





Summer Assignment 2022 Cambridge Christian School

Dear Student,

Welcome to AP Statistics! This is a college level Statistics course that is fun, interesting, and academically challenging.

This summer assignment will prepare you to move quickly through the first unit. It is **required** that this assignment be completed **individually**. Your summer work will be due at the beginning of class on the first day of school. It will count as your first grade and will be graded for correctness.

Should you have a question that you cannot figure out, please feel free to email me at <u>lcarson@ccslancers.com</u>. Please be patient as I may not have access to email every day.

I will be praying for each and every one of you this summer as I prepare for your arrival in August. May God keep you safe and I hope you have a wonderful (and productive) summer.

Mrs. Carson

The summer assignment is composed of two parts.

- 1. **Reading and Vocabulary:** You will use a free online Statistical tutoring site that will give you information on variable and data displays. While reviewing the information on the site you will be completing a vocabulary list (See page 2 and 3).
 - Go to <u>www.stattrek.com</u>
 - Click on "AP Statistics" then "AP Tutorial"
 - On the left side of the screen is a list of topics. Click on **Exploring Data**. You will need to read "*The Basics*" and "*Charts and Graphs*" to complete the vocabulary list.

Exploring Data: The Basics
Variables
Population vs Sample
Mean and Median
Variability
Position
Exploring Data: Charts and Graphs
Patterns in Data
Dotplots
Histograms
Stemplots
Boxplots
Cumulative Plots
Scatterplots
Comparing Data Sets

2. **Practice Problems:** After reading all of the material above you should be able to complete the questions in the remaining pages of this packet. You should do so in the spaces provided.

PART 1: READING AND VOCABULARY

Define each of the following terms from the information on the stattrek website. When asked, provide a **UNIQUE** example or sketch of the word... One **NOT** given on the website and **NOT** the one your friends use.

1. Categorical Variables

Example:

2. Quantitative Variables

Example:

- 3. Discrete Variables
- 4. Continuous
- 5. Univariate Data
- 6. Bivariate Data

7. Population

Example:

8. Sample

Example:

9. Median

10. Mean

Formula:

11. Outlier

12. Parameter

13. Statistics

15. Standard Score (z-score)

Formula:

16. Center

17. Spread

18. Variance:

Formula:

19. Standard Deviation

Formula:

20. Symmetry

Sketch:

21.	Unimodal	22.	Bimodal
	Sketch:		Sketch:
23.	Skewness		
	Sketch Skewed left:		Sketch Skewed right:
24.	Uniform		
	Sketch		
25.	Gaps	26.	Outliers
	Sketch:		Sketch:
27.	Dot plots		

28. Bar chart

29. Histogram

30. Difference between bar chart and histogram

31. Stemplots

32. Boxplots

33. Quartiles

34. Range

35. Interquartile Range (IQR)

36. Four ways to describe data sets

37. Types of graphs that can be used for comparing data

PART 2: PRACTICE PROBLEMS

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 winners
11.	Type of medication
12.	Jellybean flavors
13.	Country of origin
14.	Type of meat
15.	Number of pairs of shoes owned

16. A statistic is a number calculated from data. Determine the given statistics from the data below on the number of homeruns Mark McGuire hit in each season from 1982 – 2001. Show ALL work to receive credit.

70	52	22	49	3	32	58	39
39	65	42	29	9	32	9	33

Mean:

Minimum: Maximum: Median: Q1: Q3: Range:

IQR:

17. In 1997 there were 92,353 deaths from accidents in the United States. Among these were, 42,340 deaths from motor vehicles accidents, 11,858 from falls, 10,163 from poisoning, 4051 from drowning, and 3601 from fires. The rest were listed as "other" causes.

NEATLY (**using a ruler**) create a well-labeled **bar graph** of the distribution of causes of accidental deaths. Be sure to include an "other causes" bar.



18. The data below give the number of hurricanes that happened each year from 1944 - 2000 as reported by *Science Magazine*.

3	2	1	4	3	7	2	3	3	2	5	2	2	4
2	2	6	0	2	5	1	3	1	0	3	2	1	0
1	2	3	2	1	2	2	2	3	1	1	1	3	0
1	3	2	1	2	1	1	0	5	6	1	3	5	3

NEATLY (**using a ruler**) make a **dotplot** to display this data. Make sure you include appropriate labels, title, and scale. Be sure to evenly space your markings.

arranged in increasing order.									
3	9	9	11	13	14	15	16	17	17
18	18	19	20	20	20	21	22	23	24
25	25	26	26	28	28	28	28	32	35
36	39	39	41	43	44	45	45	47	49
50	53	55	59	61	70	83	86	86	93

19. A marketing consultant observed 50 consecutive shoppers at a supermarket. One variable of interest was how much each shopper spend in the store. Here are the data (rounded to the nearest dollar), arranged in increasing order.

NEATLY (**using a ruler**) create a **stemplot** (also called a stem and leaf plot) using tens of dollars as the stem and dollars as the leaves. For example, in the number 15, 1 is the stem and 5 is the leaf. Make sure you include the appropriate labels, title, and **key**.