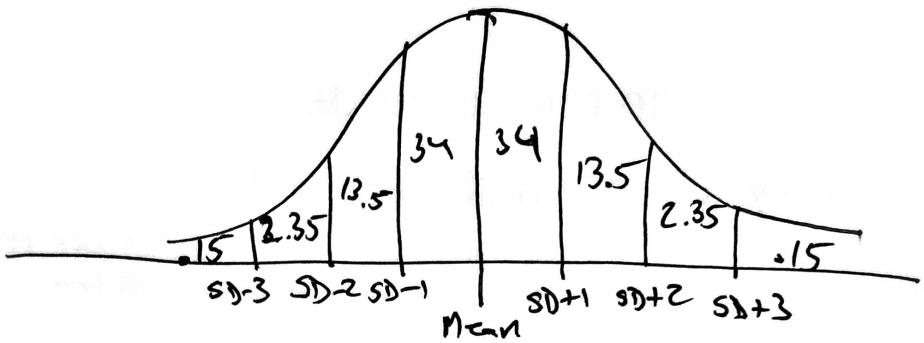
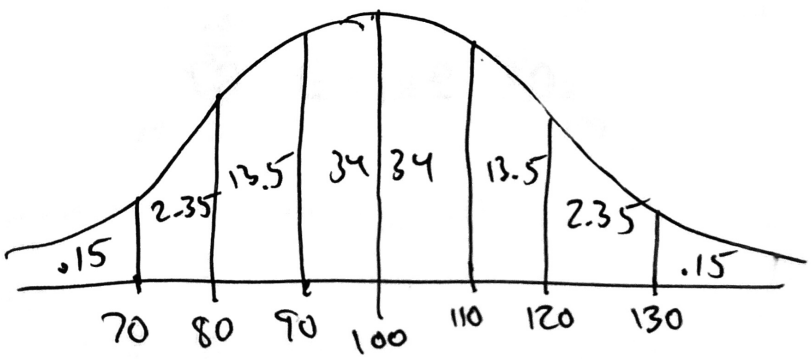
Normal Distribution

Empirical Rule



On a certain IQ test, the results are normally distributed with a mean of 100 and sd of 10.



What percentage of scores fell between

90-110 68 %

80-120 95%

70-130 99.7%

at least 110 16%

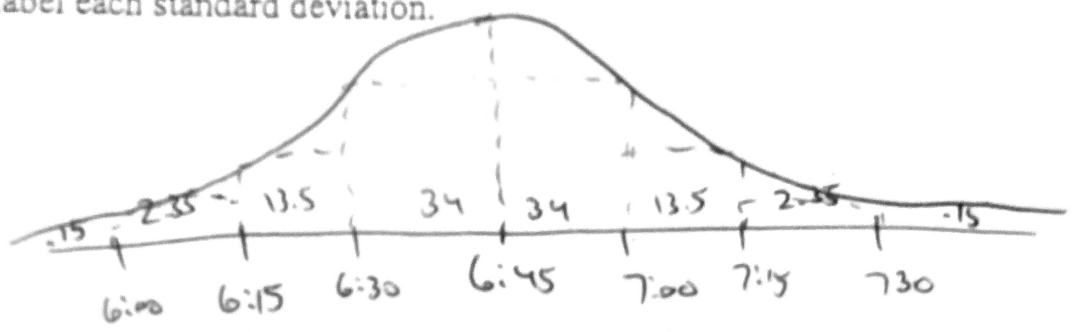
At most 100 50%

1. Using the data set {13, 16, 17, 18, 16, 12, 14, 12}, find the standard deviation. Round your answer to the nearest hundredth, if necessary.

SD = 2.17

For numbers 2 – 4, use the following information. *The times a group of high school students wake up on weekday mornings was found to be normally distributed. The mean wake-up time was 6:45 am and the times had a standard deviation of 15 minutes.*

2. Draw the normal curve to represent the distribution of wake-up times. Identify and label each standard deviation.



3. What percent of the students would you expect to wake up between 6:30 am and 7:00 am?

68%

4. If 400 students were surveyed, how many would you expect to wake up between 6:00 am and 7:00 am?

83.85%

400 · .8385 = 335.4 students

5. Use the data set:

{364, 305, 217, 331, 305, 311, 352, 319, 272, 238, 311, 226, 220, 226, 215, 160, 123, 4, 24, 238, 312}

a) Find the lower quartile, upper quartile, interquartile range. Identify any outliers.

1_q : 216 IQR : ~~96.5~~ 95.5 143.5 72.5, 455

3_q : 311.5 Outliers 4, 24,

b) Find the mean, mode, standard deviation (to the nearest hundredth).

mean: 241.57

mode: 226, 238, 305, 311

sd : 95.50