Summer Packet

Course: Honor Statistics

This summer packet consists of two parts, definitions and practice problems. Listed below are terms you should be familiar with. We will be using these terms throughout the course. Please place definitions on separate sheets of paper (handwritten) and attach to this packet. There are 21 practice problems altogether. Each completed practice problem is worth 1 point and each definition ½ point, bringing the total possible grade to a $\frac{35}{35}$. We will be having a quiz during the first week of class after reviewing the summer packet.

Several of the definitions can be found on https:www.stattrek.com/statistics/dictionary.aspx. This packet is due the first class that we meet after summer vacation. Have a nice summer! And **STAY SAFE!!**

Terms:

1) Statistics

2) Quantitative Variable

3) Qualitative Variable

4) Parameter

5) Statistic

6) Descriptive Statistics

7) Inferential Statistics

8) Simulation

9) Sampling Frame

10) Census

11) Observational Study

12) Experiment

13) Placebo Effect

14) Blocking in an experiment

15) Blinding in an experiment

16) Double-Blinding in an experiment

17) Frequency

18) Histogram

19) Outlier

20) Bar graph

21) Stem-and-leaf plot

22) Mean

23) Mode

24) Range

25) Standard deviation

26) Percentile

27) Quartile

28) Box-and whisker plot (or boxplot)

Cathy the Extreme Couponer is looking at several different store ads. She makes the table below to show the prices on the same food at different stores. Help her find the Mean, Median, Mode, and Range of the price of the foods at all three stores.

	BREAD	MILK	EGGS	FROOT LOOPS
Aldi	$1.99	$2.99	$3.99	$3.89
Publix	$3.29	$2.59	$4.29	$2.50
Winn-Dixie	$2.45	$3.50	$2.89	$2.99

SHOW HOW YOU ARRIVED AT YOUR ANSWER FOR EACH QUESTION.

Comparing Foods

1. What is the average price of a loaf of bread at the three stores?

2. What is the range of prices for a carton of eggs at the three stores?

3. What is the median of prices of Froot Loops at all three stores?

4. What is the average price of milk at the three stores?

Comparing Stores

5. What is the median price of the food at Aldi?

6. What is the average price of the food at Publix?

7. What is the range of prices of the food at Winn-Dixie?

8. What is the average price of the food at Aldi?

9) Calculate the mode, mean, and median of the following data:

18	10	15	13	17	15	12	18	16	11

10) Calculate the mean, median, and mode of the following grade-point averages:

3.2	2.5	2.1	3.7	2.8	2.0

11) Explain the difference between the calculation of the median for an odd and an even number of measurements.

12) Construct a stemplot for the high temperatures (in degrees Fahrenheit) for the 31 days in July (recorded at Broward Community College):

80	68	84	86	85	77	64	81	93	94	97	93
89	82	76	75	83	90	83	84	92	94	90	92
91	84	81	84	79	80	80					

Here is a small part of a data set that describes the students in a Statistics class. The data come from anonymous responses to a questionnaire filled out on the last day of class last year.

Gender	Hand	Height (inches)	Homework time (min)	Favorite music	Pocket change (cents)
F	L	65	200	Hip-hop	50
M	L	72	30	Country	35
M	R	62	95	Rock	35
F	L	64	120	Alternative	0
M	R	63	220	Hip-hop	0
F	R	58	60	Alternative	101
F	R	67	150	Rock	215

13) What individuals does this data set describe?

14) What variables were measured? Identify each as qualitative or quantitative.

15) Describe the individual in the highlighted row.

16) Construct a bar graph of the students' favorite music.

17) Construct a pie chart of the students' gender.

Ten neighborhood kids went out to score some candy on Halloween night. Here's a list of the number of treats they collected.

$$45 \quad 34 \quad 56 \quad 32 \quad 10 \quad 32 \quad 62 \quad 11 \quad 55 \quad 34$$

18) Find the mean and median number of treats.

19) The kid who at first came home with 62 treats got even greedier and went back out. At the end of the night he ended up with 262 treats! Find the new mean and median of these ten children.

20) How do the new mean and median compare to the original values?

21) Which does a better job of describing the typical number of treats for the new data – the mean or the median? Why?