Example 1
Mean, median, and mode

The number of aphids on tomato plants was counted.

4	4	3	7
5	5	6	6
5	5	6	4
4	4	4	5
6	4	4	5
4	4	4	5
4	5	5	4
5	3	5	5
6	4	6	4
6	4	6	5

Mean

$$\overline{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

$$\overline{X} = \frac{\sum_{i=1}^{n} X_i}{n} = \frac{190}{40} = 4.75$$

Mean = 4.8 aphids

Median

Organize the data into an array.

3	4	5	5
3	4	5	6
4	4	5	6
4	4	5	6
4	4	5	6
4	4	5	6
4	4	5	6
4	4	5	6
4	5	5	6
4	5	5	7

$$\mathrm{M} = X_{\frac{(n+1)}{2}}$$

$$\mathrm{M} = X_{\frac{(n+1)}{2}} = X_{\frac{(40+1)}{2}} = X_{20.5} = \frac{X_{20} + X_{21}}{2} = \frac{5+5}{2} = \frac{10}{2} = 5$$

Mode = 5 aphids

Mode

Construct a frequency table.

Value	Frequency
3	2
4	16
5	13
6	8
7	1

The most frequently occurring value is 4 with 16 occurrences.

Mode = 4 aphids.