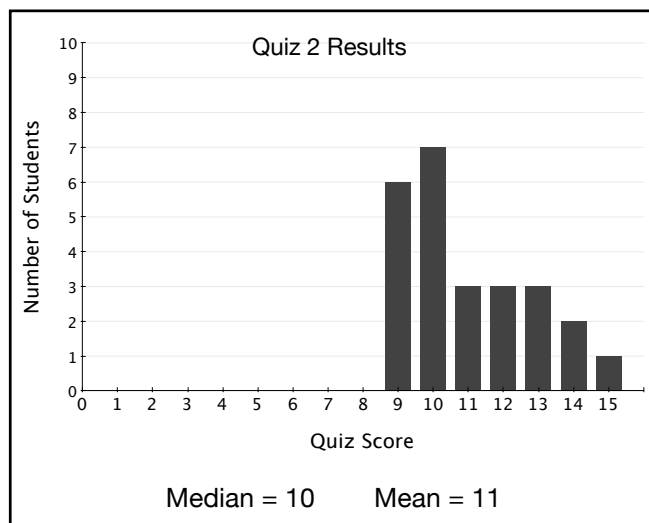
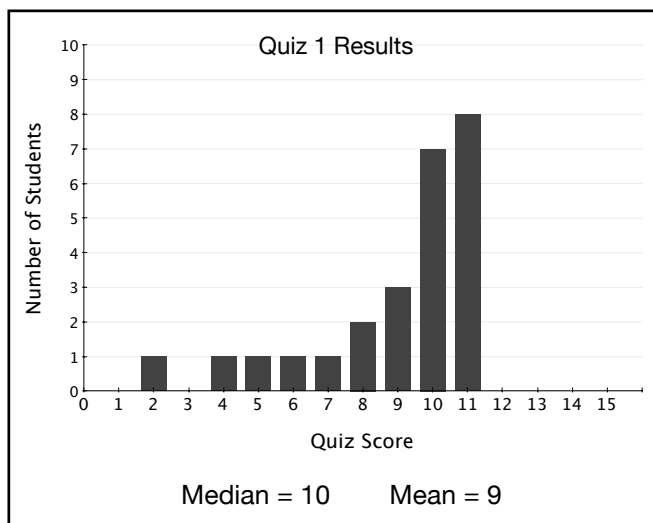


The following problems ask you to analyze a situation and predict how the data will impact the mean, median, and mode. Focus on making sense of the data rather than determining exact answers.

- Mr. Lee gave two 15-point quizzes to his eighth grade mathematics class during the first month of school. The following bar graphs show the results of each quiz.

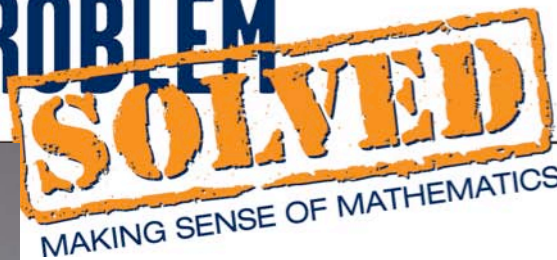


Study the graphs. Notice that the median score is the same for both quizzes, but the mean scores are different. Explain why mean score for quiz 1 is smaller than the median score, but the mean score for quiz 2 is larger than the median score.

- When Sarah's mom completed her income taxes for the year, she determined that their household income for the year was \$59,240. Sarah asked if that was an average income. According to the U.S. Census Bureau, the median U.S. household income is \$52,175 and the mean U.S. household income is \$71,128.

Source: http://factfinder.census.gov/servlet/STTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2008_3YR_G00_S1901&-ds_name=ACS_2008_3YR_G00_&-redoLog=false

- Is \$59,240 an average income? Explain your reasoning.
- Why is the mean U.S. household income larger than the median U.S. household income? Explain your reasoning.



3. Think about the number of years each U.S. president served in office rounded to the nearest year. Predict what you think the mean, median, and mode might be. Explain your reasoning.

4. The following table shows the total medals won by the five countries with the largest number of medals in the 2010 Olympics in Vancouver. The other participating countries won fewer medals.

Total Medals by Nation				
Nation	Gold	Silver	Bronze	Total
United States	9	15	13	37
Germany	10	13	7	30
Canada	14	7	5	26
Norway	9	8	6	23
Austria	4	6	6	16

Source: <http://www.vancouver2010.com/>

- a. A total of 84 countries competed in the 2010 Winter Olympics for a total of 258 medals. Determine the actual mean, median, and mode for the total number of medals won per country. If you do not have enough information, explain what additional information you need to know.

- b. Do you think the median and the mode will be smaller or larger than the mean? Why?

Further Exploration:

Visit the following website to see graphic displays of the total number of medals won by each country for each Summer and Winter Olympics since 1896.

http://www.nytimes.com/interactive/2008/08/04/sports/olympics/20080804_MEDALCOUNT_MAP.html