

Math 45 – Review for Multiple Choice Quiz #2

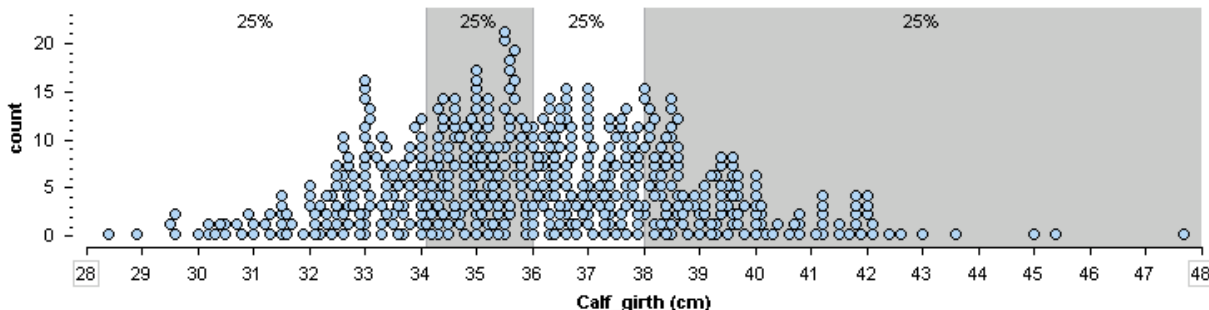
Topics covered: Median and Mean

1. Median: How we find the median given a list of values? Given a dotplot without dividers? Given a dotplot with dividers? Given a histogram?
2. Mean: How do find the mean? What does the mean mean?
3. Given a distribution of the data, can you tell when the mean is larger or smaller than the median?
4. Under what condition would the mean and median change?
5. Normal or “bell-shaped” distributions; skewed distributions; uniform distribution

Sample Questions

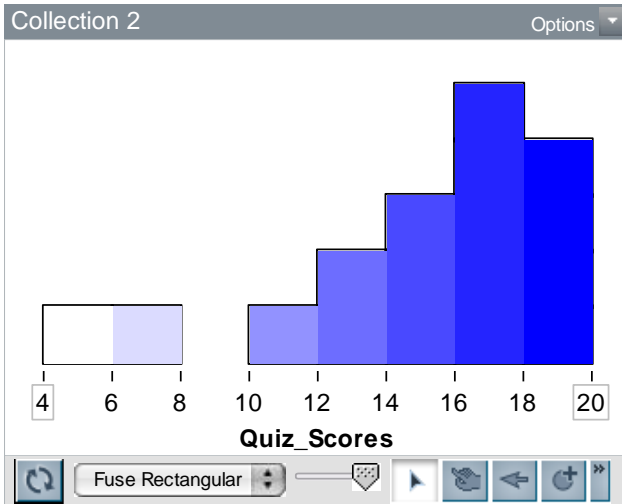
For questions #1 & #2: A college statistics class conducted a survey of how students spend their money. They gathered data from a large random sample of college students who estimated how much money they typically spent each week in different categories such as food and entertainment. The following statistics were calculated for money spent weekly on food: mean \$32 and median \$30.

- 1) A student states that the median food cost tells you that a majority of students in this sample spend about \$30 each on food. How do you respond?
 - a) Agree, the median is an average and that is what an average tells you.
 - b) Agree, \$30 is representative of the data.
 - c) Disagree, a majority of students spend more than \$30.
 - d) Disagree, the median tells you only that 50% of the sample spent less than \$30 and 50% of the sample spent more.
- 2) The class determined that a mistake had been made a value entered as 138 should have been entered as 38. The recalculate the mean and median. Which of the following would be true?
 - a) The value of the median decreases, and the value of the mean stays the same.
 - b) The values of the median and mean both decrease.
 - c) The value of the median stays the same, and the value of the mean decreases.
- 3) The school committee of a small town wanted to determine the mean number children per household in their town. They divided the total number children in the town by 50, the total number of households. Which of the following statements must be true if the mean number of children per household is 2.2 children?
 - a) Half the households in the town have more than 2 children.
 - b) There are a total of 110 children in the town.
 - c) The most common number children in a household is 2.2.
 - d) None of the above.
- 4) The dotplot below shows the distribution of weight measurements for 507 adults who attend a local gym. Estimate the median. Round your answer to the nearest whole number.



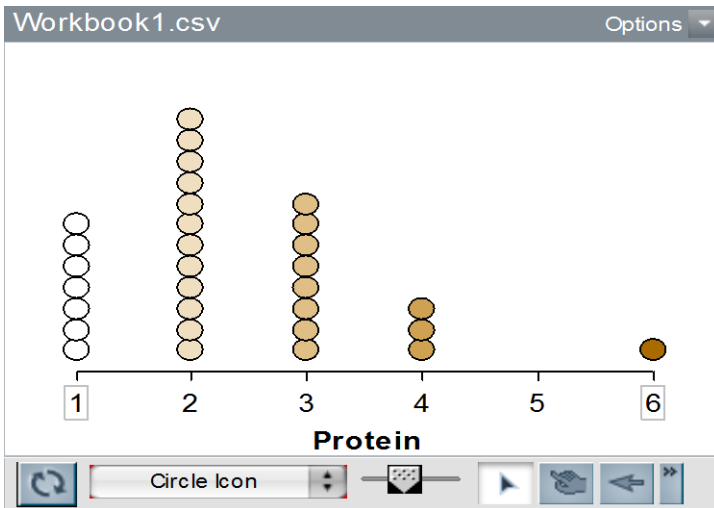
Answer: _____

5) For this graphical display of Quiz Scores, which estimates of the mean and the median are most plausible?



- a). median = 13 and mean = 15
- b). median = 15 and mean = 17
- c). median = 17 and mean = 15
- d). median = 17 and mean = 17
- e). None of the above.

6). The dotplot shows the distribution of protein (g/serving) for 31 breakfast cereals. The distribution is:



- a). Symmetric or normal or bell-shaped
- b). Skewed the left
- c). Skewed to the right
- d). Bimodal
- e). None of these

7). Use the dotplot in Question #6, find the median protein for the 31 breakfast cereals:

Answer: _____

8). Use the dotplot in Question #6, would you expect the mean protein to be _____ the median protein for the 31 breakfast cereals?

- a) Smaller than
- b) Same as
- c) Larger than
- d) Impossible to tell.