Technology Integrated Mathematics
Class Notes
Statistics: Measures of Central Tendency (Section 12.2)

We seek a single number that summarizes a set of data. The numbers we look at here will show where the "center" of a data set is. Two of these numbers, **mean** and **median**, really do this. The **mode** does *not* show us the center of data, but rather is the data value that occurs the most.
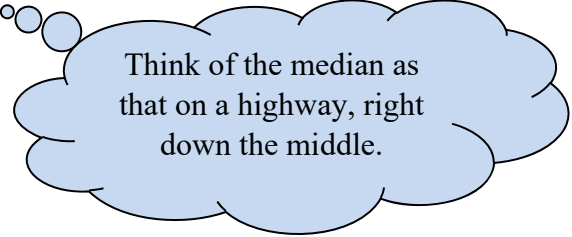
Definition: The **arithmetic mean** of a variable is computed by adding all of the values in the data set and dividing by how many values you had.

expl 1: The following data represent the times for an oil change (in minutes) during a Saturday morning at a certain oil change shop. Find the mean, rounding to the nearest tenth. Include units.
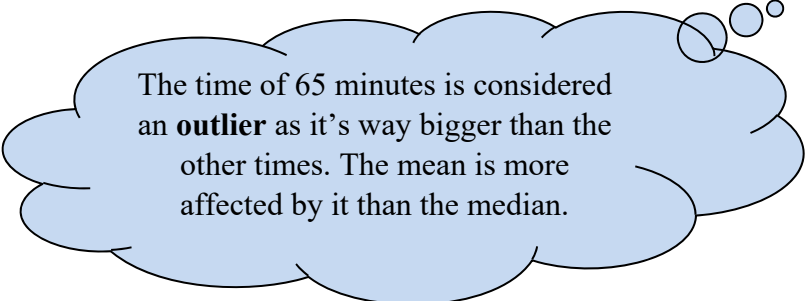
  23, 36, 23, 18, 15, 26, 65

Definition: The **median** of a variable is the value that lies in the middle of the data when arranged in increasing order. We use M to represent the median.

expl 2: Line up the data values from example 1 in increasing order and find the middle value (median). Include units.
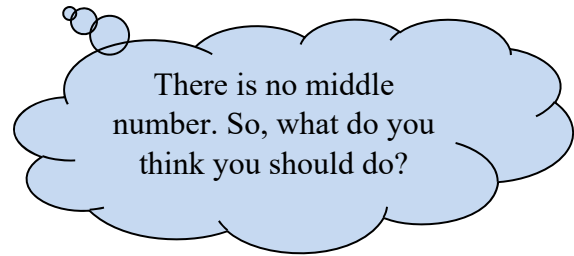
expl 3: Let's change this example up a bit. What if an eighth oil change time is added? Find the median now.

23, 36, 23, 18, 15, 26, 65, 27

There is no middle number. So, what do you think you should do?

Definition: The **mode** of a variable is the most frequent observation that occurs in the data set.

A set of data can have no mode, one mode, two modes (**bimodal**) or more than two modes (**multimodal**). *If no observation occurs more than once*, we say the data have **no mode**.

expl 4: Find the mode of these oil change times. Include units.

23, 36, 23, 18, 15, 26, 65, 27