

If necessary, round any numbers to the nearest hundredth (0.01). Make sure to use proper units (in, cm, views, etc)

Use this data set of amount of YouTube views of 10 randomly selected videos from Portugal the Man (in millions): 3, 3, 4, 4, 5, 7, 9, 11, 14, 17

$Q_1$  Med  $Q_3$  Measures of Center

In your own words, describe how to find the **mean**, then find the mean.

Description: Add the #'s, divide by "n"

Calculated mean: 7.7

In your own words, describe how to find the **median**, then find the median.

Description: Put #'s in order, choose middle

Calculated median: 6

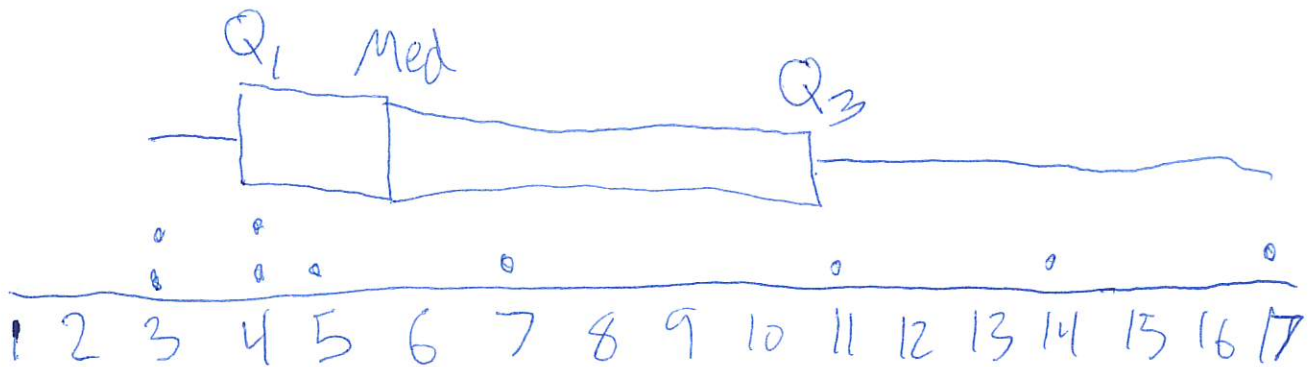
In your own words, describe how to find the **mode**, then find the mode.

Description: Most common #

Calculated mode: 3 & 4

Graphs

Create a dot plot of the data and then a box plot above it on the same number line.



Description of Distribution

Describe the **shape** of the distribution? (symmetrical or skewed). How do you know?

Skewed right  
b/c the tail is longer on the right.

Describe how to use the TI-84 calculator to calculate the **standard deviation**, then calculate it.

Description: Stat → Enter  
type in data  
Stat → right → Enter

Calculated SD: 4.92

Describe how to calculate the **Interquartile Range**, then calculate it.

Description:  $Q_3 - Q_1$   
 $11 - 4 = 7$

Calculated IQR: 7

Analysis of Distribution

Which measure of center is a *typical* number? Explain.

6. B/c the median is best for skewed distribution

Which measure of variability best describes the distribution (SD or IQR)? Explain.

IQR is better for a skewed distribution.

## Analysis of Graphs

### 1. Distribution of family income in the US

i. Shape of distribution:

*Skewed Right*

ii. Estimate of mean:

*55*

iii. Estimate of standard deviation:

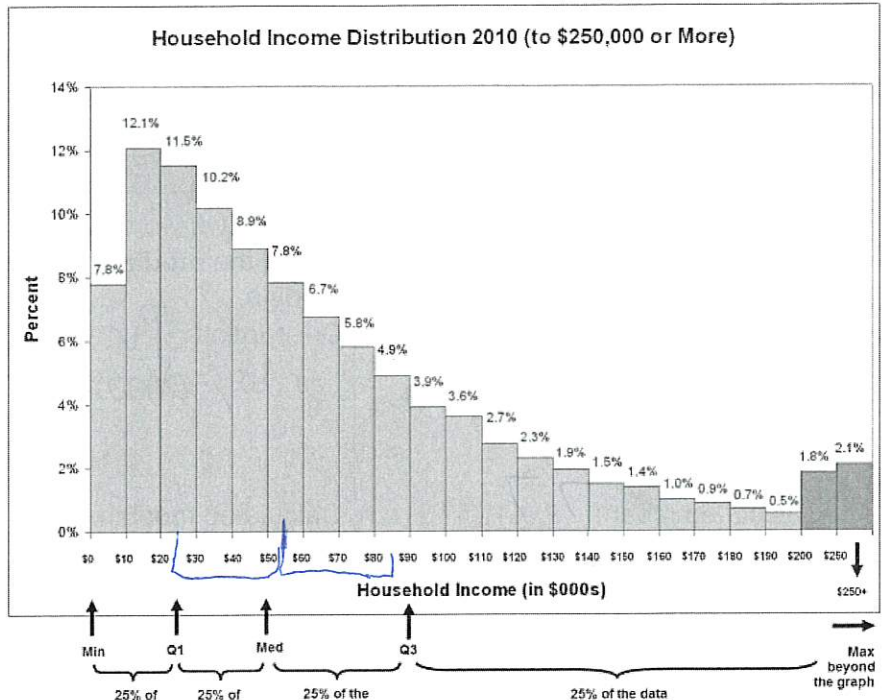
*35*

iv. Would the mean or median be a better measure of center?

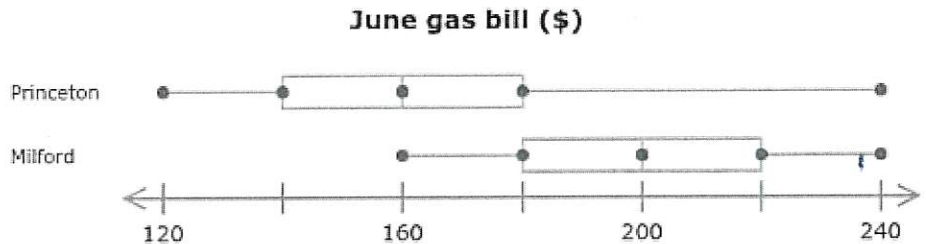
*Median*

v. Would the standard deviation or the interquartile range be a better measure of variability? Why?

*IQR. It is skewed.*



2. A utility company is reviewing gas bills of residents in two cities in New Jersey: Princeton and Milford. These box and whisker plots show the results.



a. Did one city have a higher IQR? Explain what this means in terms of their variability.

*No. Both had an IQR of 40. They both have the same variability.*

b. Which percentage of bills were over \$160 for each city? Why do you think this is important to the utility company/residents?

*Milford: 100% were \$160 or greater.  
Princeton: 50% were \$160 or greater.*

c. Estimate which city had the higher mean. Explain how you came up with your answer.

*Princeton is skewed right, but Milford looks like it has a higher mean. All of its data is on the bigger half of Princeton's distribution.*