Name: Key Hour: ____ **Prob & Stats Quiz Review 2**

Part 1: Measures of Central Tendency (Mean, Median, Mode, & Range)

1)

Flu	Male	Female	Frequency
0	15	18	33
1	12	20	32
2	7	18	25
3	14	8	22

Mean: $\frac{33(0)+32(1)+25(2)+22(3)}{33+32+25+22} = \frac{148}{112} = 1.32143$

Median: $112 \div 2 = 56 + 0.5 = 56.5$ (1)

Mode: 0

Range: $3-0 = 3$

2)

Average # of Books Owned	Male	Female	Frequency
5	10	23	33
10	15	24	39
15	4	11	15
20	2	5	7

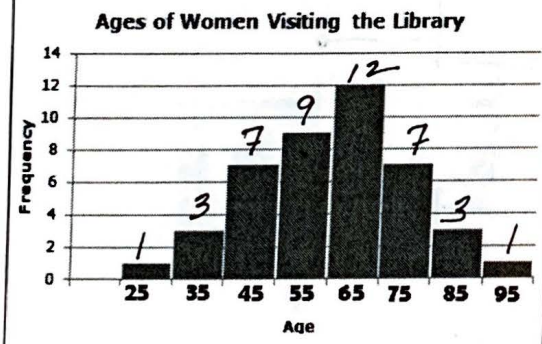
Mean: $\frac{33(5)+39(10)+15(15)+7(20)}{33+39+15+7} = \frac{920}{94} = 9.78723$

Median: $94 \div 2 = 47 + 0.5 = 47.5$ (10)

Mode: 10

Range: $20-5 = 15$

3.



Mean: $\frac{1(25)+3(35)+7(45)+9(55)+12(65)+7(75)+3(85)+1(95)}{43} = \frac{2595}{43} = 60.3488$

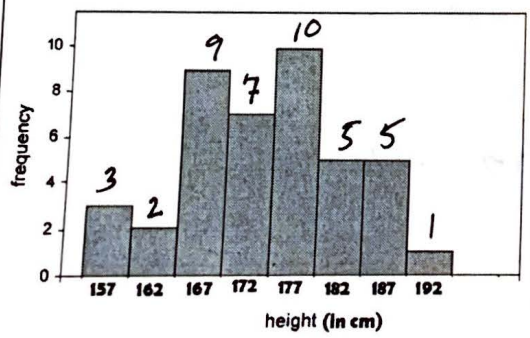
Median: $43+1 = 44/2 = 22$ (65)

Mode: 65

Range: $95-25 = 70$

What would change the most if a 15 year old went to the library? The range

4.



Mean: $\frac{3(157)+2(162)+9(167)+7(172)+10(177)+5(182)+5(187)+1(192)}{42} = \frac{7309}{42} = 174.024$

Median: $42 \div 2 = 21 + 0.5 = 21.5$ (177)

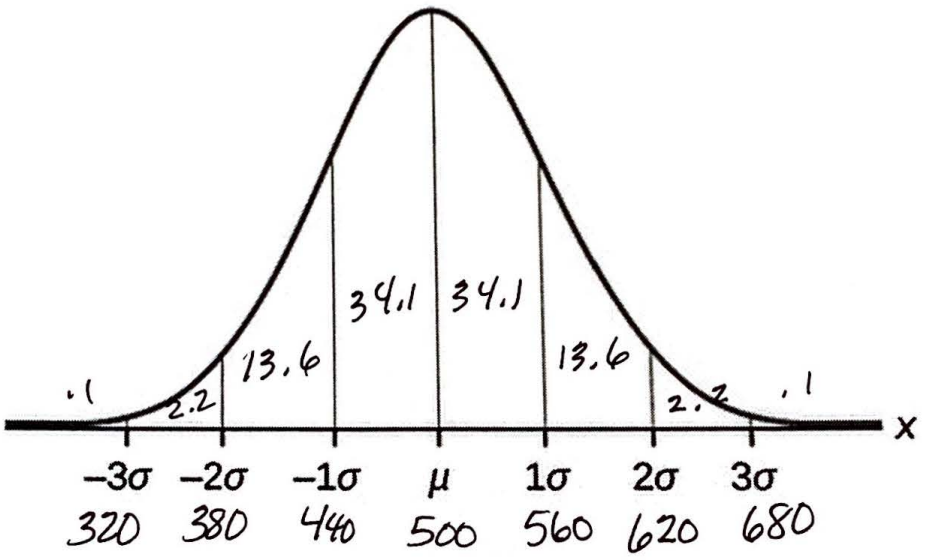
Mode: 177

Range: $192-157 = 35$

What would change the most if there was one person who was 195 cm tall? Range

Part 3 – Normal Distribution

The lifetimes of 10,000 watch batteries are normally distributed. The mean lifetime is 500 days. The standard deviation is 60 days. Sketch a normal curve that represents this distribution; label the mean and 3 standard deviations.



Estimate how many watch batteries will last for each of the following intervals.

A) 440 – 560 days

34.1 + 34.1 =
68.2%

0.682 × 10,000 =
6,820 batteries

B) 380 – 680 days

13.6 + 34.1 + 34.1 + 13.6 + 2.2
= 97.7%

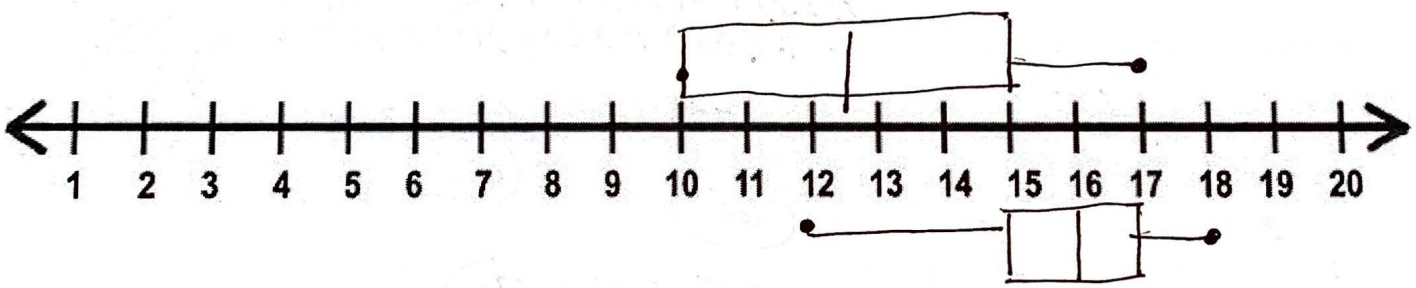
0.977 × 10,000 =
9,770 batteries

Part 2: Box & Whisker Plots

Create 2 box and whisker plots for the data sets below. Then, answer the questions that follow.

Olive Garden Dinner Prices: 10, 10, 15, 12, 17, 13

Roman Village Dinner Prices: 12, 15, 16, 17, 18, 16



- Which restaurant has the smallest median?

  Olive Garden ← 12.5, 16

- Which restaurant has the biggest range?

  Olive Garden ← 17 − 10 = 7, 18 − 12 = 6

- What percentage of Olive Garden's prices are at $12.50?

  50% below, 50% above; none at 12.50

- Which restaurant would you prefer to eat at? Why?

  Answers vary