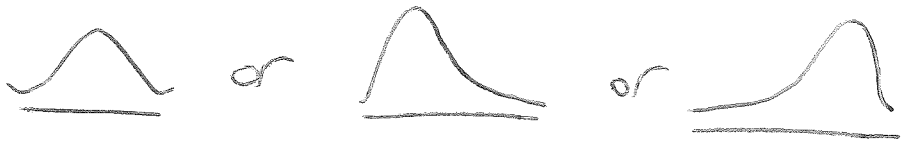
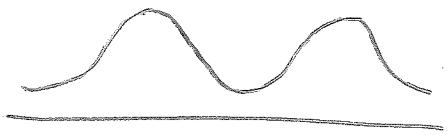
5.3 Histograms

Bar charts for quantitative variables are called histograms.

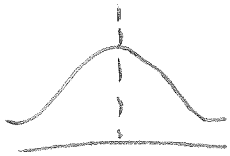
The data distribution is unimodal if there is one peak.

e.g.  or

The data distribution is bimodal if there are two peaks of roughly equal heights.

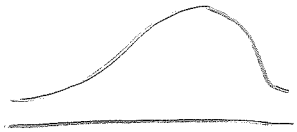


COMMON SHAPES

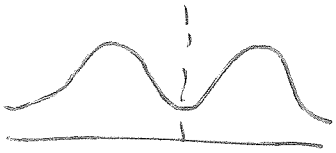


unimodal
symmetrical

unimodal
skewed right (tail is to the right)



unimodal
Skewed left (tail is to the left)



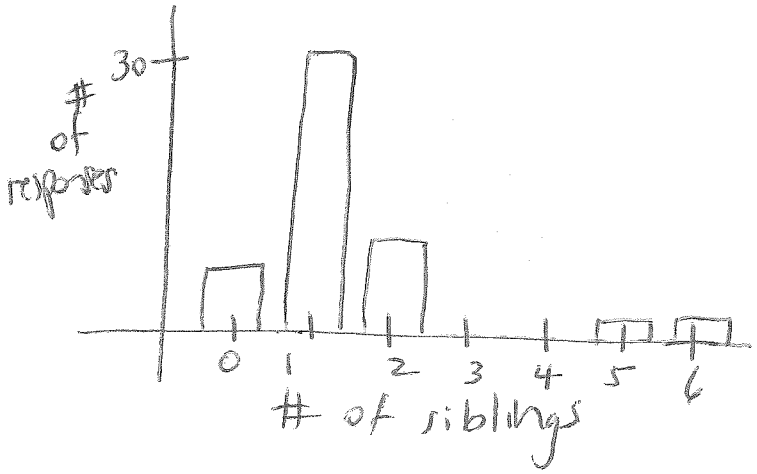
bimodal
symmetrical

- In theory there are other shapes.
- We'll choose the closest answer from these four.

OUTLIERS

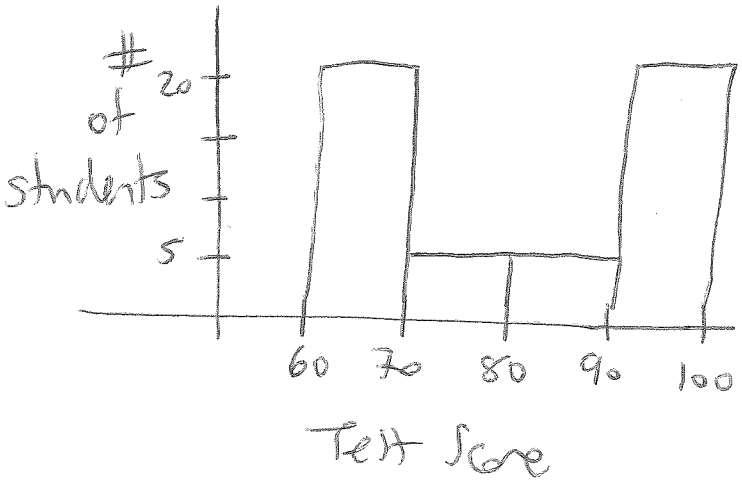
Measurements that are far from most other measurements.

Quick Ex:



5 and 6 are outliers.

Ex:



a) Describe the shape.

BIMODAL SYMMETRICAL

b) Any outliers?

No

c) Find the mode or modes.

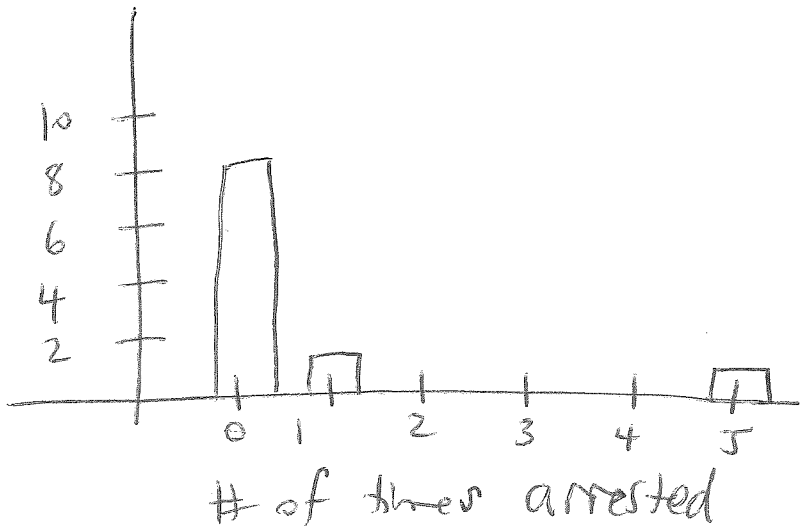
The mode or modes are the values corresponding to the peak(s).

THE MODES ARE 60-70 and 90-100.

d) What % of students scored under 80?

$$\frac{25}{50} = 0.5 = 50\%$$

Ex:



a) Describe the shape.

UNIMODAL SKEWED RIGHT

b) Any outliers?

5 is an outlier

c) Find the mode or modes.

The mode is 0.

d) What % of people were arrested at least once?

$\frac{2}{10} = 0.2 = 20\%$