Name: Selected Answers Period: _____

Score: _____/_____ _____%

HW 7-2 HONORS: Measures of Spread

Put the data set below into a graphing calculator and answer the following questions.

42, 48, 51, 39, 47, 50, 48, 51, 54, 46, 49, 36, 50, 55, 51, 43, 46,
50, 52, 43, 40, 33, 51, 45, 53, 44, 40, 52, 54, 48, 51, 47, 43, 50, 46

1. Find the mean, median, and standard deviation.

$\bar{x} = 47.09$ Med = 48 $\sigma = 5.18$

2. Create a histogram for the data set on a separate sheet of paper. (Use intervals of 5)

3. Mark the median and mean in histogram bar in which it occurs.

4. Describe the distribution – normal, skewed right, or skewed left.

5. If the distribution is normal, calculate one standard deviation above and below the mean.

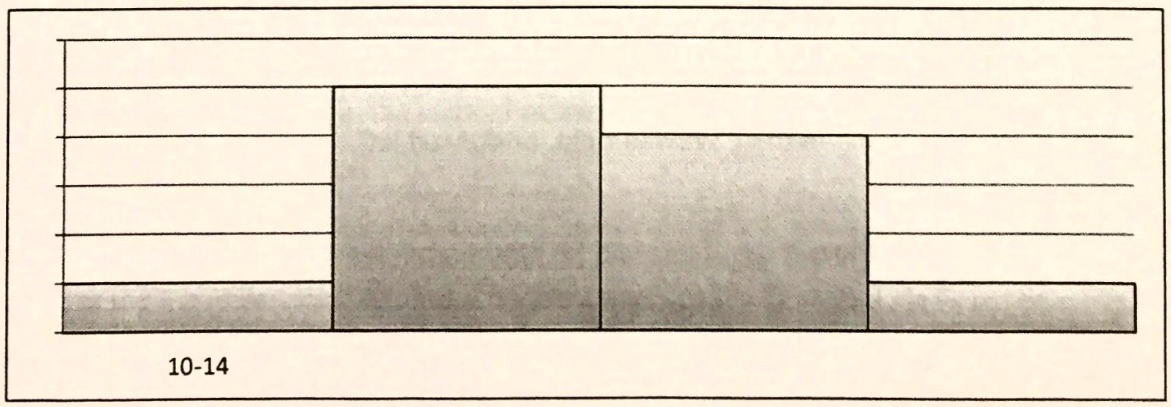
Above: 52.27 Below: _____

An amusement park manager kept track of how many bags of cotton candy they sold each hour on a Saturday.

16, 24, 15, 17, 22, 16, 18, 24, 13, 25, 21

6. Find the mean, median, and standard deviation.

7. The histogram of the data set is shown below. Finish labeling the histogram on both axes and titles. Mark the median and mean in the interval in which they occur.



8. Describe the distribution – normal, skewed right, or skewed left.

9. If the distribution is normal, calculate one standard deviation above and below the mean.

Below: 15.21

10. Between what numbers does most of the data lie for this data set?

11. Let's say one hour during the day, there were 100 students who showed up and all wanted to buy cotton candy. Without calculating, decide how will this data point affect the **mean** (higher or lower) and estimate whether the graph will be **skewed** or not?

Adding the data point of 100 will make $\bar{x}$ higher. It will probably be skewed.

12. Find the NEW **mean** and **median** with this new data point. Which is affected more by the 100 being added to the set of numbers?

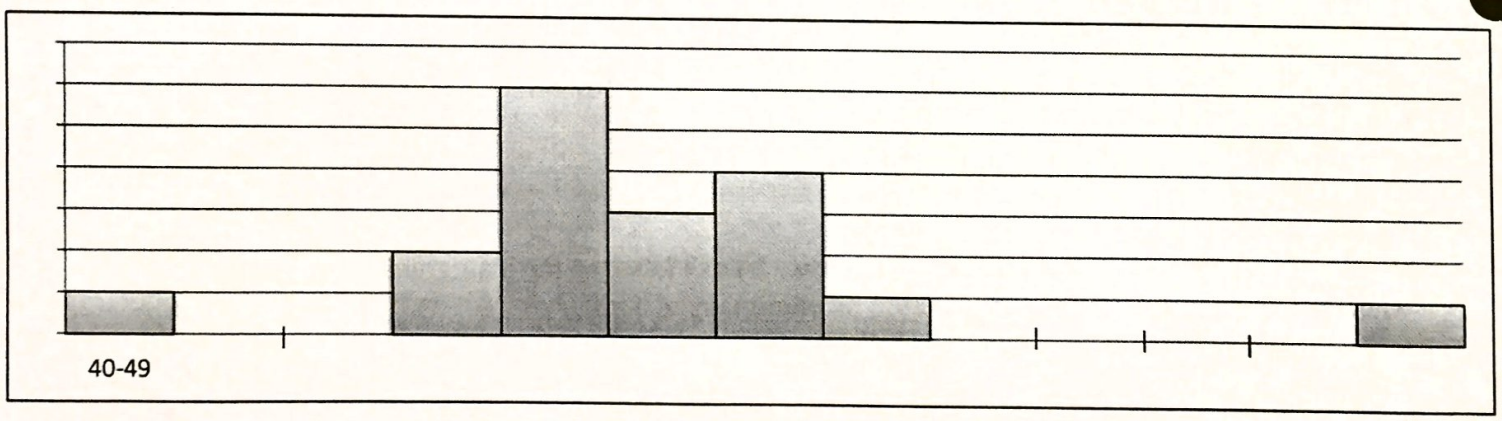
13. Will this data point **skew** the graph? If so, why?

The owner of a public swimming pool tracked the daily attendance.

Daily Attendance					
86	45	91	104	95	88
111	85	79	102	166	103
89	94	79	103	88	84

14. Find the mean, median, and standard deviation.

15. The histogram of the data set is shown below. Finish labeling the histogram on both axes and titles. Mark the mediate and mean in the interval in which they occurs.



16. Describe the distribution – normal, skewed right, or skewed left.

17. Between what numbers does most of the data lie for this data set?

71.64 & 116.36

18. One day during the summer was very stormy and only 10 people showed up at the pool. If we were the add this number to the set we already have, which would be affected more – the **mean** or the **median**?

19. Would the measure of center from #22 go up or down?

down

The coach of the Wildcats basketball team is comparing the number of fouls called against his team with the number called against their rivals, the Timberwolves.

Below are the data sets for both teams and the 1-variable statistics for each set.

Wildcats			
15	12	13	9
11	12	14	12
8	16	9	9
11	13	12	14

Wildcats – Screen 1

```
1-Var Stats
 x̄=11.875
 Σx=190
 Σx²=2336
 Sx=2.305789814
 σx=2.232571387
↓n=16
```

Wildcats – Screen 2

```
1-Var Stats
↑n=16
 minX=8
 Q₁=10
 Med=12
 Q₃=13.5
 maxX=16
```

Timberwolves			
9	3	11	9
11	1	15	11
10	19	1	20
2	10	17	21

Timberwolves – Screen 1

```
1-Var Stats
 x̄=10
 Σx=160
 Σx²=2336
 Sx=7.004760286
 σx=6.782329983
↓n=16
```

Timberwolves – Screen 2

```
1-Var Stats
↑n=16
 minX=1
 Q₁=2.5
 Med=10
 Q₃=16
 maxX=21
```

20. Identify the mean, median, and standard deviation for each data set from the 1-Var Stats screens.

21. Look at the mean for each set. Are they close together or very far apart? What does this tell you about the teams? Pretty close. Both teams have similar averages for the # of fouls called against them per game.

22. Look at the standard deviation for each set. Are they close together or very far apart? What does that mean in the story?

23. Calculate one standard deviation above and below the mean for each data set.

Wildcats: 9.645 - 14.105 Timberwolves: 3.22-16.78

24. What do these ranges mean in the context of the story?

Answer the following for each set of data (#29-31) - *Use a separate piece of graph paper*

a) Determine the mean, median, mode, and range, and IQR.
b) Create a box- and – whisker plot
c) Create a frequency table of the data and then create a histogram (Use intervals of 2)
d) Describe the distribution – normal, skewed right, skewed left.

25) **23, 24, 25, 20, 25, 29, 25, 30**
26) **2, 3, 4, 15, 13, 14, 15, 4, 14, 16**
27) **1, 1, 3, 5, 5, 10, 5, 1, 14, 20, 21**