

The geometric mean of a set of n data is the result of multiplying all of them and then applying the n -th root.

If in the arithmetical mean we were adding up the values to then divide them, now we must multiply them and then apply the relevant n -th root. That is,

$$\dot{x} = \sqrt[n]{x_1 \cdot x_2 \cdot x_3 \dots x_n}$$

it is necessary to highlight that to calculate the geometric mean it is necessary that there are no negative numbers or that these are an even number. If the values contain an odd amount of negative numbers we would be trying to apply a root to a negative number, and then we could not find a solution among real numbers.

Calculate the geometric mean of the number of brothers that Peter, John and Diana have if they have 2, 2 and 4 respectively.

We apply the formula :

$$\dot{x} = \sqrt[3]{2 \cdot 2 \cdot 4} = \sqrt[3]{16} \approx 2.52$$