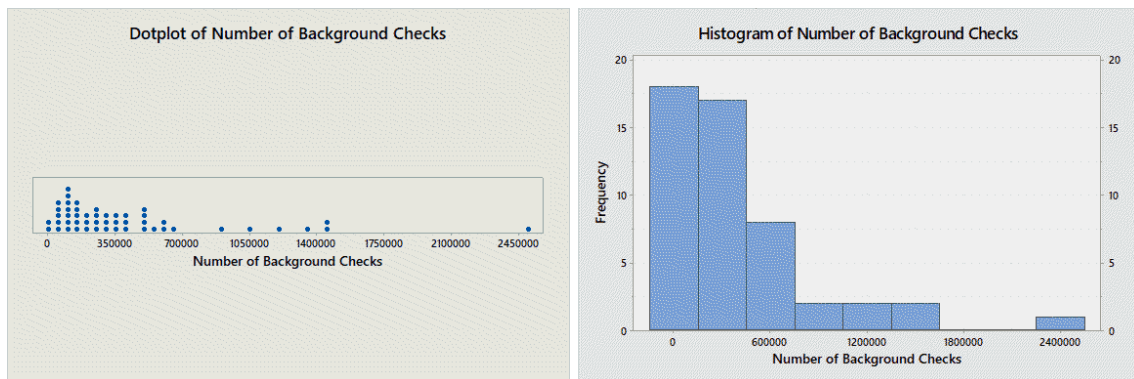


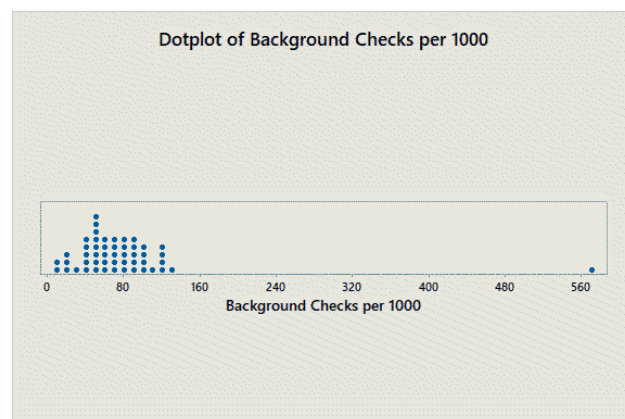
§2.3 (Part 2): Comparative Displays, Outliers, & Skewness

1.] The Bloomberg Visual Data web site includes data on the total number of federal firearm background checks performed in 2014 and also the number of background checks per 1000 residents in 2014 for each of the 50 U.S. states. (Data set on page 83 of the text.)

- a.) Below is a histogram and a dotplot of the data. Which is the better display? Are there any outliers? Why might the extreme data points be misrepresented?



- b.) Below is a dotplot of background checks per 1000 residents of that state. Why is this a better representation of the data? Describe the data set.

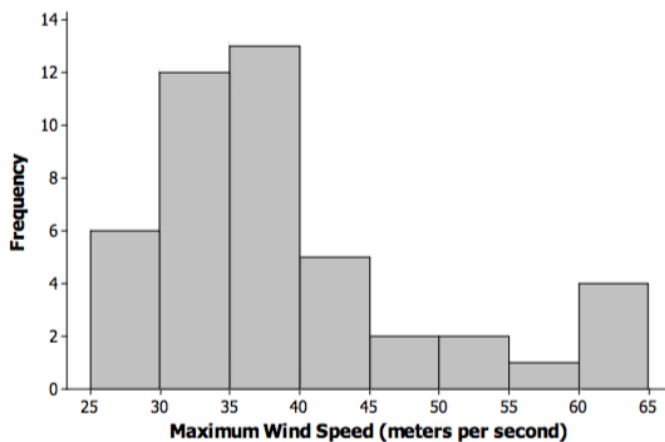


- 2.] A report from traffic safety facts form the National Highway Traffic Safety Administration gave data on traffic fatality rates per 100,000 people in 2014. A comparative stem-and-leaf display below shows the number of fatalities for states that enforce seat belt laws and for states that do not enforce seat belt laws.

<u>With Seat Belt</u> <u>Law Enforcement</u>		<u>Without Seat Belt</u> <u>Law Enforcement</u>
43	0	
9988877766	0	599999
444333221000	1	0013334
87766555	1	57
30	2	2
	2	5

Legend: 1|3 = 13 traffic deaths per 100,000 population

- (a) How many states do not enforce seat belt laws?
- (b) Comment on the shape and center of each distribution.
- 3.] The data on annual maximum wind speed (in meters per second) in Hong Kong for each year in a 45-year period are from an article that appeared in the journal *Renewable Energy* in March 2007. (Data on page 84 of the text.)



Is the histogram skewed in any way? Would you classify this histogram as unimodal, bimodal, or multimodal?