

MODE



Statistics



MODE

MODE

The mode, or modal value, is the most common number in a data set. It's useful in statistics because it can tell you what the most popular item in your set is.

For example, you might have results from a customer survey where your company is rated from 1 to 5. If the most popular answer is 2, then you know you need to make some improvements in customer service!

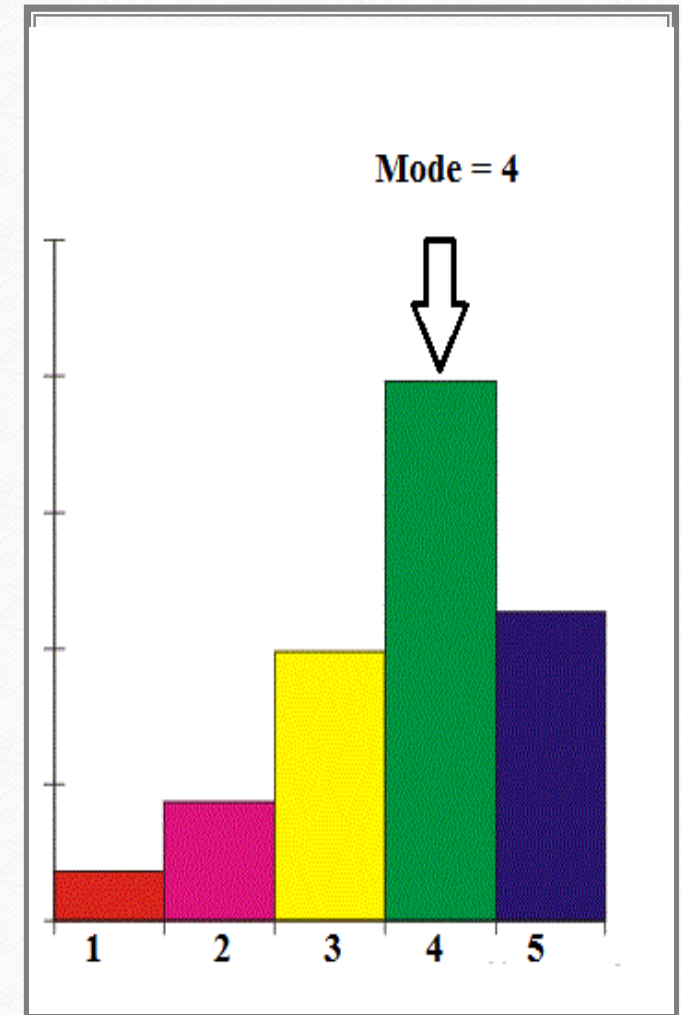
A data set can have no mode, one, or many:

None: 1, 2, 3, 4, 6, 8, 9.

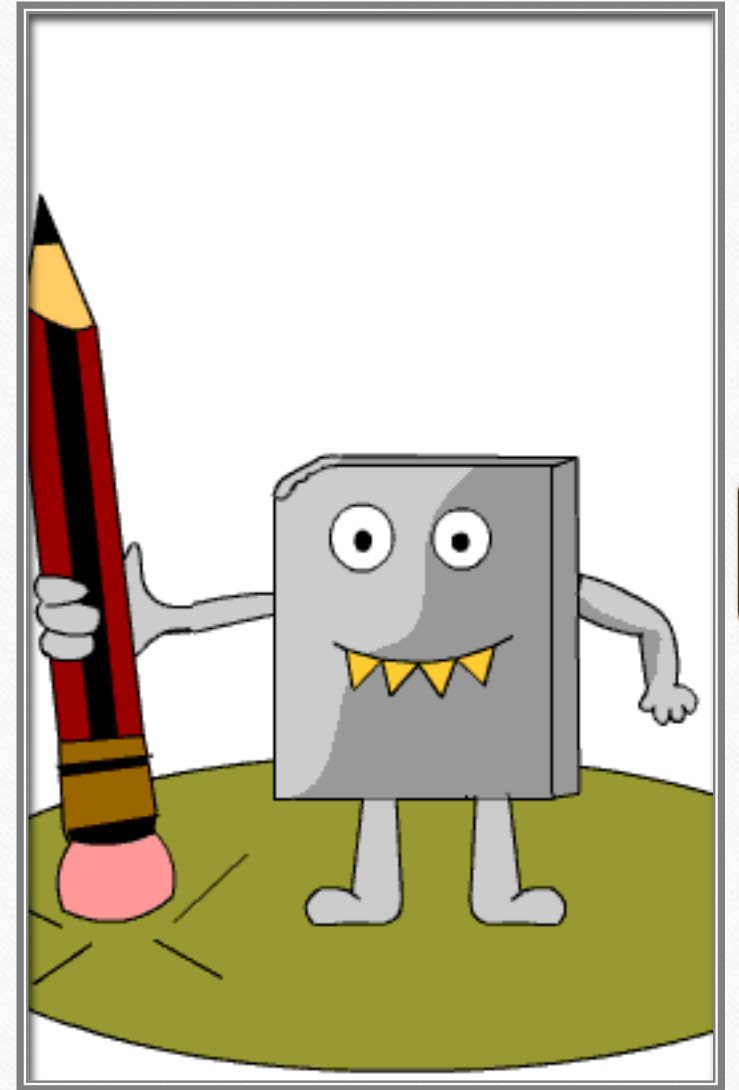
One mode: **unimodal**: 1, 2, 3, 3, 4, 5.

Two: **bimodal**: 1, 1, 2, 3, 4, 4, 5.

Three: **trimodal**: 1, 1, 2, 3, 3, 4, 5, 5.



MODE OF AN UNGROUPED DATA



Example:

Find the mode of the following set of scores.

14 11 15 9 11 15 11 7 13 12

Solution:

The mode is 11 because 11 occurred more times than the other numbers

MODE OF A GROUPED DATA



$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

**Formula
for finding
the mode**

where l = lower limit of the modal class,

h = size of the class interval (assuming all class sizes to be equal),

f_1 = frequency of the modal class,

f_0 = frequency of the class preceding the modal class,

f_2 = frequency of the class succeeding the modal class.

MODAL CLASS

Example

Class interval (C. I)	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30
Frequency (f_i)	3	5	7	2	4

f_0

f_1

f_2

First identify
the modal class
that is the class
with highest
frequency
mark it as F_1

Mark frequency above
modal class as F_0 and
frequency below modal
class as F_2

Here frequency of class interval 15 - 20 is maximum.
So, it is the modal class

f_1 = frequency of modal class = 7

f_0 = frequency of class preceding the modal class = 5

f_2 = frequency of class succeeding the modal class = 2

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

**l = the
lower limit
of modal
class = 15**

$$\text{Mode} = 15 + [(7 - 5) / (2 \times 7 - 5 - 2)] \times 5$$

$$\text{Mode} = 15 + [2 / (14 - 7)] \times 5$$

$$\text{Mode} = 15 + (2 / 7) \times 5$$

$$\text{Mode} = 15 + (10 / 7)$$

$$\text{Mode} = 15 + 1.42$$

$$\text{Mode} = 16.42$$

**h = size of class
intervals = 5**

Thank You!

A vibrant, hand-drawn illustration of the words 'Thank You!' in a playful, stylized font. The letters are thick and outlined in black, with various colors and patterns. The 'T' is yellow with red wavy lines. The 'h' is orange with red wavy lines. The 'a' is green with a black dotted border. The 'n' is purple with a black dotted border. The 'k' is orange with red wavy lines. The 'y' is green with a black dotted border. The 'o' is pink with a black dotted border. The 'u' is blue with a black dotted border. The exclamation mark is blue with a black dotted border. There are three flowers: a blue one with a purple center, a pink one with a yellow center, and a blue one with a purple center. The background is light blue with a white border. The entire illustration is set against a brown background with two black horizontal bars on the left and right sides.