

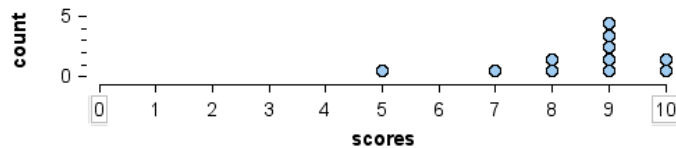
**Learning Goal:** For the distribution of a quantitative variable, describe the overall pattern (shape, center, and spread) and striking deviations from the pattern.

**Specific Learning Objectives:**

- Find the mean and median from different representations of data.
- Develop number sense with mean and median by creating different data sets with a given mean or median.

**Warmup Problem:**

The dot plot gives quiz scores for a small class.



- What is the mean? Show your work or explain how you got your answer.
- What is the median? Show your work or explain how you got your answer.
- Which measure (the mean or the median) is the better way to represent typical performance on this quiz? Why?

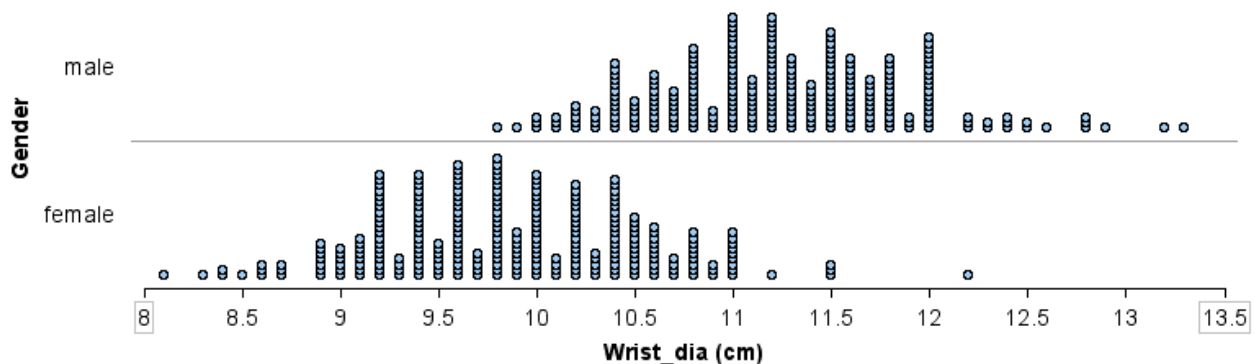
- 1) Here are two sets of exam scores, one for a class that has 4 students and one for a class that has 15 students.

Class A: 80, 90, 90, 100

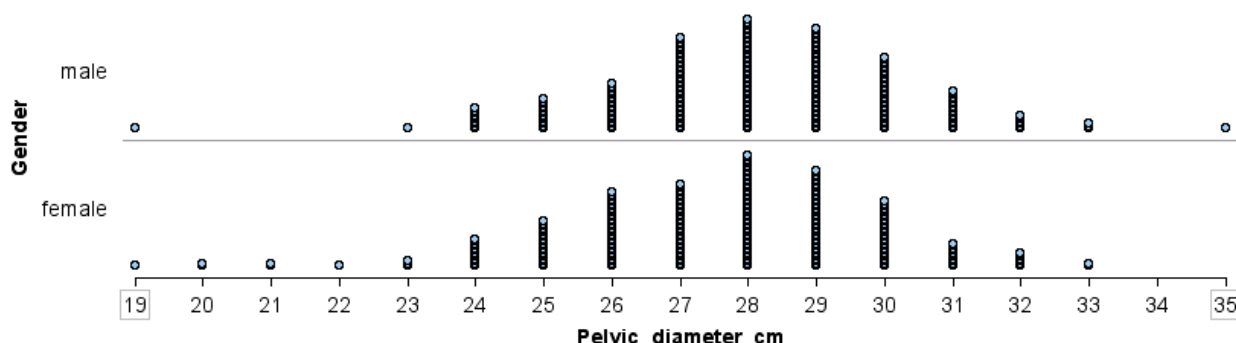
Class B: 60, 65, 65, 70, 70, 70, 75, 75, 80, 80, 80, 80, 80, 85, 100

- a) Without doing any calculations, which class do you think will have a larger mean? Why?
- b) Now calculate the mean for each class. Which is larger? Why does this make sense?

- 2) For this data, is the mean wrist measurement for men (larger than, smaller than, or about the same as) the mean wrist measurement for women? (Obviously, you can't calculate the means, so jot down notes about how you thought about this.)



- 3) For this data, is the mean pelvic diameter for men (larger than, smaller than, or about the same as) the mean pelvic diameter for women? (Obviously, you can't calculate the means, so jot down notes about how you thought about this.)



- 4) This table gives quiz scores for a different class.

Scores	Number of Students
5	1
6	3
7	5
8	3
9	1

- a) What is the mean? Show your work or explain how you got your answer.
- b) What is the median? Show your work or explain how you got your answer.
- c) Which measure (the mean or the median) is the better way to represent typical performance on this quiz? Why?

- 5) For this problem, use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
- a) List five digits that have a median of 7 and a mean of 7 (repeats allowed). Find a different set of 5 digits that work.
  
  
  
  
  
  
  
  
  
  
  - b) List five digits that have a median of 7 and a mean that is less than 7 (repeats allowed.) Give the mean of your 5 digits. Find a different set of 5 digits that work.
  
  
  
  
  
  
  
  
  
  
  - c) List five digits that have a median of 7 and a mean that is more than 7 (repeats allowed.) Give the mean of your 5 digits. Find a different set of 5 digits that work.
- 6) For this problem, use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Construct a data set where neither the mean nor the median is a reasonable “typical” value.