

Measures of central tendency and data distribution: Mean, Median, Mode, and Range

Mean: The arithmetic mean (or simply the mean) of a list of numbers is the sum of all of the list divided by the number of items in the list.

Median: The *median* of a list of numbers can be found by arranging the data from lowest value to highest value and picking the middle one.

Mode: In statistics, the mode is the value that occurs the most frequently in a data set or a probability distribution. There can be more than one mode. If two numbers occur more than all the others but with the same frequency, then the set of numbers is called bi-modal.

Range: is the interval over which the set of numbers is spread. It is calculated by subtracting the smallest number in the set from the largest.

Problems:

- 1) The reported annual incomes for families living on one Boston block were: \$26,000; \$35,000; \$26,000; \$45,000; \$90,000; And \$42,000. Calculate the mean, median and range of family incomes for the block. Is there a mode? If what is it?
- 2) A new family built a MacMansion on this block. Their annual income was \$1,024,000. How did this new family effect the mean and median income for the entire block?
- 3) What is the best measure of «average» annual income for the block since the new family moved in?