

Data Set: 6, 9, 11, 11, 13

## Worked Example

- Find standard deviation

$X$	$X - \bar{X}$	$(X - \bar{X})^2$
6	-4	16
9	-1	1
11	1	1
11	1	1
13	3	9
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50		28

$$\bar{X} = \frac{50}{5} = 10$$

$$\text{variance} = \frac{28}{n} = \frac{28}{5} = 5.6$$

$$\text{standard deviation} = \sigma = \sqrt{5.6} \approx 2.366$$

- Find lower/first quartile ( $Q_1$ )  
median ( $\hat{X}$ )  
upper/third quartile ( $Q_3$ )

$$\hat{X} = 11$$

$$Q_1: \text{median of } \{6, 9\} \quad Q_1 = \frac{6+9}{2} = 7.5$$

$$Q_3: \text{median of } \{11, 13\} \quad Q_3 = \frac{11+13}{2} = 12$$

- Make a box plot

