

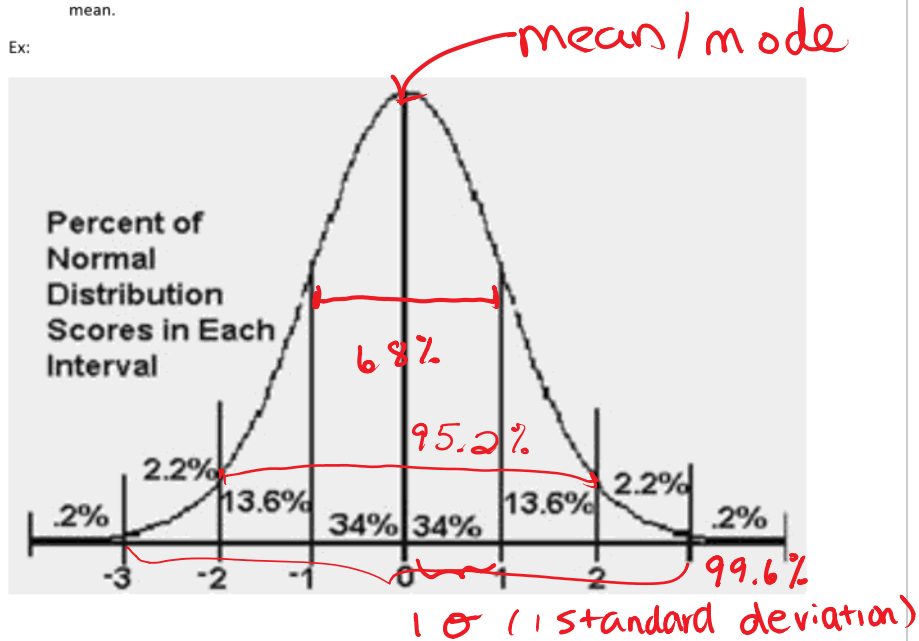
5.4 Notes

Thursday, May 28, 2015 9:56 AM

5.4 – The Normal Distribution

- Normal Curve
 - A symmetrical curve that represents the normal distribution
 - Also called the bell curve
- Normal distribution
 - Data that, when graphed as a histogram or frequency polygon, results in a unimodal symmetric distribution about the mean.
 - Unimodal
 - Data that has one mode
- When we use an entire population in statistics, we use the symbol μ ("mu") to represent the mean.

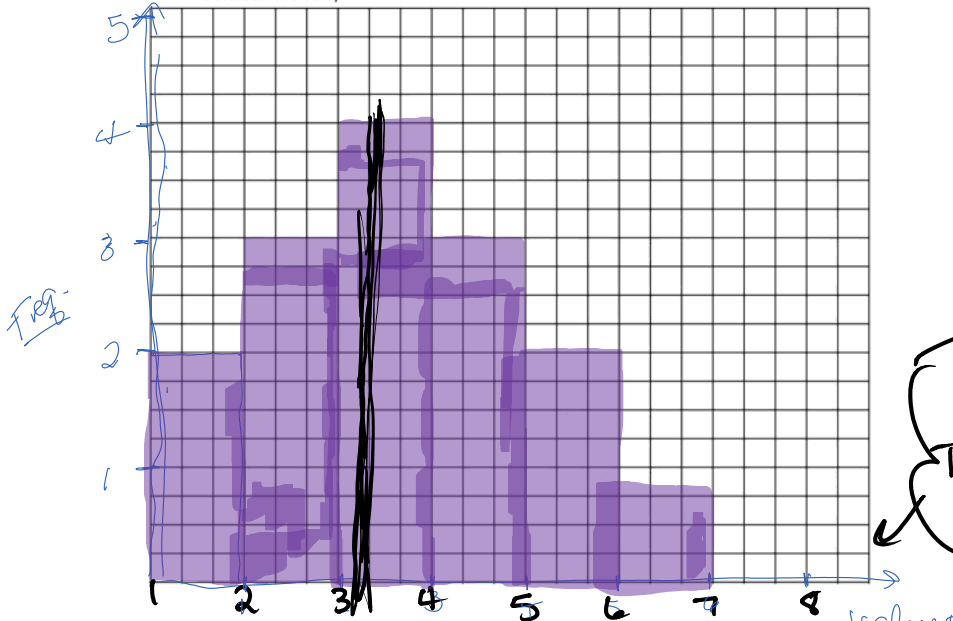
Ex:



5.4 Examples

1. For the following data set: 1, 1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 6

a) Plot the data as a frequency vs data set value histogram (a bar graph WITHOUT any spaces between the bars)



b) What is the mean of the data?

$$\bar{x} = \frac{1(2) + 2(3) + 3(4) + 4(3) + 5(2) + 6(1) + 7(1)}{15} = 3.2$$

c) Draw a straight line down the center of the bar which contains the mean on your histogram. What do you notice about the bars to the left and right of this line?

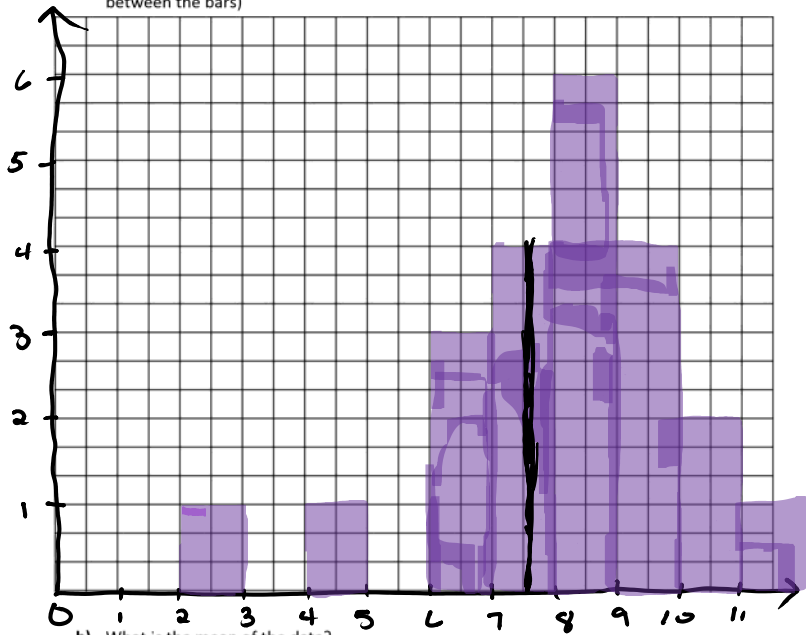
They are relatively symmetrical-ish.

Teachable moment

The bars just ~~are~~ out #'s right of the not the left

2. For the following data set: 2, 4, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 9, 10, 10, 11

a) Plot the data as a frequency vs data set value histogram (a bar graph WITHOUT any spaces between the bars)



b) What is the mean of the data?

$$\bar{x} = \frac{2(1) + 4(1) + 6(3) + 7(4) + 8(6) + 9(4) + 10(2) + 11(1)}{22}$$

$$\bar{x} \approx 7.6$$

c) Draw a straight line down the center of the bar which contains the mean on your histogram. What do you notice about the bars to the left and right of this line?

there is more data to the right
 \therefore more above average. ~~less below~~.
 Less below.

#	Freq.
2	1
4	1
6	3
7	4
8	6
9	4
10	2
11	1

\approx means approximately

~~7/20/2018~~

Date: _____

For the following data set: 39, 41, 41, 43, 45, 46, 47, 46, 48, 47, 44, 38, 41, 49, 43, 46, 44

- [illegible]

No