



Name _____ Period _____ Date _____

NON-CALCULATOR SECTION

Vocabulary: Define each word and give an example.

1. Standard Deviation

2. Mean

3. Interquartile Range

Short Answer:

4. Sketch a distribution below that is skewed to the left. Approximate where the median and mean would be at in your sketch.

5. Name a measure of center and measure of variability that ARE resistant.

Review:

6. Simplify: $3(x - 2) - 4(x + 1)$ 7. Evaluate the expression: $2a^2 - 3b$ if $a = -3$ and $b = 4$ 8. Solve the equation: $2n - 7 = 11$



****Be sure to show all work used to obtain your answer. Circle or box in the final answer.****

9. The graph below shows how many jelly beans a small group of children have. Find the mean, median and mode.



mean: _____

median: _____

mode: _____

Describe the shape of the distribution: _____

10. Here are the bowling scores of Ms. Smith's class for 16 of the players: 89, 111, 78, 107, 92, 74, 106, 85, 93, 111, 116, 104, 89, 97, 112, and 83. Determine the 5-number summary.

min: _____

Q₁: _____

median: _____

Q₃: _____

max: _____

11. Using the bowling scores above, find the IQR.

IQR: _____

12. Determine if there are any outliers in the bowling scores data. Show all work below for credit. State yes or no and give the values that are cutoffs for high and low outliers.

13. Make a stem-and-leaf plot for the following data:

Put your stemplot in the rectangle at the right.

97, 92, 82, 70, 71, 72, 73, 62, 73, 84, 86, 87, 90, 88, 80

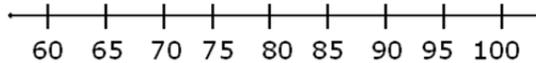
a) Find the range of the data. _____

b) Describe the distribution.



14. Part 1: The chart at right shows the scores for each of Sam and Mary’s math grades for a school term. Using this chart, create side-by-side box and whisker plots to compare Sam’s and Mary’s math grades.

Sam	Mary
90	85
85	90
65	78
76	85
89	82
92	95
83	80



Part 2:

Using the data from the same chart at right, which of the following is true? _____

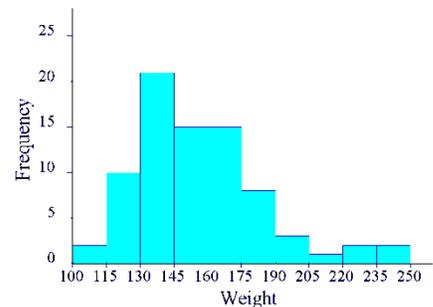
- a) The range for Sam’s data is less than Mary’s range.
- b) The mean for Mary’s data is the same as the median for Sam’s data.
- c) Mary’s mean score is less than Sam’s mean score.
- d) Mary’s median score is higher than her mean score

Part 3: Write a BRIEF comparison of Sam and Mary’s math grades. (three sentences)

15. Classify each variable as categorical or quantitative. If it is quantitative, state whether it is discrete or continuous.

- a. The ethnicity of students at your school. a. _____
- b. Amount of coffee in a small latte at Starbucks. b. _____
- c. The number of states that you have visited. c. _____

16. Part 1: At the right is a graph of the weights (in pounds) of 79 students. Describe the distribution. (SOCS)



Part 2: Do you think the mean or median is larger? Explain.



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CALCULATOR SECTION

1. Find the mean and standard deviation of the data set. {96, 82, 100, 90, 71, 83}
Must show all work for credit.

2. A survey of 545 middle school students asked: What is your favorite winter sport? The results are summarized below.

Grade	Snowboarding	Skiing	Ice Skating	TOTAL
6th	68	41	46	155
7th	84	56	70	210
8th	59	74	47	180
TOTAL	211	171	163	545

- a) If a student is selected at random, what is the relative frequency of selecting a student whose favorite sport is skiing?
- b) If the student selected is a 7th grader, what is the relative frequency of those that prefer ice skating?
- c) What is the relative frequency of students that are in 8th grade and like skiing best?
- d) What is the relative frequency of picking a student that is in 6th grade and prefers snowboarding?
- e) Given that the student selected states that ice skating is their favorite winter sport, what is the relative frequency that they are in 7th grade?



3. Ruby asks her classmates how many hours they sleep each night during the week and separates the responses by gender in the two-way frequency table below.

Gender	Hours of sleep			
	4-6	6-8	8-10	10-12
Male	5	14	8	2
Female	11	10	5	1

- a) What is the joint RELATIVE frequency of males who sleep 8 – 10 hours?
 b) Find the marginal RELATIVE frequency of each interval for hours of sleep.

4. A high school principal randomly surveyed students about a change in the dress code. The results are shown in the table.

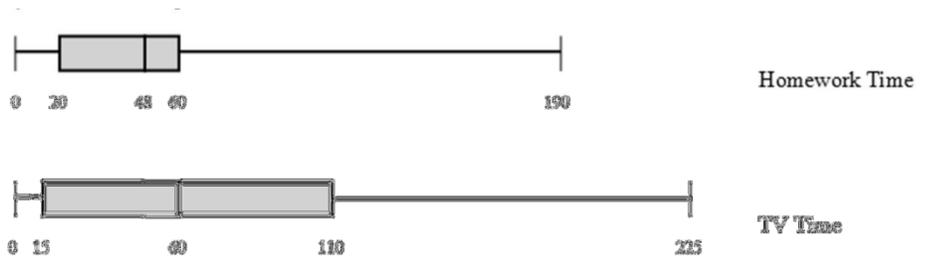
		Class		
		Freshmen	Sophomores	Juniors
Favors the change	Yes	56	38	32
	No	24	37	58

- a) What percentage of all respondents favors the policy change?
 b) Which class has the highest favorable percentage? Which class has the lowest favorable percentage?

- c) Is there a relationship between class and favoring the dress code change? Explain.

5. The box-and-whisker plot above compares homework time and tv time for a class of 8th grade Algebra students. Which statement is false?

Circle the letter of the correct answer.



- A. The upper quartile for homework time is the same as the median for tv time.
 B. The interquartile range for tv time is less than that for homework time.
 C. The range for tv time is greater than the range for homework time.
 D. The MAD for homework time is most likely less than the MAD for tv time.