## Mean and Range

## **Mean**

The **mean** is the **average**. The **average** is an important measure of **central tendency** for a series of values.

If you wanted to know the average of two Math test results like **80%** and **90%**, you would add them together and divide by 2:

Average = 
$$\frac{80 + 90}{2}$$
$$= \frac{170}{2}$$
$$= 85\%$$

## Mean - Example 2

If we want to find the average of 3 test results like **60**, **76**, and **80**, we would add them together and divide by 3:

Average =  $\frac{60 + 76 + 80}{3}$  $= \frac{216}{3}$ = 72%

So, the average of the three tests would be 72%.

## **Mean General Formula**

The general formula for the **average** or the **mean** can be written as:

 $\overline{x} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{n}$ 

where

 $\overline{x}$  = mean or average  $x_1 = 1$  st number  $x_2 = 2$ nd number  $\vdots$   $x_n = 1$  ast number n = # of terms to be averaged Let's use this formula to redo the previous example.

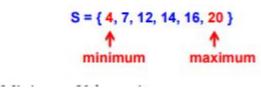
 $x_{1} = 60 \qquad x_{2} = 76 \qquad x_{3} = 80$  n = 3  $\overline{x} = \frac{x_{1} + x_{2} + x_{3}}{n}$   $\overline{x} = \frac{60 + 76 + 80}{3}$   $= \frac{216}{3}$  = 72%



To calculate the range for a set of numbers, we need to identify the **minimum** and **maximum value** in the number set.

For example, identify the minimum value and the maximum value for the following number set.

For set S:



Minimum Value = 4

Maximum Value = 20

To calculate the range, we use the formula: Range = Max – Min

For set S, the range is : Range = 20 - 4 = 16

So, the range is 16 for set S.