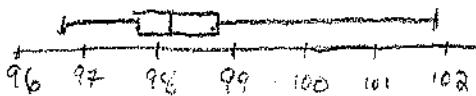


1. The body temperature of students is taken each time a student goes to the nurse's office. The five-number summary for the temperatures (in degrees Fahrenheit) of students on a particular day is:

| Min | Q1 | Median | Q3 | Max |
|-------|--------|--------|-------|--------|
| 96.6° | 97.85° | 98.25° | 98.6° | 101.8° |

- a. Would you expect the mean temperature of all students who visited the nurse's office to be higher or lower than the median? Explain.



The longer "whisker" on the right shows me the overall distribution is skewed right so the mean > median

- b. After the data were picked up in the afternoon, three more students visited the nurse's office with temperatures of 96.7°, 98.4°, and 99.2°. Were any of these students outliers? Explain.

$$\text{low end Fence} = 97.85 - 1.5(.75) = 96.725$$

$$\text{high end Fence} = 98.6 + 1.5(.75) = 99.725$$

So the 96.7 is a low end outlier

2. The boxplots show the age of people involved in accidents according to their role in the accident.

- a. Which role involved the youngest person, and what is the age?

Passenger 1 years old

- b. Which role had the lowest median age, and what is the age?

Passenger 24 yrs old

- c. Which role had smallest range of ages, and what is it?

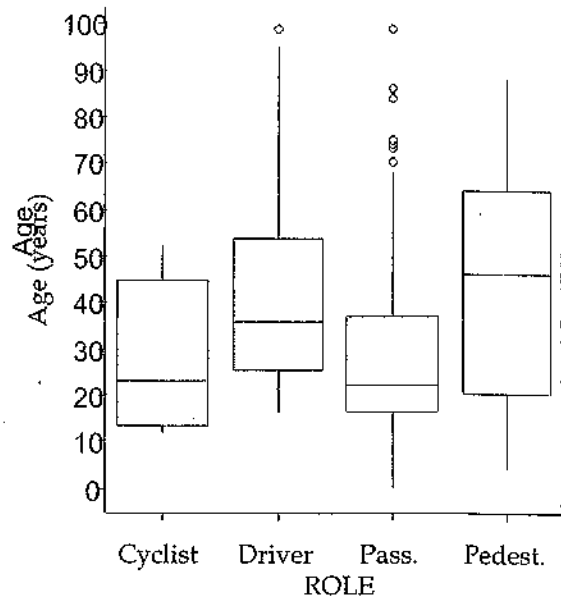
Cyclist 42 years

- d. Which role had the largest IQR of ages, and what is it?

Pedestrians 45 years

- e. Which role generally involves the oldest people? Explain.

Even though Pedestrians didn't have the oldest individual, as a group they were generally older as evidenced 5-13 by a higher median and a higher 3rd Quartile.



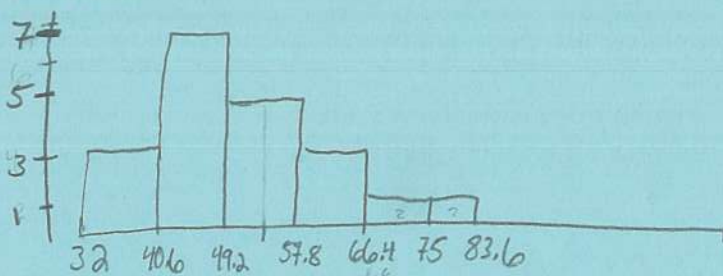
3. All students in the physical education class completed a basketball free-throw shooting event and the highest number of shots made was 32. The next day a student who had just transferred into the school completed the event, making 35 shots. Indicate whether adding the new student's score to the rest of the data made each of these summary statistics increase, decrease, or stay about the same:

- a. mean _____
- b. median _____
- c. range _____
- d. IQR _____
- e. standard deviation _____

4. The students in a biology class kept a record of the height (in centimeters) of plants for a class experiment.

- a. Sketch a histogram for these data.

| | | | | |
|----|----|----|----|----|
| 49 | 67 | 38 | 55 | 62 |
| 54 | 36 | 41 | 56 | 43 |
| 49 | 75 | 44 | 60 | 48 |
| 52 | 48 | 53 | 59 | 32 |



- b. Find the mean and standard deviation of the plant heights.

1 var stat

$$\bar{x} = \underline{51.05} \quad s = \underline{10.63}$$

- c. Is it appropriate to use the mean and standard deviation to summarize these data?

Explain.

yes since there are no outliers and the histogram is approx. normal

- d. Describe the distribution of plant heights.

The heights of the plants are roughly symmetric with a mode and a median in the 40.6 to 49.2 range. It is unimodal with a range of 43 cm.