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|-----------------------|--------------|
| Elementary Statistics | Name: _____ |
| Study Guide 7 | Class: _____ |
| Due Date: _____ | Score: _____ |

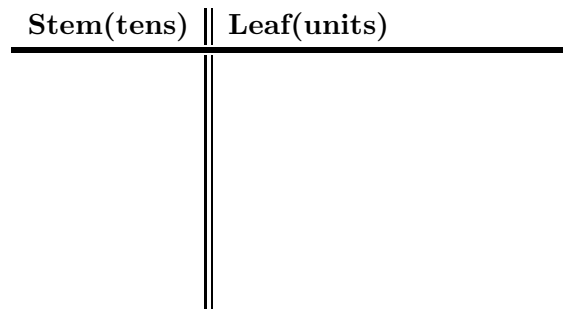
Your solutions must be consistent with class notes & resources.

Be Neat, Organized, and No Work \Leftrightarrow No Points

1. Ages of 32 randomly selected college students are given below.

23 35 32 18 19 20 40 29 24 19 23 24 50 19 32 35
 42 25 28 27 30 27 28 40 45 38 40 25 30 35 20 20

(a) (3 points) Construct the stem plot.



(b) (3 points) Find P_{10} .

(b) _____

(c) (3 points) Find P_{50} .

(c) _____

(d) (3 points) Find the percentile ranking for 30, that is find k such that $P_k = 30$.

(d) _____

2. The table below contains the class midpoints and the corresponding class frequencies.

(a) (4 points) Complete the table below.

| Class Midpoint x | Class Frequency f | $f \cdot x$ | $f \cdot x^2$ |
|--------------------|---------------------|-------------|---------------|
| 4 | 3 | | |
| 7 | 5 | | |
| 10 | 2 | | |

(b) (1 point) Find the sample size $n = \sum f$.

(b) _____

(c) (2 points) Find $\sum f \cdot x$.

(c) _____

(d) (2 points) Find $\sum f \cdot x^2$.

(d) _____

(e) (2 points) Find the sample mean rounded to a whole number.

(e) _____

(f) (3 points) Find the exact value of the sample variance in reduced fraction.

(f) _____

(g) (2 points) Find the standard deviation rounded to three decimal places.

(g) _____

3. Consider the unfinished frequency distribution table representing quiz score in a math class.

(a) (4 points) Complete the frequency distribution table below:

| Letter Grade | Class Limits | Class Midpoint | Class Frequency | Relative Frequency | Percentage Frequency |
|--------------|--------------|----------------|-----------------|--------------------|----------------------|
| D | 0 - 6 | | 5 | | |
| C | 7- 13 | | 7 | | |
| B | | | 9 | | |
| A | | | 4 | | |

(b) (1 point) What is the sample size for this data?

(b) _____

(c) (1 point) What is the class width for this grouped data?

(c) _____

(d) (2 points) Find \bar{x} . Round your answer to a whole number.

(d) _____

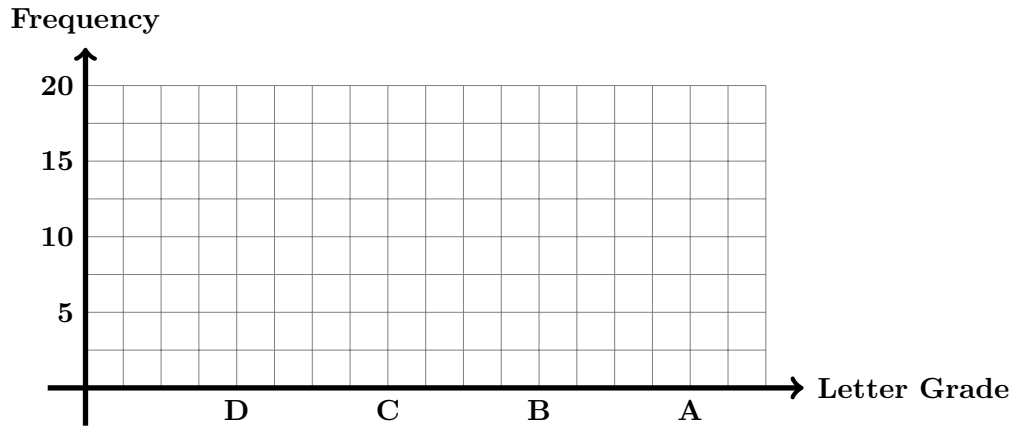
(e) (2 points) Find s . Round your answer to a whole number.

(e) _____

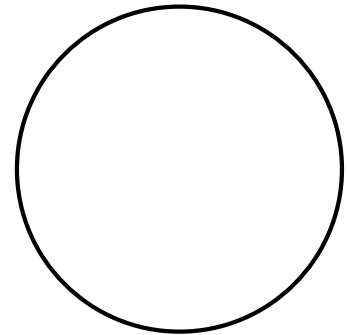
(f) (2 points) Find the exact value in reduced fraction for s^2 .

(f) _____

- (g) (3 points) Draw the bar chart for this grouped data. Clearly label and mark your graph with letter grade and class frequency.



- (h) (3 points) Draw pie chart. Clearly label and mark your graph. Show the percentage for each slice of the pie chart and letter grade to name corresponding slice.



4. The mean of exam scores in a math class was 85 with standard deviation of 8.

- (a) (2 points) Lisa had a score of 95, find her z -score.

(a) _____

- (b) (2 points) Jose had a z -score of -1.25 , find his exam score.

(b) _____

Your willingness to learn makes all the difference. Stay positive.