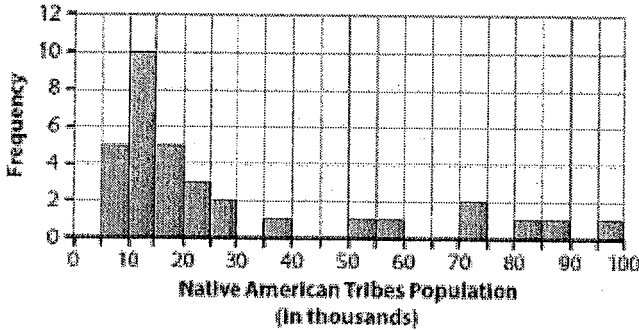


1. The histogram below shows the populations of Native American tribes with populations less than 100,000 in the year 2000.



a. How many tribes are represented in the histogram?

$$5 + 10 + 5 + 3 + 2 + 1 + 1 + 1 + 2 + 1 + 1 + 1 = 33$$

33 tribes

b. Estimate the mean and median populations of these tribes.

mean = 25000 up to 30000

median = 15000 up to 20000

c. Describe the distribution of the populations of these tribes.

① skewed right AND cluster 5000 up to 30000

OR

outliers 70000 up to 75000

80000 up to 90000

95000 up to 100000

OR

gaps 30000 up to 35000

40000 up to 50000

60000 up to 70000

75000 up to 80000

90000 up to 95000

② center = median = 15000 up to 20000 (median must be used w/ skewed)

③ spread = range \Rightarrow 100000 - 5000
 95000

- d. Which measure of center is most appropriate to describe a typical value in this distribution?
Explain.

median because this histogram is skewed right and the median is more resistant to outliers

- e. Which measure of spread is most appropriate to describe the variability in this distribution?
Explain.

IQR because it is resistant to outliers

2. The Federal Highway Administration supplied the following information about the number of registered autos, buses, and trucks in the 25 states listed below.

State	Number of Registered Autos, Buses, and Trucks (in millions)	State	Number of Registered Autos, Buses, and Trucks (in millions)
Vermont	0.5	Oregon	3.0
Wyoming	0.6	South Carolina	3.2
North Dakota	0.7	Wisconsin	4.6
Rhode Island	0.8	Tennessee	4.8
South Dakota	0.8	Washington	5.3
Montana	1.0	North Carolina	6.1
New Hampshire	1.3	Virginia	6.3
New Mexico	1.5	New Jersey	6.7
West Virginia	1.5	Pennsylvania	9.5
Nebraska	1.7	Ohio	10.5
Nevada	1.7	New York	10.5
Utah	1.9	Texas	14.7
Oklahoma	3.0		

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States: 2004-2005* (124th edition). Washington, DC, 2004.

- a. Compute the five number summary for this set of data.

minimum: .5 lower quartile: 1.15 median: 3

upper quartile: 6.2 maximum: 14.7

- b. What is the interquartile range for this set of data? Write a sentence that describes what the interquartile range tells you about the number of registered autos, buses, and trucks in these states.

$$IQR = 6.2 - 1.15 = 5.05 \text{ million}$$

The middle 50% of registered autos, buses, and trucks ranges 5.05 million.

- c. Do they seem to be outliers in this set of data? Explain.

Yes, Texas is a bigger jump in data than the rest of the gaps.

- d. Compute the standard deviation for this set of data. Write a sentence that describes what the standard deviation tells you about the number of registered autos, buses, and trucks in these states.

$$S_x = 3.8 \text{ million}$$

The average number of registered autos, buses, and trucks is 4.088^{million} with a typical distance from the mean of 3.8 million.

- e. What is the percentile ranking for West Virginia? Show your work.

$$\frac{9}{25} = .36$$

36th percentile

3. Which histogram depicts data that is least likely to be approximated by a normal distribution?

