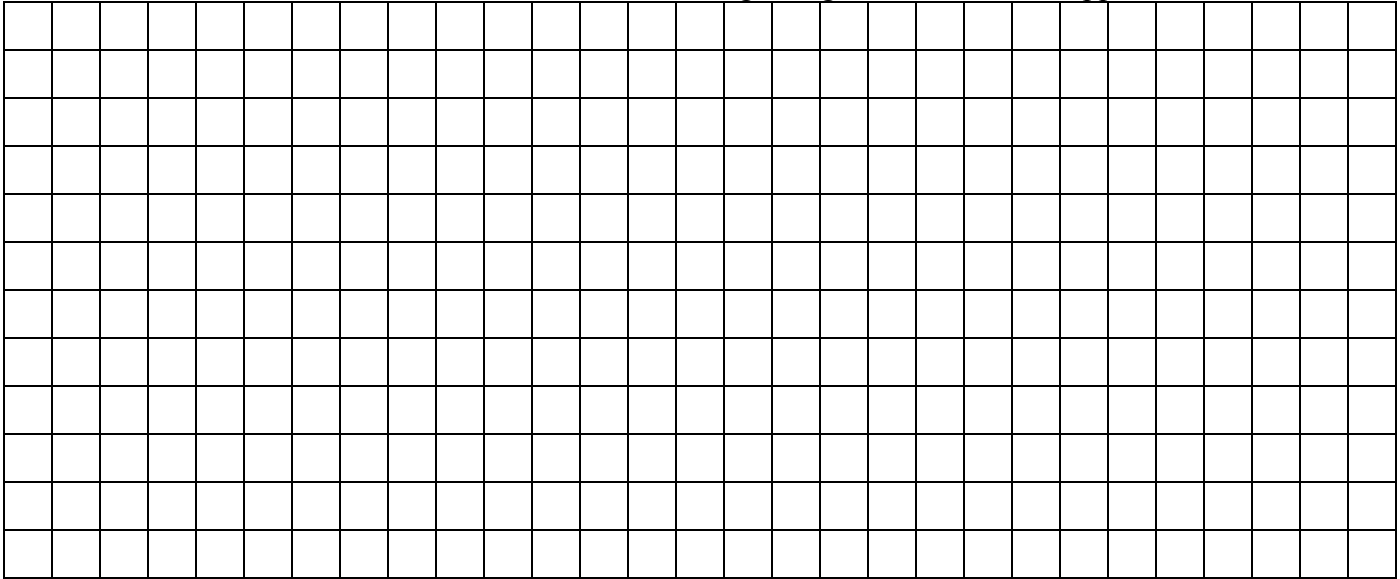
Record the following (Refer to the manual to see which symbol is which statistic)

mean
standard deviation (s)
n
min
Q1
median
Q3
max

II. Using the Statistics Plot

1. Select **Stat Plot** (2^{nd} Y=).
2. Hit Enter to select Plot 1.
3. Toggle cursor to “On,” by hitting Enter.
4. Select the fourth plot (a box plot with outliers) by hitting Enter.
5. Your data should be in List 1, so x-list should read “L1.”
6. Select “Zoom” (3^{rd} button, top row).
7. Choose option 9 (ZoomStat).

Reproduce the box plot in scale here. Use trace to find the end of the whisker and the ends of the box and the middle line on the box. Label and use a scale of fives, beginning at 400. Label all approximated values.

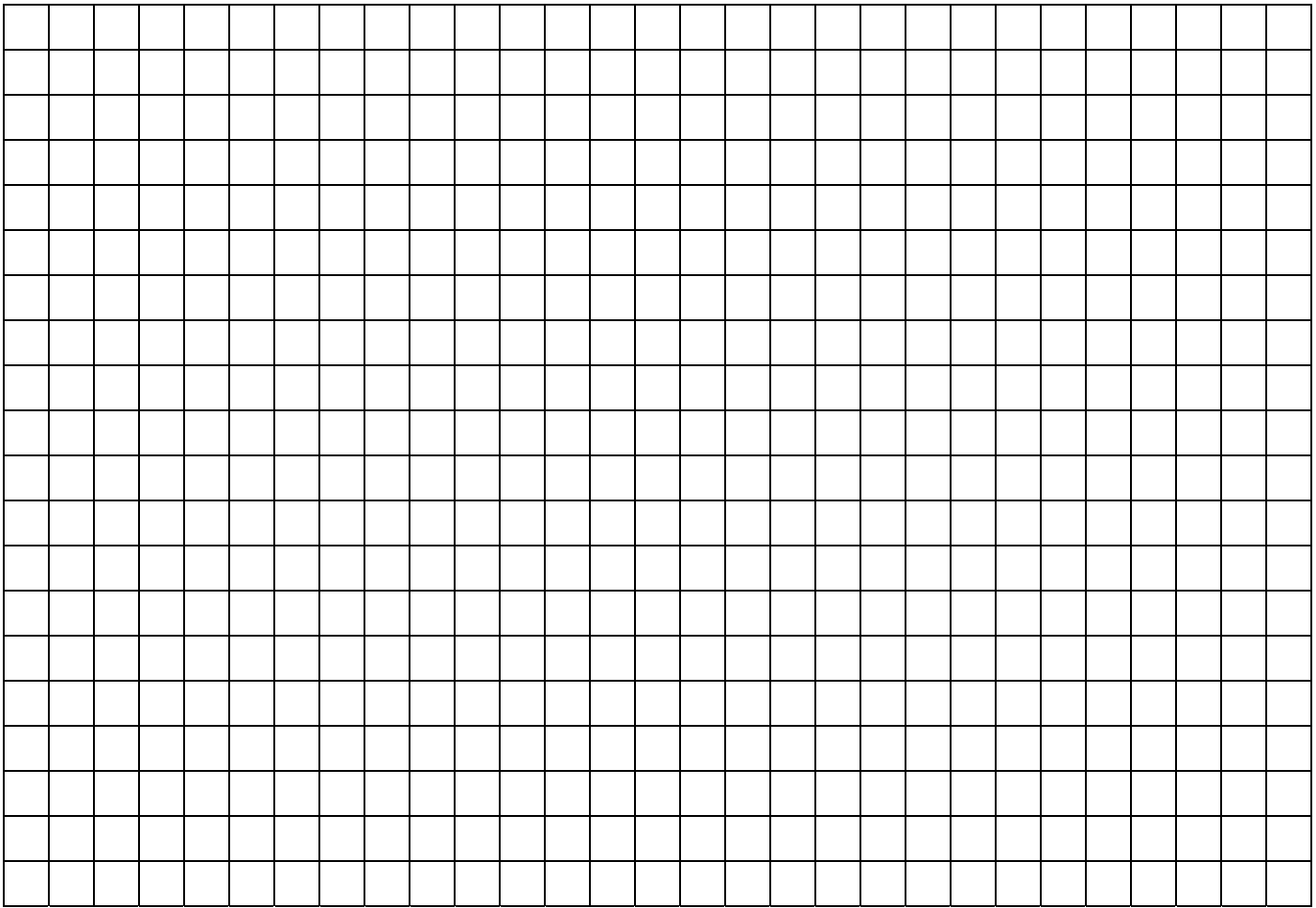


III. Practice with regression: If you are camping in the woods, can you tell what the temperature is if you know how fast a cricket chirps? Be sure to use chirps/minute as x and temperature as y.

Chirps/Min	Temperature (C)
110	18
110	19
130	20
135	21
154	23
158	24
179	26
201	29
210	31
230	32

Enter this data into L2 and L3. Plot a scatterplot (the first choice in the plots, 2^{nd} Y= again). Reproduce the scatterplot with scale and titled axes. Use a scale appropriate for the space provided. Indicate any breaks in your scale. Breaks may occur only at the beginning of an axis.

Remember to change the x-and y-lists to L2 and L3!



Now find the line of best fit using these commands: **Stat-Calc-8-L2, L3.**

Record the equation of the line along with r and r^2 :

If there were 190 chirps per minute, what would you predict the temperature to be? (*Don't forget to show your work and give units.*)

IV. Algebra I & II and Math Analysis Review

Show work for ALL problems on a separate sheet. Give answers on this page.

Simplify all answers. **Do not approximate or round.**

1. Solve for the variable.

a) $4(x - 2) = 3^2 - x$

b) $\frac{1}{3}n + 3 = n - 2$

c) $9(2p + 1) - 3p > 4p - 6$

d) $\frac{2}{3}y = \frac{8}{27}$

e) $(q - 12)3 \leq 5q + 2$

f) $\frac{m}{12} + \frac{5}{6} = \frac{5}{24}$

g) $\frac{1}{2}x^2 - 8 = 0$

h) $-3x^2 + 343 = 0$

i) $x^2 - 8x + 7 = 0$

j) $2\sqrt{x} + 9 = 21$

k) $\sqrt{2x + 10} = x + 1$

l) $\log_3 81 = x$

m) $\log_3 x = 5$

n) $\log_x 256 = 8$

o) $\log_2 (x + 1) = 1$

p) $\log_5 (x - 4) = 0$

q) $5(2)^{3x} - 4 = 13$

2. Write equations of the horizontal and vertical lines that pass through the point (-3, 4). Please label which equation is horizontal and which is vertical.

3. Find the slope and y-intercept of the line.

a) $y = \frac{2}{3}(2x - 4)$

b) $3x + 2y = 14$

c) $\frac{1}{3}y - 6x = 4$

4. Find the slope and write the equation of the line containing the given points.

a) (6, -2) and (0, 5)

b) (8, -5) and (3, 4)

5. On graph paper, plot the data given. Describe the data as linear, exponential, quadratic, or absolute value.

a. $(-3, 4)$ $(-2, 3\frac{1}{2})$ $(-1, 3)$ $(0, 2\frac{1}{2})$ $(1, 2)$ $(2, 1\frac{1}{2})$ $(3, 1)$ _____

b. $(-3, 4)$ $(-2, 3)$ $(-1, 2)$ $(0, 1)$ $(1, 2)$ $(2, 3)$ $(3, 4)$ _____

c. $(-3, 4)$ $(-2, 2)$ $(-1, 1)$ $(0, \frac{1}{2})$ $(1, \frac{1}{4})$ $(2, \frac{1}{8})$ $(3, \frac{1}{16})$ _____

d. $(-3, 4)$ $(-2, \frac{7}{3})$ $(-1, \frac{4}{3})$ $(0, 1)$ $(1, \frac{4}{3})$ $(2, \frac{7}{3})$ $(3, 4)$ _____

6. For each function, find $f(x)$ for $x = -3, 0,$ and 2

a. $f(x) = 4x - 2$

b. $f(x) = 3x^2$

$f(-3) =$ _____

$f(-3) =$ _____

$f(0) =$ _____

$f(0) =$ _____

$f(2) =$ _____

$f(2) =$ _____

7. Evaluate $g[f(-2)]$ and $f[g(3)]$ for each of the following functions.

a. $f(x) = 3x; g(x) = 2x + 3$

b. $f(x) = -x; g(x) = x^2 + 5$

$g[f(-2)] =$ _____

$g[f(-2)] =$ _____

$f[g(3)] =$ _____

$f[g(3)] =$ _____

V. First Day of Class: Bring your summer work, your calculator, your notebook, and a **1.69 ounce** (unopened) bag of **regular M&Ms.**

This summer assignment counts as a test grade. For each component that is missing a major deduction will occur.