

Mean, Median, and Mode



Three measures of central tendency are mean, median, and mode.

The **mean** of a data set is the sum of the values divided by the number of values.

The **median** of a data set is the middle value when the values are written in numerical order. If a data set has an even number of values, the median is the mean of the two middle values.

The **mode** of a data set is the value that occurs most often. A data set can have no mode, one mode, or more than one mode.

EXAMPLE

Find the mean, median, and mode(s) of the data in the table.

Mean

Add the values. Then divide by 8, the number of values.

$$\begin{aligned} \text{Sum} &= 251 + 222 + 222 + 220 + 215 + 207 + 188 + 178 \\ &= 1703 \end{aligned}$$

$$\blacktriangleright \text{Mean} = \frac{1703}{8} = 212.875$$

Median

Write the values in order from least to greatest. Then find the middle value(s).

178, 188, 207, **215, 220**, 222, 222, 251

Find the mean of the two middle values.

$$\blacktriangleright \text{Median} = \frac{215 + 220}{2} = \frac{435}{2} = 217.5$$

Mode

Find the value that occurs most often.

$$\blacktriangleright \text{Mode} = 222$$

Lengths of School Years	
Country	School year (days)
China	251
Korea	222
Taiwan	222
Japan	220
Israel	215
Switzerland	207
Canada	188
United States	178

PRACTICE

Find the mean, median, and mode(s) of the data.

- Test scores: 90, 88, 95, 94, 87, 85, 92, 99, 100, 94
- Daily high temperatures ($^{\circ}\text{F}$) for a week: 68, 70, 67, 68, 75, 75, 74
- Ages of employees: 24, 52, 21, 55, 39, 49, 28, 33, 52, 41, 30, 64, 45
- Numbers of students in classes: 21, 24, 27, 28, 25, 18, 22, 25, 26, 22, 27, 20
- Movie ticket prices: \$6.75, \$7.50, \$7.25, \$6.75, \$6.25, \$7.50, \$7.25, \$6.75, \$7
- Hourly rates of pay: \$14.50, \$8.75, \$7, \$11, \$16.50, \$18, \$12, \$10.25
- Numbers of children in families: 0, 0, 1, 1, 1, 2, 2, 2, 2, 3, 3, 4, 4, 5
- Ages of students in a high school class: 3 sixteen-year-olds, 10 seventeen-year-olds, and 7 eighteen-year-olds