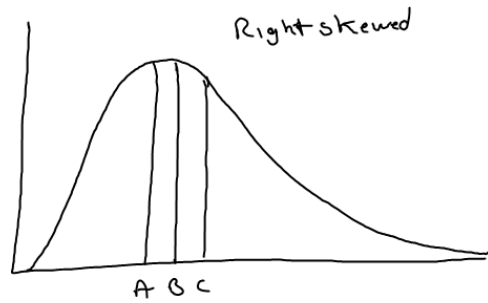
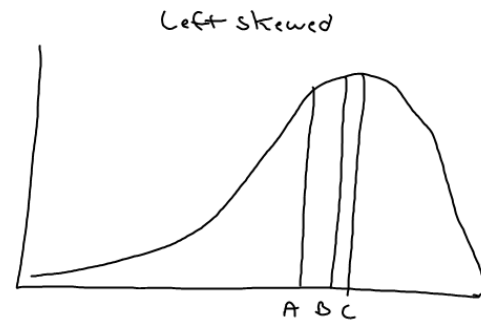


6m - median

Agent - mean

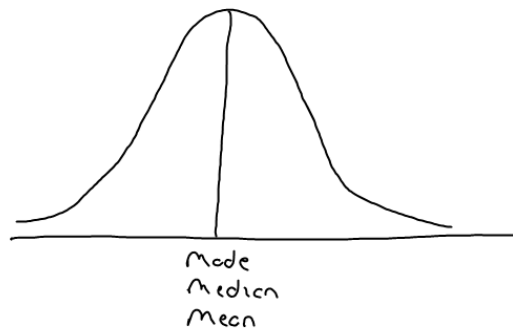


- A Mode
- B Median
- C Mean



- A Mean
- B Median
- C Mode

Symmetric)



ex

1996 new home prices

$$\bar{x} = 170,800 \quad n = 143,000$$

How is this possible?

Housing market is right skewed. Mean, which is not resistant, is being pulled toward the skewness

Quartiles

Distribution

Center

mean

median

Spread

Standard
Deviation

Quartiles

Q_1 is the median of the first 50%.

Q_3 is the median of the last 50%.

Q_1	Median	Q_3
25 th percentile	50 th percentile	75 th percentile

Interquartile range = IQR = $Q_3 - Q_1$

Ruth ($n=15$)

22 25 34 $\boxed{35}$ 41 41 46 $\boxed{46}$ 46 47 49 $\boxed{54}$ 54 59 60
 Q_1 m Q_3

Maris ($n=10$)

8 13 $\boxed{14}$ 16 23 | 26 28 $\boxed{33}$ 39 61
 Q_1 $m = \frac{23+26}{2}$ Q_3
 $m = 24.5$

Potential Outliers $1.5 \times (IQR)$ above Q_3 and below Q_1

$$Q_3 + 1.5(IQR)$$

$$Q_1 - 1.5(IQR)$$

Ruth

$$Q_1 - 1.5(IQR)$$

$$35 - 1.5(54 - 35)$$

$$35 - 28.5$$

$$6.5$$

$$Q_3 + 1.5(IQR)$$

$$54 + 1.5(54 - 35)$$

$$54 + 28.5$$

$$82.5$$

Maris

$$Q_1 - 1.5(IQR)$$

$$14 - 1.5(33 - 14)$$

$$14 - 28.5$$

$$-14.5$$

$$0$$

$$Q_3 + 1.5(IQR)$$

$$33 + 1.5(33 - 14)$$

$$33 + 28.5$$

$$61.5$$

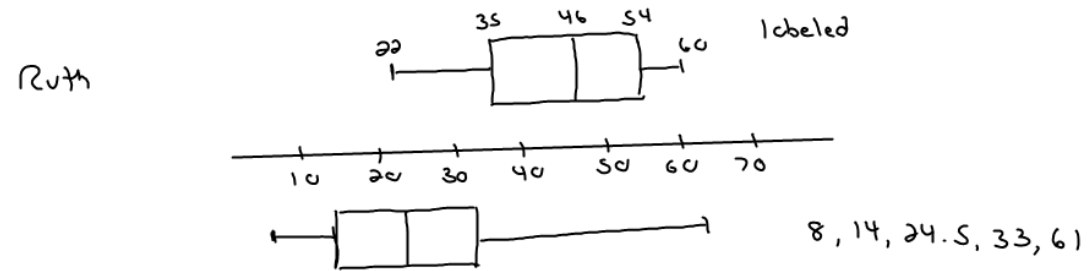
By rule, 61 is not an outlier

In reality, it probably is.

Five Number Summary

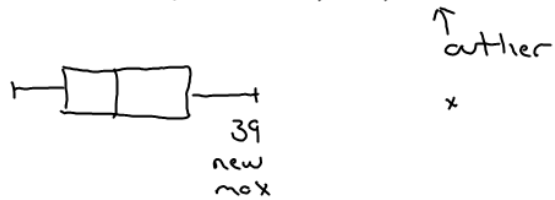
	minimum	Q1	m	Q3	maximum
Ruth	22	35	46	54	60
Meris	8	14	24.5	33	61

Boxplot - visual representation of the 5 number summary
 - must be accompanied by a scale or labeled



outliers - marks outside the box plot

8, 14, 24.5, 33, 62



Need to check for outliers

$$Q1 - 1.5(IQR)$$

$$Q3 + 1.5(IQR)$$

#4
Ch1: 94