

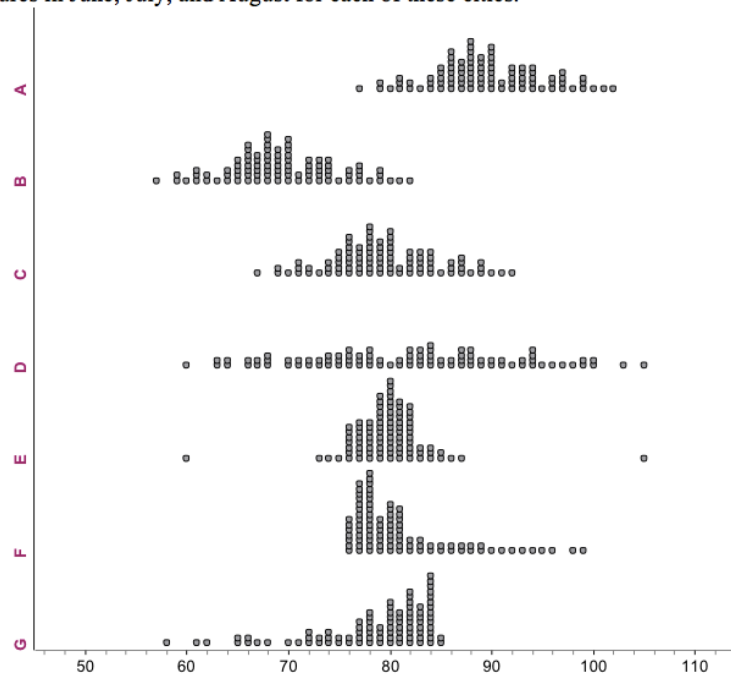
Good Morning

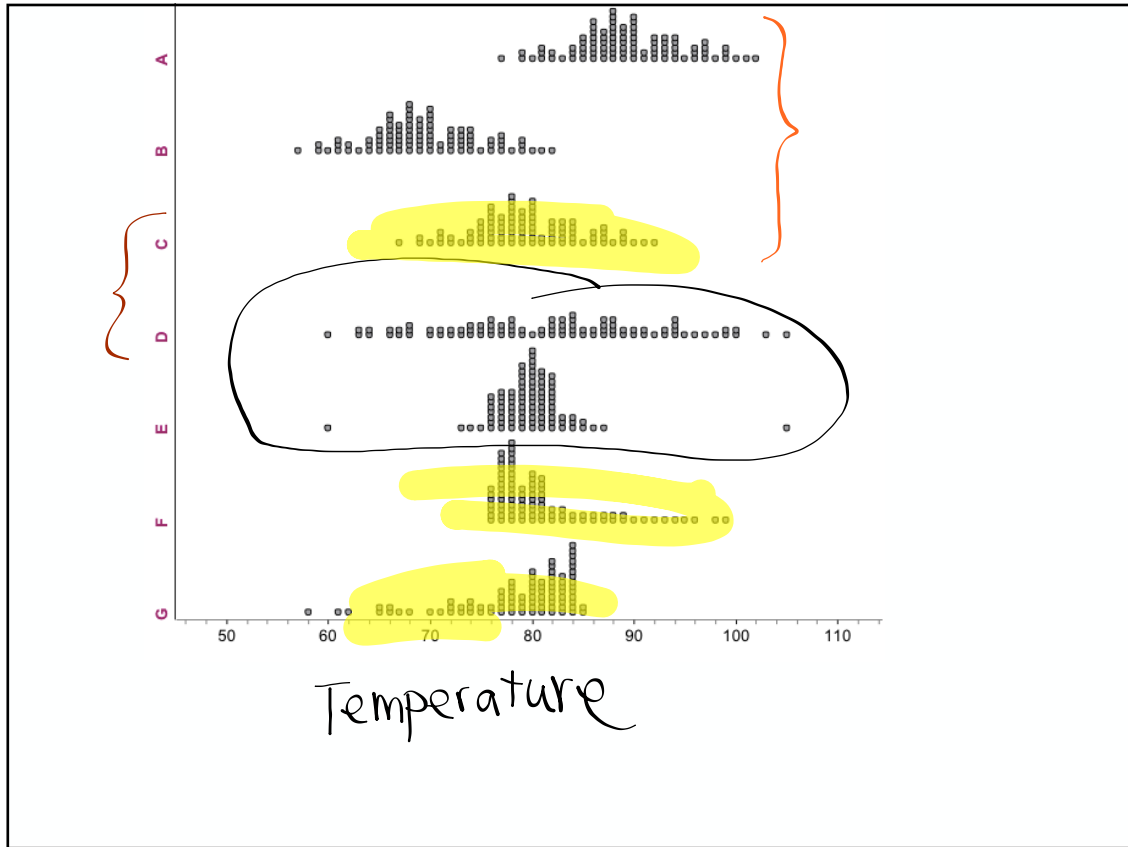
Pick Up The Warm Up

Were you able to access  
the e-book ?

### Describing distributions of quantitative data

Brian and Jessica have decided to move and are considering seven different cities. The dotplots below show the daily high temperatures in June, July, and August for each of these cities.





1. What is the most important difference between cities A, B, and C?

Center!

2. What is the most important difference between cities C and D?

Variability

3. What is the most important difference between cities D and E?

Variability  
(but not range)

4. What is the most important difference between cities C, F, and G?

Shape!

Shape

Outliers + Context  
+ -ly words

Center

Variability

Shape

Outliers + Context  
+ -ly words

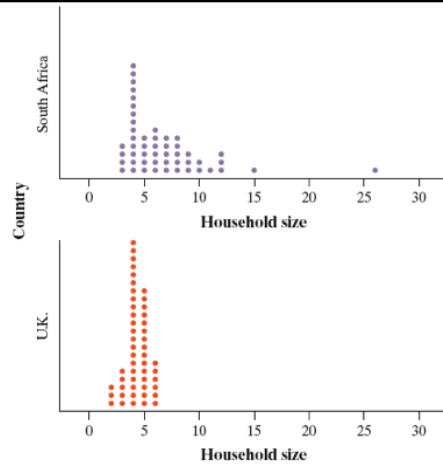
Center

Variability

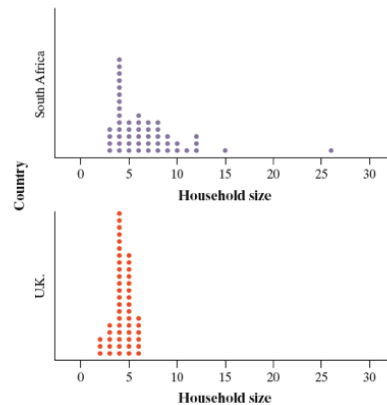
Use "Comparing" Words  
when comparing two  
distributions



We used Census At School's "Random Data Selector" to choose 50 students from each country. Here are dotplots of the household sizes reported by the survey respondents. Compare the distributions of household size for these two countries.



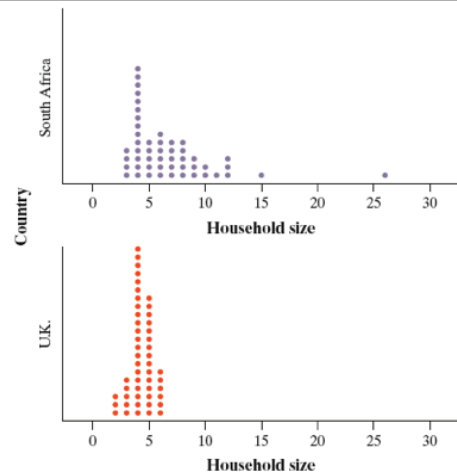
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AP® Exam Tip

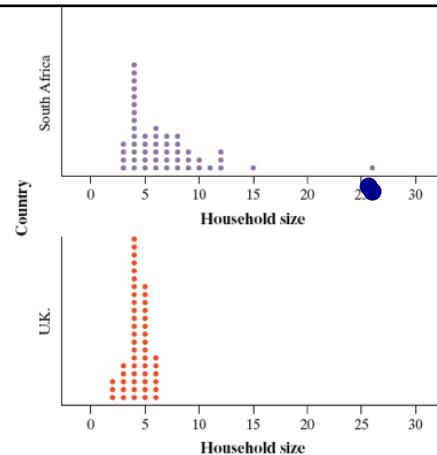
When comparing distributions of quantitative data, it's not enough just to list values for the center and variability of each distribution. You must explicitly compare these values, using words like "greater than," "less than," or "about the same as."

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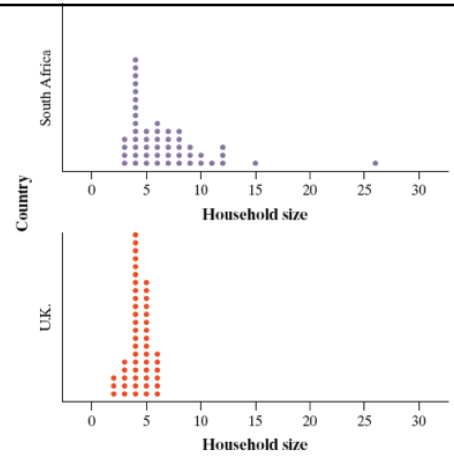
**Outliers:** There don't appear to be any outliers in the U.K. distribution. The South African distribution seems to have two outliers: the households with 15 and 26 people.



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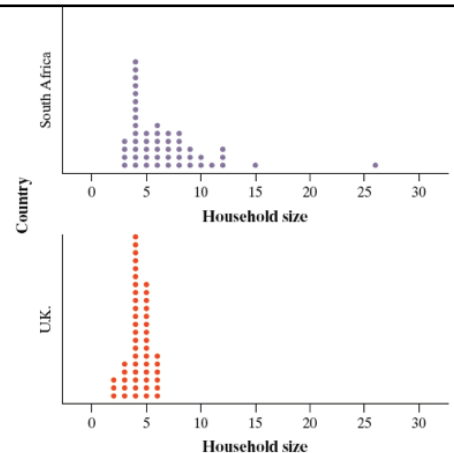
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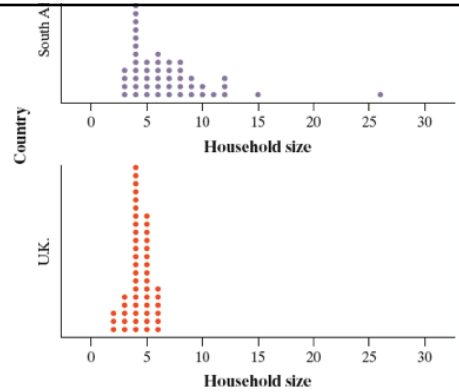


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**Variability:** The household sizes for the South African students vary more (from 3 to 26 people) than for the U.K. students (from 2 to 6 people).

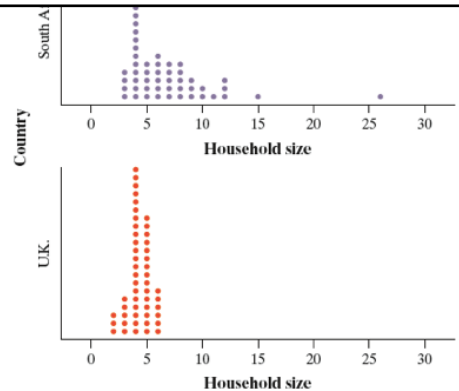


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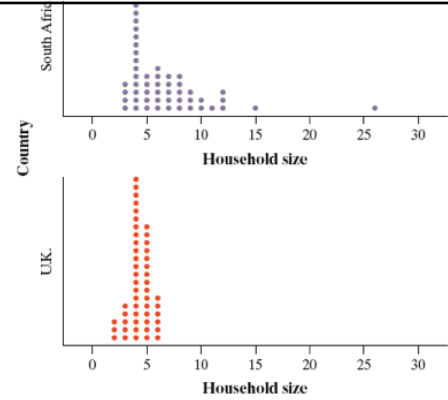


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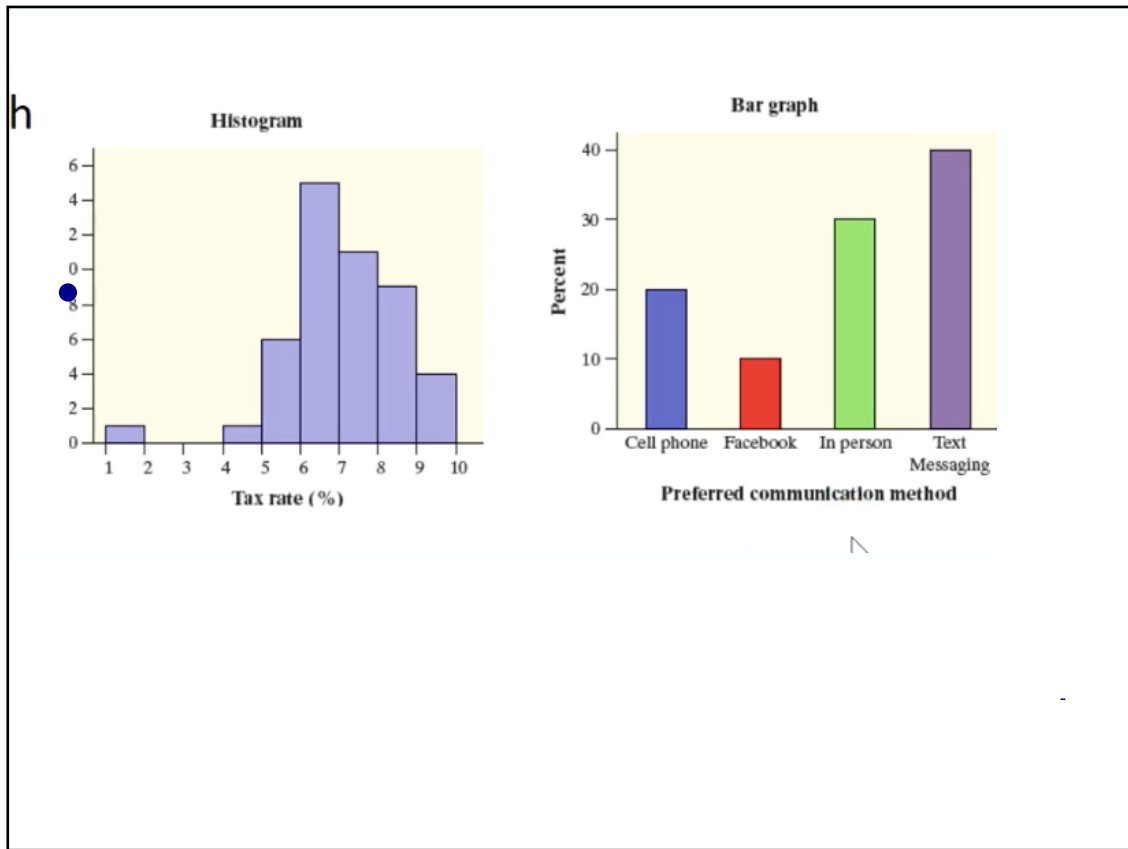


- ✓ Context
- ✓ Comparative language

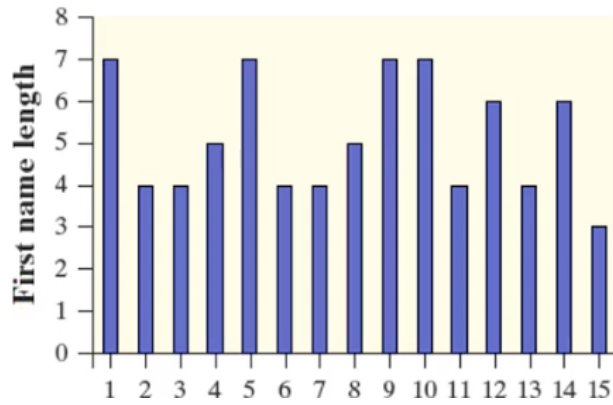
## Using Histograms Wisely

(pages 45-46)



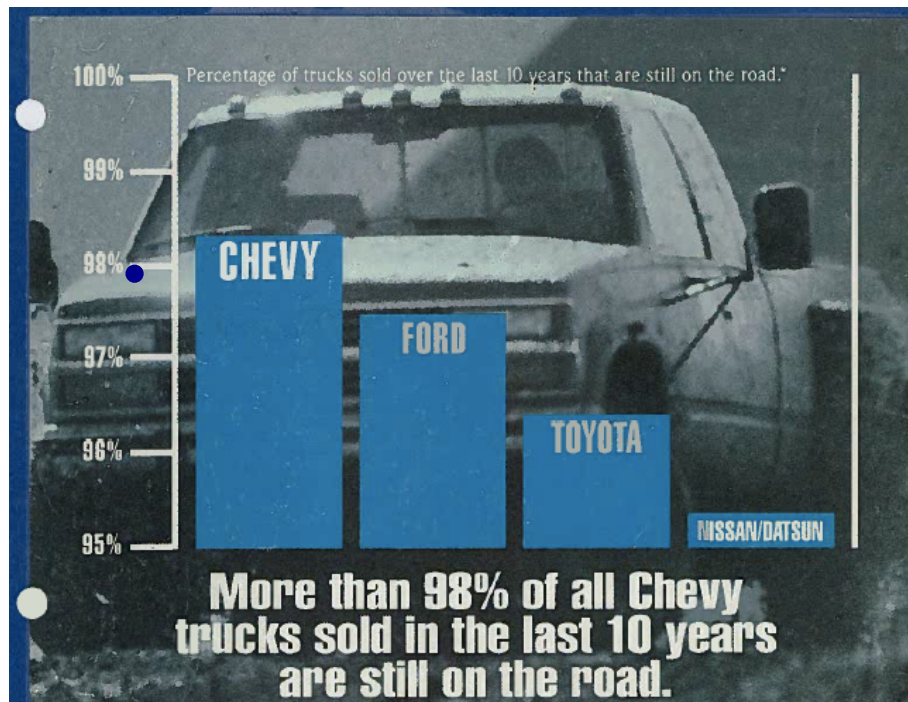


- Use percents not counts when comparing distributions with different numbers of data values.



too many  
bars on  
a  
histogram

is meaningless



Aim Today:

Make Effective Histograms with  
Graphing Calculators

LCQ later in class

Enter the total number of medals 28  
countries won during the 2016 Summer  
Olympic Games in Rio de Janeiro.

Make a histogram

Country	Medals		
United States	121	Azerbaijan	18
China	70	Kazakhstan	17
Great Britain	67	Hungary	15
Russia	56	Denmark	15
Germany	42	Kenya	13
France	42	Uzbekistan	13
Japan	41	Jamaica	11
Australia	29	Cuba	11
Italy	28	Sweden	11
Canada	22	Ukraine	11
South Korea	21	Poland	11
Netherlands	19	Croatia	10
Brazil	19	South Africa	10
Spain	18		
New Zealand	18		

# LCA

Learning check QUIZ

→ ~~online portion [do before 8:30 AM tomorrow]~~  
 → in-class portion, now  
 - use your GDC

Assignment      **1.2**....55, 65, 69,  
77, 80-85  
and study pp. 34-46

WLCQ  
(Web LCQ)

## LEARNING TARGETS

*After this section, you should be able to:*

- ✓ MAKE and INTERPRET dotplots, stemplots, and histograms of quantitative data.
- ✓ IDENTIFY the shape of a distribution from a graph.
- ✓ DESCRIBE the overall pattern (shape, center, and variability) of a distribution and IDENTIFY any major departures from the pattern (outliers).
- ✓ COMPARE distributions of quantitative data using dotplots, stemplots, and histograms.

