Name _____

Elementary Statistics

Date _____

Period _____

Chapter 3 QUIZ REVIEW

(Sections 3.1-3.3)

Part I: Match the following vocabulary with the correct definition

Vocabulary Word	Definition				
1. Sample mean	a. the data value that is far from the other data values				
2. Population mean	b. the most frequent data value				
3. Median	c. a measure of how much data values deviate away from the mean				
4. Mode	d. finding the measure of center when different data values are assigned different weights				
5. Midrange	e. the middle data value when the data is arranged in order				
6. Outlier	f. the sum of the data values divided by the number of data values in the sample				
7. Weighted mean	g. the number halfway between the maximum and minimum data values				
8. Range	h. the sum of the data values divided by the number of data values in the population				
9. Standard deviation	i. the percent that describes the standard deviation relative to the mean				
10. Variance	j. the difference between the maximum and minimum data values				
11. Coefficient of variation	k. a measure of variation equal to the square of the standard deviation				

Part 2: Match the symbols with the correct calculation:

σ	a. sample standard deviation
S ²	b. sample variance
<i>x</i>	c. population standard deviation
S	d. population variance
Σ	e. sample mean
σ ²	f. population mean
n	g. median
μ	h. number of data values
<i>x</i>	i. sum

Part 3: Short Answer. Please show all of your work.

12. The following numbers are the home zip codes of students in a college statistics class at Ulster County Community College. Determine if the mean, median, or mode would be meaningful measures of center. Explain your answer.

12401 12477 12448 12204 12201 12456 12875 12248 12477 12204 12401 12201

13. A male student of the author has a measured pulse rate of 52 beats per minute. It is found that all males have a mean pulse rate of 67.3 beats per minute and a standard deviation of 10.3 beats per minute.

a. Convert this student's pulse rate to a z-score.

b. Based on the z-score found in part a, would you consider this student's pulse rate to be usual or unusual? Explain.

14. Scores on the SAT test have a mean of 1518 and a standard deviation of 325. Scores on the ACT test have a mean of 21.1 and a standard deviation of 4.8. Which is relatively better: a score of 1490 on the SAT test or a score of 17.0 on the ACT test? Why?

15. The list below shows the selling prices (*in thousands of dollars*) for a sample of homes located on Long Beach Island, NJ in the year 2000.

235	538	199	695	395	446	219	389	547	435	239	489
469	639	309	489	369	499	399	599	279	399	190	549

a. Find the mean selling price for this sample of homes on Long Beach Island.

b. Organize the data above using the given frequency table:

Selling Price of Homes (<i>in thousands of dollars</i>)	Frequency
100-199	
200-299	
300-399	
400-499	
500-599	
600-699	

- c. Find the mean of the data summarized in the frequency distribution.
- d. Is the mean of the frequency distribution the same as the mean found from the original data values? Why or why not?

16. Suppose that you and your mother are arguing about which NBA team is the greatest ever. You say it's LeBron James and the 2015-2016 Cleveland Cavaliers, while your mom argues that no team will ever top the 1995-1996 Chicago Bulls, with Michael Jordan at his peak. You decide to compare the top 8 scorers for each team. Their average points per game are shown in the table below.

Cavaliers	25.3	19.6	16.0	13.0	12.4	8.2	7.8	7.8
Bulls	30.4	19.4	13.1	9.1	8.4	8.4	5.5	5.3

a. Find the MEAN of the points scored by the top 8 scorers of EACH team.

b. Find the MEDIAN of the points scored by the top 8 scorers of EACH team.

c. Find the MODE of the points scored by the top 8 scorers of EACH team.

d. Find the MIDRANGE of the points scored by the top 8 scorers of EACH team.

e. Which statistics support your argument that the Cleveland Cavaliers were the best team ever?

f. Which statistics could your mom use to support her argument that the Chicago Bulls were the best team ever?

17. A local community college uses the following weights for calculating a student's GPA:

A = 4 B = 3 C = 2 D = 1 F = 0

One particular student took a semester with 17 total credits. She received an A in College Algebra (4 credits), a B in Biology (4 credits), a B in European History (3 credits), an A in Psychology (3 credits), and a B in Creative Writing (3 credits). Find her GPA to the nearest hundredths place.

18. Listed below are the measured radiation emissions (in W/kg) corresponding to 11 different popular cell phones.

 $0.38 \quad 0.55 \quad 1.54 \quad 1.55 \quad 0.50 \quad 0.60 \quad 0.92 \quad 0.96 \quad 1.00 \quad 0.86 \quad 1.46$

Use the data to answer the following questions. (If necessary, round your final answers to the thousandths place & don't forget to label your answers with the appropriate units)

a. What is the mean?

b. What is the range?

c. What is the standard deviation?

d. What is the variance?

e. How could you estimate the standard deviation? What would the estimate be?

f. Using the range rule of thumb, what are the minimum usual value AND the maximum usual value?

g. Using the minimum and maximum *usual* values you found in part f, would it be unusual for a cell phone to have radiation emissions of 1.25 W/kg? Why or why not?

h. Would it be more appropriate to use the Empirical Rule or Chebyshev's Theorem to interpret the standard deviation of this data set? Why?

i. What is the coefficient of variation?