

Calculus as an Integral Part of Our Education

The term calculus was derived from the Latin word for small stone used for counting. Indeed this small branch of mathematics once developed has helped us to count on various modern inventions. This field of mathematics involves the study of derivatives, limits, infinite series and integrals.

The need of calculus arose from the insufficiency of previous methods like algebra. However, we must not forget that calculus has been built upon the concepts of algebra, analytical geometry and trigonometry. This particular branch has helped for many years' different scientists as well as engineers to refine their work.

There are basically two major branches of calculus; notably they are classified as Differential calculus and Integral calculus. Both Leibniz and Sir Isaac Newton are considered the founding fathers of this revolutionizing form of mathematics. It is strange to think that both the people developed the same science starting from two different ends, or with two different view points. Newton had initially started with differential calculus whereas Leibniz started his work using Integrals.

In higher mathematics calculus is simply referred to as analysis and is considered the advanced study of functions. However, the study of calculus does involve the aspect of irregularity and change, and the respective changes in the environmental aspects owing to these irregularities.

Let us consider the movement of a car on a highway. Here we can clearly visualize that if the highway is clear the driver would look forward to increase the speed to an optimum level after which he will drive with the same speed. With the help of calculus we can easily estimate the car's acceleration if we know the initial speed and the speed when he settled. Acceleration is therefore defined as the first order derivative of velocity, which in turn is the first order derivative of displacement.

There are various examples like these to state the usage of calculus in our daily life. While considering a 3D figure over the axes integral calculus is used to determine the space over which the surface would travel. With its help we can also find out that if that particular surface is rotated in a fixed manner the volume it would occupy over the vacant space.

Furthermore, when we deal with infinitesimals we take help of the infinite series, which enables us to get a gross idea of what we are up to. Once the series has been formed we simply put a value into it and wait for the outcome. These are generally utilized in case of productions department or even in the laboratories where one may try and figure out the exact number of replications possible for a particular virus or composition.

Thus to understand calculus help is required and it is essential that a student of science gets a concrete know-how of the subject as the entire field of science is dependant on the basis of calculus. For calculus help is also available over the internet. It helps a student to brush up the little details that he could not figure out by himself.

About the Author

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