```
AVERAGE
= average( )
```

The average of a collection of numbers is obtained by adding the numbers together, and dividing that result by how many numbers are in the collection.

For example, the collection
$\{27,14,26,12,12,12,23,29,15,21,19,7,2,24,27\}$ contains 15 whole numbers. Adding these 15 numbers together we get 270 , and dividing that total by 15 we get the average = 18.

The first recorded use of "average" in English was in 1732. The word "average" came from an Arabic word meaning "damaged merchandise" and then got translated into Italian and French before being used in English. Originally then word "average" meant to proportionately distribute a charge incurred for damages at sea. Wordnik has a lot of possible fascinating prior meanings for "average"

In a spreadsheet we can find the average of a collection of numbers in a column, or in a row. Let's say we have the 10 numbers $17,9,40,9,19,1,29,36,37,8$ in cells A1 through A10.


We can find the average of these numbers with the command $=$ average(AL.ALO)
The result is 20.5

Similarly, if we have the 8 numbers $25,26,26,17,30,14,26,10$ in cells $\mathrm{AL}, \mathrm{BI}$, through HI , we can find the average with the command

$$
=\operatorname{average}(\mathrm{AL} . \mathrm{HI})
$$

The result is 21.75

If a column (or row) has missing values, those cells will be counted as $\theta$, and will affect the average. For example, if we have a 2 in $\mathrm{AL}, \mathrm{a} 10$ in A 4 , and cells $\mathrm{A} 2, \mathrm{~A} 3$ are blank, the command

$$
=a v e r a g e(A 1 . . A 4)
$$

will yield 3 as a result of the calculation $(2+\emptyset+\emptyset+10) / 4$

|  | A5 | $\star$ | $\otimes$ |
| :---: | :---: | :---: | :---: |
| 1 | A |  |  |
| 1 | 2 |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 | 10 |  |  |
| 5 | =AVERAGE(A1:A4) |  |  |
| 6 |  |  |  |

The average is not always a good indicator of the distribution of numerical values:
the average of the heights of a $7^{\prime \prime} 3^{\prime \prime}$ basketballer \& three 5 year olds with heights $3^{\prime} 5^{\prime \prime}, 3^{\prime} 6^{\prime \prime}$ and $3^{\prime} 6^{\prime \prime}$ is:

$$
\left(87^{\prime \prime}+41^{\prime \prime}+42^{\prime \prime}+42^{\prime \prime}\right) / 4=53^{\prime \prime}=4^{\prime} 5^{\prime \prime}
$$

