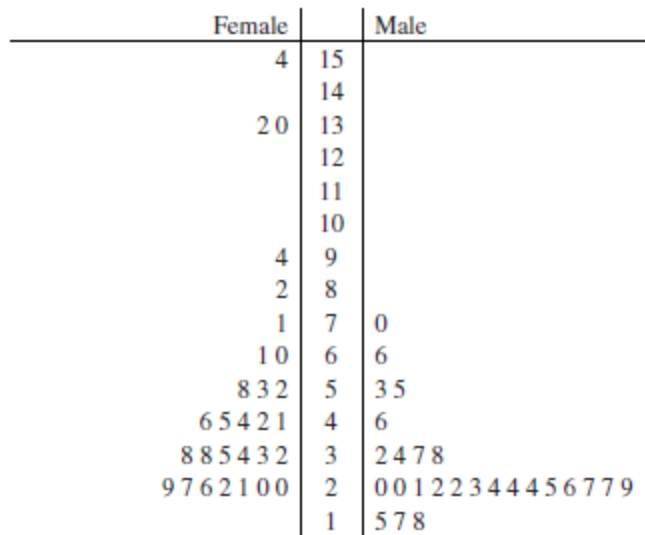


5. In one region of the country, the mean length of stay in hospitals is 5.5 days with standard deviation 2.6 days. Because many patients stay in the hospital for considerably more days, the distribution of length of stay is strongly skewed to the right. Consider random samples of size 100 taken from the distribution with the mean length of stay, \bar{x} , recorded for each sample. Which of the following is the best description of the sampling distribution of \bar{x} ?
- (A) Strongly skewed to the right with mean 5.5 days and standard deviation 2.6 days
 (B) Strongly skewed to the right with mean 5.5 days and standard deviation 0.26 day
 (C) Strongly skewed to the right with mean 5.5 days and standard deviation 0.026 day
 (D) Approximately normal with mean 5.5 days and standard deviation 2.6 days
 (E) Approximately normal with mean 5.5 days and standard deviation 0.26 day
13. In northwest Pennsylvania, a zoologist recorded the ages, in months, of 55 bears and whether each bear was male or female. The data are shown in the back-to-back stemplot below.

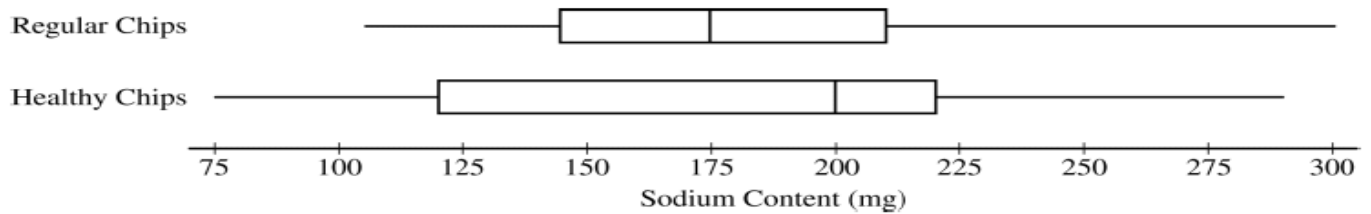


7|0 represents 70 months

Based on the stemplot, which of the following statements is true?

- (A) The median age and the range of ages are both greater for female bears than for male bears.
 (B) The median age and the range of ages are both less for female bears than for male bears.
 (C) The median age is the same for female bears and male bears, and the range of ages is the same for female bears and male bears.
 (D) The median age is less for female bears than for male bears, and the range of ages is greater for female bears than for male bears.
 (E) The median age is greater for female bears than for male bears, and the range of ages is less for female bears than for male bears.

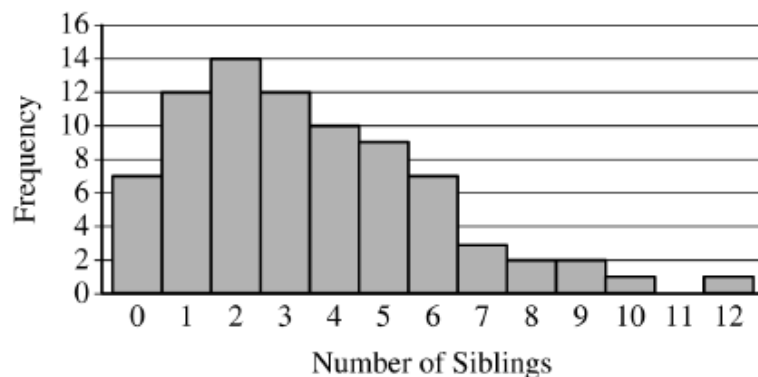
19. Nutritionists examined the sodium content of different brands of potato chips. Each brand was classified as either healthy or regular based on how the chips were marketed to the public. The sodium contents, in milligrams (mg) per serving, of the chips are summarized in the boxplots below.



Based on the boxplots, which statement gives a correct comparison between the two classifications of the sodium content of the chips?

- (A) The number of brands classified as healthy is greater than the number of brands classified as regular.
- (B) The interquartile range (IQR) of the brands classified as healthy is greater than the IQR of the brands classified as regular.
- (C) The range of the brands classified as healthy is less than the range of the brands classified as regular.
- (D) The median of the brands classified as healthy is more than twice the median of the brands classified as regular.
- (E) The brand with the least sodium content and the brand with the greatest sodium content are both classified as healthy.
36. The number of siblings was recorded for each student of a group of 80 students. Some summary statistics and a histogram displaying the results are shown below.

Mean	Standard Deviation	Q1	Q3
3.5	2.535	2	5



An outlier is often defined as a number that is more than 1.5 times the interquartile range below the first quartile or above the third quartile. Using the definition of an outlier and the given information, which of the following can be concluded?

- (A) The median is greater than the mean, and the distribution has no outliers.
- (B) The median is greater than the mean, and the distribution has only one outlier.
- (C) The median is greater than the mean, and the distribution has two outliers.
- (D) The median is less than the mean, and the distribution has only one outlier.
- (E) The median is less than the mean, and the distribution has two outliers.

39. A simulation was conducted using 10 fair six-sided dice, where the faces were numbered 1 through 6, respectively. All 10 dice were rolled, and the average of the 10 numbers appearing faceup was recorded. The process was repeated 20 times. Which of the following best describes the distribution being simulated?
- (A) A sampling distribution of a sample mean with $n = 10$, $\mu_{\bar{x}} = 3.5$, and $\sigma_{\bar{x}} \approx 0.54$
- (B) A sampling distribution of a sample mean with $n = 10$, $\mu_{\bar{x}} = 3.5$, and $\sigma_{\bar{x}} \approx 1.71$
- (C) A sampling distribution of a sample mean with $n = 20$, $\mu_{\bar{x}} = 3.5$, and $\sigma_{\bar{x}} \approx 0.38$
- (D) A sampling distribution of a sample proportion with $n = 10$, $\mu_{\hat{p}} = \frac{1}{6}$, and $\sigma_{\hat{p}} \approx 0.118$
- (E) A sampling distribution of a sample proportion with $n = 20$, $\mu_{\hat{p}} = \frac{1}{6}$, and $\sigma_{\hat{p}} \approx 0.083$

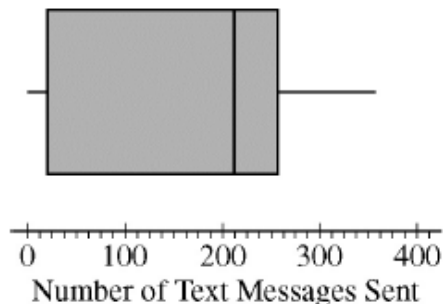
6. The prices, in thousands of dollars, of the 35 used cars at a certain car dealership are shown in the table below.

Price (in thousands)	\$7	\$8	\$9	\$10	\$11	\$12	\$13	\$14	\$15	\$16
Frequency	4	6	7	6	4	2	2	2	1	1

Which of the following best describes the shape of the distribution of used car prices at the dealership?

- (A) Skewed to the left (negatively skewed)
- (B) Skewed to the right (positively skewed)
- (C) Bimodal
- (D) Uniform
- (E) Approximately normal

7. Data were collected on the number of text messages sent by each student in a large high school for one day. A boxplot of the data is shown below.



Based on the boxplot, which of the following statements is the most reasonable conclusion?

- (A) There are more students with data values below the median than there are students with data values above the median.
 - (B) There are more students with data values between the first quartile and the median than there are students with data values between the median and the third quartile.
 - (C) There are fewer students with data values between the first quartile and the median than there are students with data values between the median and the third quartile.
 - (D) There are approximately the same number of students with data values between the first quartile and the minimum as there are students with data values between the third quartile and the maximum.
 - (E) The data are less spread out between the first quartile and the median than between the median and the third quartile.
12. Athletes in a particular sport are classified as either offense or defense. The distribution of weights for the athletes classified as offense is approximately normal, centered at 200 pounds, and ranges from 150 pounds to 250 pounds. The distribution of weights for the athletes classified as defense is approximately normal, centered at 300 pounds, and ranges from 250 pounds to 350 pounds. There are 1,000 athletes in each classification. Which of the following is the best description of a histogram of the weights of all 2,000 athletes?
- (A) Skewed to the right (positively skewed)
 - (B) Skewed to the left (negatively skewed)
 - (C) Approximately uniform and centered at 250 pounds
 - (D) Approximately normal and centered at 250 pounds
 - (E) Bimodal