[EXAM II IN CLASS REVIEW]
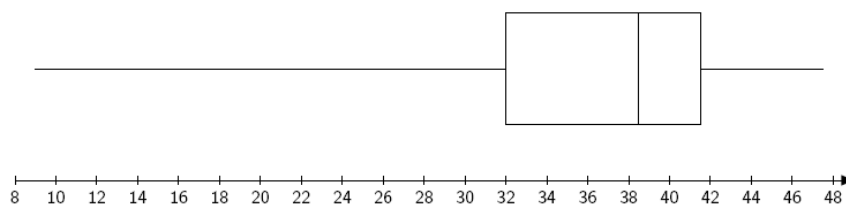
(practIce problems)

[1.] The Department of Energy provides fuel economy ratings for vehicles sold in the United States. The following are estimated highway MPG for 2014 small pick-up trucks.

19 21 21 21 21 21 21 22 22 22 23 23 24 25

    a. Make a stem and leaf plot of the data above
    b. Find the mean, median, and mode of the data
    c. If we find the MPG of another truck, what is the lowest MPG value we can record that would increase the mean of this data?

[2.] State the 5-number summary given the box and whisker plot below.

[3.] Suppose you want the public opinion of the city park, so you go to the park and randomly ask people what they think about it. How could this be biased data?

[4.] The volume of Gatorade in a 32 ounce bottle is normally distributed with a mean of 32 ounces and a standard deviation of .25 ounces.

    a. What range of volumes corresponds to the middle 95% of the data?
    b. Draw a standard curve out to 3 standard deviations
    c. How many standard deviations above the mean is a bottle with a volume of 33.4 ounces? (this question is asking the z-score of a bottle with 33.4 ounces of Gatorade)

[5.] Between September 17th and September 26th a survey was done in which 5099 Americans were asked if they had insurance. Suppose 86% of them claimed to have insurance. Construct a 95% confidence interval for the percentage of Americans who are insured.

[6.] Create a data set for which the mean is greater than the median.

[7.] You roll a die 6,000 times. Out of those 6,000 rolls you roll a 2 4,000 times. Construct a 95% confidence interval to determine the proportion of times you'll roll a 2 with this die. Do you think that this die is fair?

[8.] The following stem and leaf plot shows the number of pages in each chapter of a book.

Stem	Leaf
Tens Place	Ones Place
0	3
1	9
2	1 3
3	1 2 7
4	1 1 3 4 4 5 6 7 7 7 9
5	1 3 6 7 9

    a. How many chapters are there in this book?
    b. What is the mode of this data?
    c. What is the median chapter length?
    d. Draw a histogram with a bin width of 5.
    e. Does this data appear to be normal, uniform, skewed left, or skewed right?

[9.] Scores of high school seniors on the SAT follow the normal distribution with a mean of 1026 and a standard deviation of 209. What proportion of seniors score at most 817? What percentage of seniors score at most 817?

[10.] Below is the list of points in each 2014 post season game scored by Damian Lillard.

21 19 17 25 26 23 30 18 31

    a. Describe the data using a 5-number summary.
    b. Draw the box and whisker plot using part a.