Average (n) = sum of elements / number of elements

Min element <= Avg value <= Max element

Average of equal value element is equal to element value.

Average of n values can be defined as the equal distribution of the sum of n values over all the values.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 20 | 60 | 10 | 40 | 30 | 80 |
| +20 | -20 | +30 | 0 | +10 | -40 |

Average = 40

If the whole series is incremented, decremented, multiplied, or divided by a K value then result on average A is

Addition = A+K

Subtraction = A-K

Multiplication = A\*K

Division = A/K

Average of group

A = (n\*An + m\*Am)/ m+n n & m are elements

If we add a value grater than the average value then the overall avg gets increased,

If we add a value lower than the average value then the overall avg gets decreased.

Same works for replacing and deletion.

New avg = old avg + (new value - old value)/ no of observations

**Consecutive Numbers**

a = 1, 2, 3, 4 … a, a+1, a+2, a+3 …

Consecutive odd numbers

a = 1, 3, 5, 7 … a, a+2, a+4, a+6 …

Consecutive even numbers

a = 2, 4, 6, 8 … a, a+2, a+4, a+6 …

Average is middle number

Even no. of terms = 1, 2, 3, 4 => Avg = (2+3)/2 = 2.5

Odd no. of terms = 1, 2, 3, 4, 5 => Avg = 3