Getting a feel for means and medians as ways to describe "typical" values

1. Use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

    a. Pick five digits that have a median of 6 and a mean of 6 (repeats allowed).

    b. Pick five digits that have a median of 6 and a mean that is less than 6 (repeats allowed.) Give the mean and median of your 5 digits. See if you can find a different set of 5 digits that work.

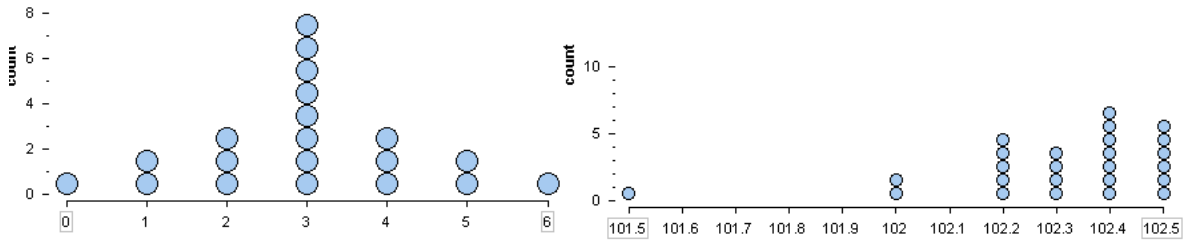
    c. Find a set of 5 digits with a median of 6 and a mean that is more than 6 (repeats allowed.) See if you can find a different set of 5 digits that work.

2. Imagine that you have a bag filled with 8 numbers with a mean and a median equal to 5.

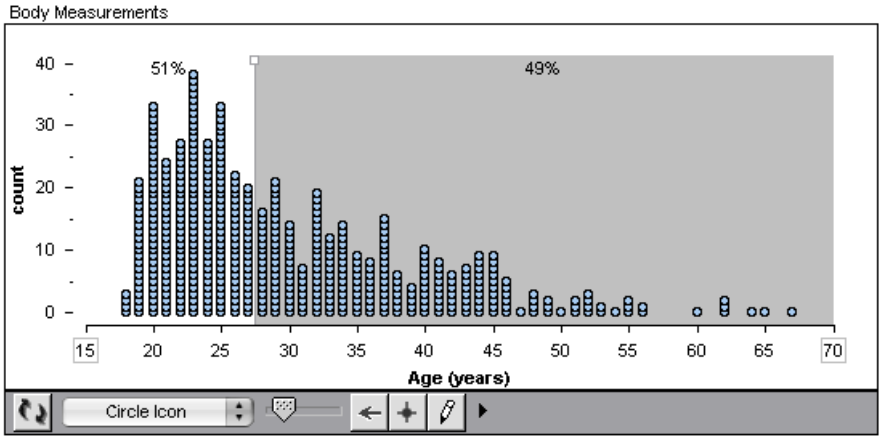
    a. You draw a 3 out of the bag and replace it with a 1. Does the mean of the numbers in the bag get bigger, smaller, or stay the same? What about the median? Describe your reasoning.

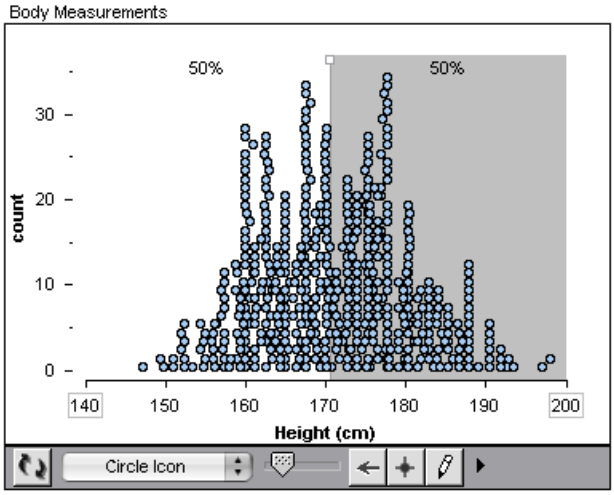
    b. You draw a number out of the bag. It is a 7. You replace it with 7 ones. Does the mean of the numbers in the bag get bigger, smaller, or stay the same? What about the median?

3. For each distribution pictured below find the mean and the median.



4. For each distribution give an estimate for the median. Then say whether the mean is probably greater than, less than, or about equal to the median and explain why you think so.





5. Which of the following distributions is likely to have a mean that is smaller than the median? Why?

   a. repeated measurements of the volume of soda in a "one liter" bottle
   b. the scores on a very easy exam in which most are A's and B's, but a few are F's.
   c. the salaries of major league baseball players