Answers

1. top left graph = (b), top right graph = (c), bottom left = (d), bottom right = (a)

2. To find the mean, we want the sum of all of the heights divided by the total number of students. Since the average of the twelve students is 68.0 inches, the total of all of those heights is just 68.0 times 12, which is 816.0 inches. Adding the height of the thirteenth student brings the total to 879.0 inches, then dividing by 13 gives a mean of 67.6 inches.

3. a) Set 2 will have a higher standard deviation since there is more spread in the values

   b) Set 2 has been shifted up but the spread is the same, so the std dev will be the same as for Set 1

   c) Set 2 will be higher, since the spread is twice as large for the second data set as for the first

4. The histogram of Victoria housing prices will not be symmetrical: there is a lower limit for the price of single-family homes, while there can be house prices in the millions of dollars. Just a few very expensive homes will bring up the mean but not affect the median in any way, which is why the mean is greater than the median.

5. left graph: symmetrical, so the mean and median should be about the same, so (b)

   right graph: skewed to the right, and the right-hand tail will drag the mean up above the median, so mean > median, and (a)

6. left graph: unimodal and symmetrical (mound-shaped also works as an answer)

   right graph: unimodal, skewed to the right

7. Since the median changed, the position of the changed value must have shifted from one side of the distribution to the other. Since the value increased, it must have been to the left of the middle data point originally and the fifty-cent increased moved it to the right of the middle.

8. The mean and median are both 7. The range is 0. The standard deviation is also 0, since all points lie exactly on the mean and $(x - \bar{x})$ is zero for each point.