AP Statistics Name_____
Unit 01 – Univariate Data
Homework #3

Page 69 #79, 81, 83, 84, 86, 87, 89, 91, 98, 107, 110, 112

79. $\bar{x}$ = 85

81.
   a. median = 85
   b. $\bar{x}$ = 79.33 and median = 84. The median did not change much but the mean did, showing that the median is more resistant to outliers than the mean.

83. The mean is $60,954 and the median is $48,097. The distribution of salaries is likely to be quite right skewed because of a few people who have a very large income, making the mean larger than the median.

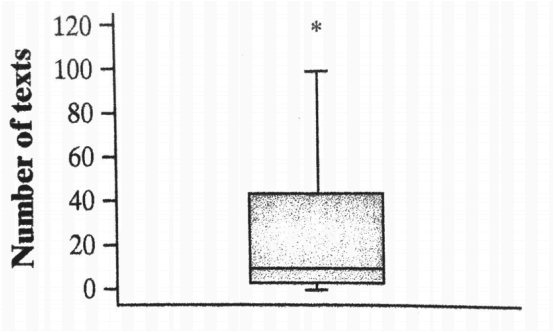
84. The mean house price is $263,200 and the median is $224,200. The distribution of house prices is likely to be quite skewed to the right because of a few very expensive homes, making the mean larger than the median.

86. The mean salary is $60,000. Seven of the eight employees earned less than the mean. The median is $22,000. An unethical recruiter would report the mean salary as the "typical" salary because it is much larger than the median salary.

87.
   a. Estimating the frequencies of the bars (from left to right) as 10, 40, 42, 58, 105, 60, 58, 38, 27, 18, 20, 10, 5, 5, 1, and 3, the mean is $\bar{x}$ = 3504/500 = 7.01. The median is the average of the 250th and 251st values, which is 6.
   b. Because the median is less than the mean, we would use the median to argue that shorter domain names are more popular.

89.
   a. IQR = 91 – 78 = 13. The middle 50% percent of the data have a range of 13 points.
   b. Any outliers are below 78 – 1.5(13) = 58.5 or above 91 + 1.5(13) = 110.5. There are no outliers.

91.
   a. Outliers are anything below 3 – 1.5(40) = -57 or above 43 + 1.5(40) = 103, so 118 is an outlier. The boxplot is shown below:



   b. The article claims that teens send 1742 texts a month, which is about 58 texts a day. Nearly all of the members of the class (21 of 25) sent fewer than 58 texts per day, which seems to contradict the claim in the article.

98.

a. s_x = 1.15 hours
b. The hours of sleep typically varies from the mean by about 1.15 hours.
c. No. The first 4 students to arrive in the classroom are not likely to be representative of the entire class in terms of the amount of sleep they got last night.

107. D

110. A

112.

a. Yes, because the categories form parts of a whole.
b. The graph should not be described as skewed to the right because this is not a distribution of quantitative data. The categories could be graphed in any order.