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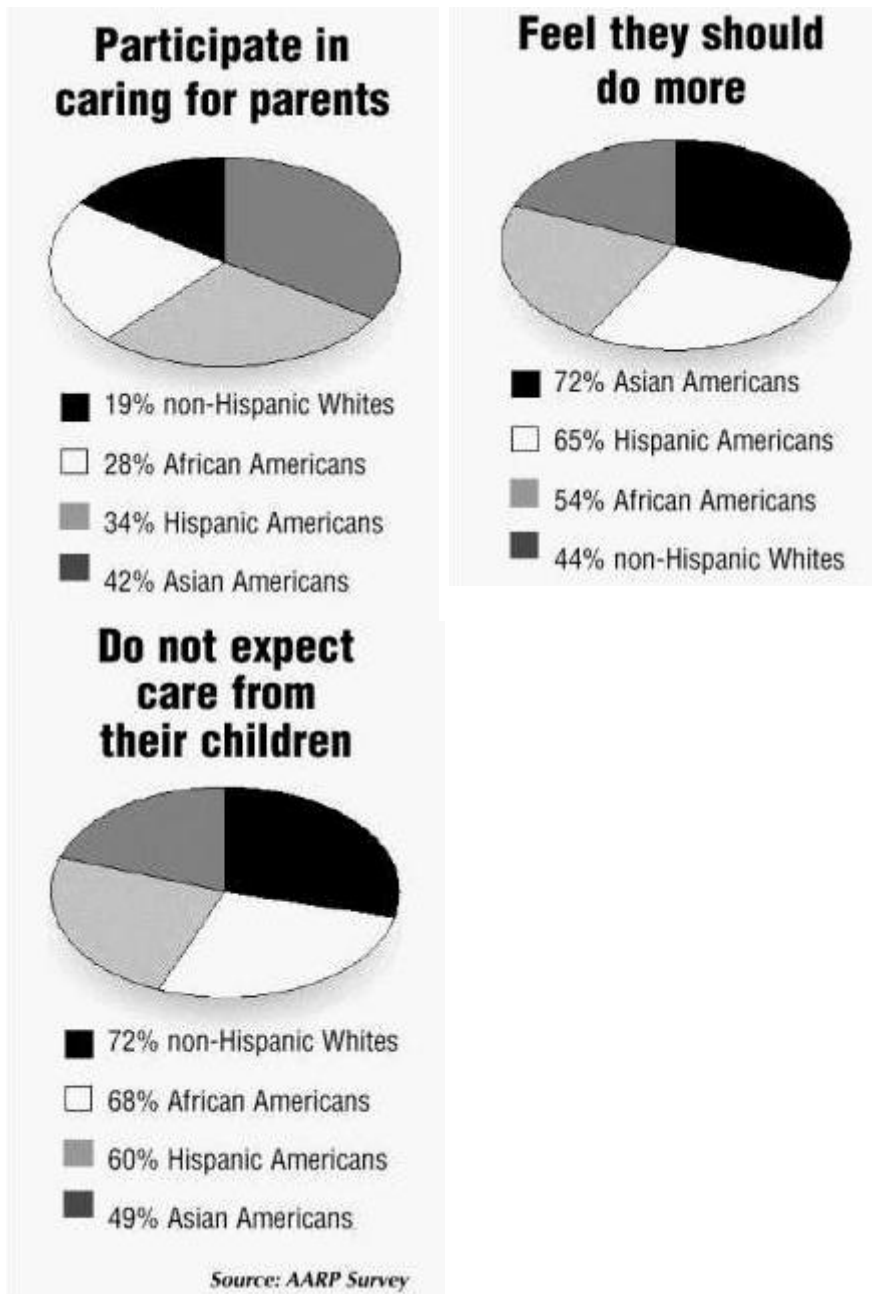


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Statistics for laboratory scientists

Homework problems for lecture 2

1. Consider the following figures (taken from *The Milwaukee Journal Sentinel*, Friday, 18 Jan 2002, Senior Focus, pg 2).



- a. Name three things wrong with these figures.

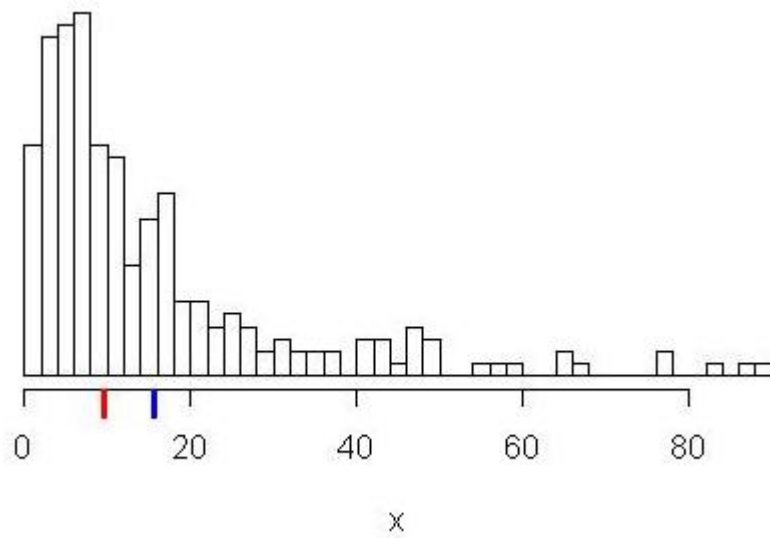
b. Sketch an improved version of these figures.

2. Consider the following data.

12.5	10.0	9.2	10.0	9.1
11.0	10.7	9.2	10.1	9.1

- a. Calculate (using a hand calculator) the arithmetic mean, median, and SD of the above set of numbers.
 - b. How would the mean, median, and SD change if you added 2 to each data point?
 - c. How would the mean, median, and SD change if you multiplied each data point by 10?
 - d. How would the mean, median, and SD change if you multiplied each data point by -10?
 - e. How would the mean, median, and SD change if you added 2 to each data point and then multiplied each by 10?
 - f. How would the mean, median, and SD change if you multiplied each data point by 10 and then added 2 to each?
3. In the following histogram, which of the red and blue line segments is the median and which is the mean?

Also, would you guess the standard deviation (SD) of these data to be 5, 15, or 25?



4. Guess the SD of the data in the following dotplot.

