## Mode

The mode is a type of average.
For data, it is the item that occurs most frequently in a set of data, and is meaningful for both quantitative and qualitative data.

A set of data can have more than one mode, if more than one item has the same greatest frequency. For example, for the data 1, 1, 1, 2, 4, 4, 4, 7, 7, 8, there are two modes: 1 and 4. This data would sometimes be called bimodal.

For grouped data, if all of the classes have the same class width, then the modal class is the class with the greatest frequency.

If the classes have different widths, then their frequency densities need to be calculated. In this case, the modal class is the class with the greatest frequency density.

There are corresponding definitions for random variables. For a discrete random variable $X$, a mode of $X$ is a value $m$ for which $P(X=m)$ is greatest. (As with data, a random variable can have more than one mode.)

For a continuous random variable $X$ with probability density function $f(x)$, a mode of $X$ is a value $m$ for which $f(m)$ is greatest.

