

Name: \_\_\_\_\_

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If you have any questions regarding **STATISTICS** please contact either of us via the above email addresses.

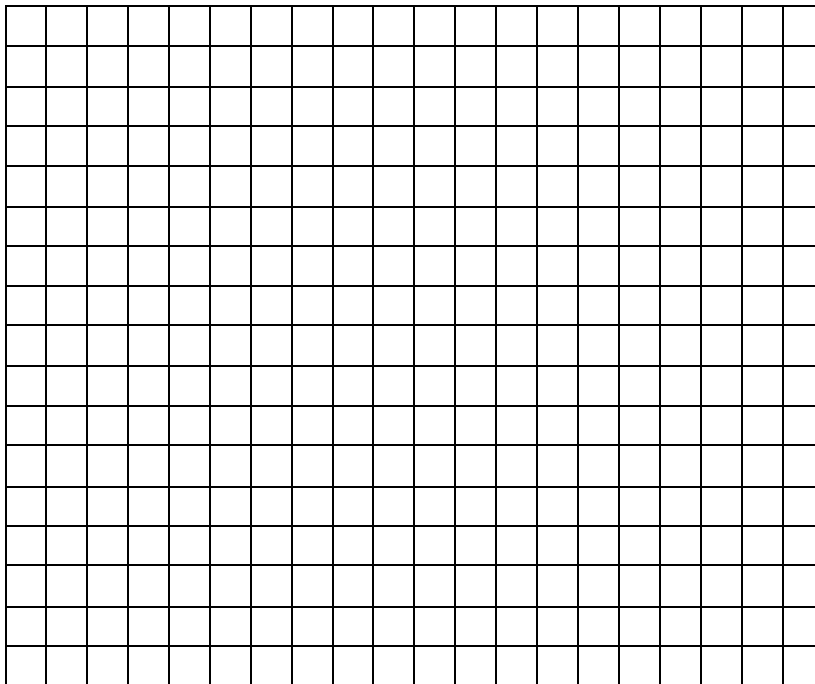
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### I. Regression

The data below represents the high temperatures in West Seneca for a ten-day period in May 2018.

Day	1	2	3	4	5	6	7	8	9	10
Temp.	73	77	81	78	77	79	82	81	80	76

1. Create a scatterplot for the data. Clearly label.



2. Using either algebra or your calculator, determine the equation of the **line of best fit** (linear regression), please round your coefficients to the thousandths.

3. Based on your above rounded equation, what would you **expect** the temperature (to the nearest degree) to be on the 12<sup>th</sup> day?

4. Determine the **linear correlation coefficient**( $r$ ) for your equation to the nearest thousandth. Explain the meaning. [remember – diagnostics ON]

## II. Measures of Central Tendency

5. Using your ten temperatures, find the following: [remember-stat-calc-1var stats]

**Mean:**

**Range:**

**Median:**

**IQR:**

**Mode:**

**Sample standard deviation:**

6. Create a **Box-and-Whisker** (boxplot) plot of your data. Clearly label.

7. Listed in the table are the final averages of a math class. How many of these students scored within one standard deviation of the mean?

Grade $x_i$	Frequency $f_i$
98	2
94	1
90	3
86	1
82	4
75	1
71	2
69	1

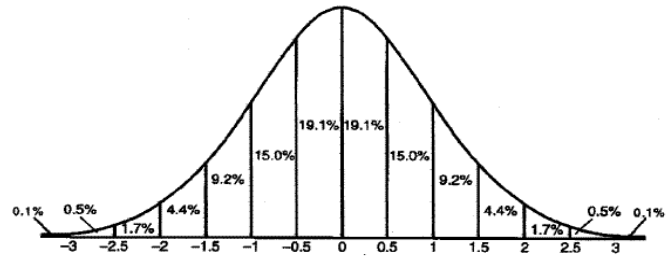
## III. Normal Distributions

8. Twenty high school students took the Math B examination and received the following scores:  
70, 60, 75, 68, 85, 86, 78, 72, 82, 88, 88, 73, 74, 79, 86, 82, 90, 92, 93, 73.

a) Determine the **mean** and **standard deviation**( $\sigma_x$ ) of your data, round to the nearest tenth.

b) Approximately 68% of the data fall between which two scores?

c) Approximately 95% of the data fall between which two scores?

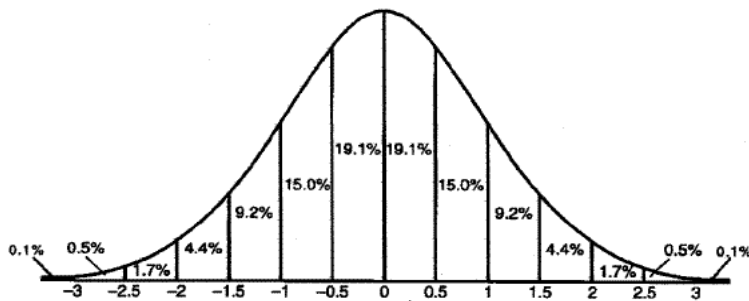


d) Approximately 99% of the data fall between which two scores?

e) If Mrs. Buesink scored a 97.1% what percentile is she at?

f) What percent of scores fall between 71% and 97.1%?

9. In a certain school district, the ages of all new teachers hired during the last 5 years are normally distributed. Within this curve, 95.4% of the ages, centered about the mean, are between 24.6 and 37.4 years. Find the **mean** age and the **standard deviation** of the data.



#### IV. Probability

10. The 4 aces are removed from a deck of cards. A coin is tossed and one of the aces is chosen. What is the probability of getting heads on the coin and the ace of hearts?

11. A fair coin and a six sided die are tossed simultaneously. What is the probability of getting a heads or a 6?

12. Out of 40 students at a local college, 14 are taking English Composition, 29 are taking Chemistry and 5 are taking both classes. How many students are in neither class? (Venn diagram)

13. The table shows the game and snack preference for a group of 115 people.

a) Find the probability that a person from this group likes monopoly and chips and dip.

b) Find the probability that a person chose cookies, given that they chose Wii bowling.

	Pizza Rolls	Chips and Dip	Cookies	Totals
Poker	10	3	12	25
Trivial Pursuit	8	14	7	29
Monopoly	14	17	7	38
Wii Bowling	12	7	4	23
<b>Totals</b>	<b>44</b>	<b>41</b>	<b>30</b>	<b>115</b>

c) Are game preference and snack preference independent? Show work to support your answer.

14. The mean, median, and standard deviation of test scores on a recent Algebra 2 test were 82.3%, 80.9%, and 5.7% respectively.

a) Find the interval that will contain 95% of the scores

b) Grace scored a 96%. Is her score unusual? Explain.