The concept limit appears as the beginning of calculus. At first, we are not defining limit. However, we take the institutive idea of limit and enable ourselves to understand and develop some properties of limits, and theorems on limit of algebraic and transcendental functions. We use the concepts of limits and one side limits to understand continuity.

Intuitive Idea of limit :

At first, we take a sequence of regular polygon inscribed in in identitcal circles. Comparing the perimeter of each polygon(denoted by Pn+2 and the circumference of each circle (denoted by c). we always have Pn+2 < C.

However, the difference between two sides is minimize as we go on increaming the number of sides. For a largra enough n, Pn+2. Tend to be equal to C. this is abbreviated as lim n>infinity, It means that perimeter of polygon can be made suffucently close as we please to the circulference of the circle by taking n necessariliy large similarly, we can talk about the area of the polygon (An+2). And the area of the circle A we have

The are of the polygon can be made sufficiently close to the area of the circle by increasing the number of sides necessarily Let us consider a function F(X). and construct a table of values nearby

We see that the values of the Function tend to be sufficenlty close to is made necessarily close the limit of the Funciton as approaches As is also 19, we have made no distinction between the limit of the function and functional value yet. This will be done in the subsequent part. We conclude this ***discussion with the following intuitive definition of limit***

A funciton fx is said to tend to the limit as X approaches a we write limt A function FX is said to tend to limit as x approaches a we write the value can be made as close as we please to by talking what went wrong We have started with a high hypothesis but came to a false conclusion. So, we must have committed mistake somewhere in the calculation. Can you point out? Of course, we have cancelled the factor X-X.

In both sides, i.e we treated this blunder

Where is a finite number .

Indeterminant forms may arise from replacing different members of composite functions by their limits before combining the members properly .The correct procrdure is to find limits of quotient, different, product etc. **Indeterminant forms may arise form replacing different members of composite functions by their limits before combining the members of there composite function by their limits before combining the members properly the correct procedure is to find the limits of quotients, difference product etc. not the quotient, difference, product etc, of the limits.**

**A maximum or minimum value of a function is also called an extrmum or extreme value of the function. It is possible to give geometic insight into what a maximum or minimum point is At the local maximum in fig the function changes from increasing to decreasing. Hence at the local maximum, the function changes from decreasing to increasing and so the derivatives fx changes from negative to the positive. At the local maxima or minimum point the tangent to the curve is horizontal parallel to x axis and so at these points a point on the graph of function where the tangent is parallel is called stationery function**

**INTRODUCTION ON CALCULUS :**

**Calculus is the mathmetics of motion and change. Where is the motion or growth, where variable forces are at work producing acceleration, calculus is the right mathmetics to apply it deals principally with two geometric problems :**

**Finding the tangent line to a curve, which is studied by a limit process known as differentiation ; and finding the area of a region under a curve, which is studied by another limit process to integration to which we turn now.**

**The websters dictionary says that to integrate means the deepe and more fundamental meaning is nearby the same as thenon technical definition o indicate the whole of ; to sum or total of:”**

**Integral calculus deals with the problemsof determining a function from information about its rate of change or from its derivatives . it enables people to find the areas of irregular region in the plane, to measure the length of the curve.**

**To find the volume and masses of the arbitrary solids, to find the centers of gravity and other applications, in the fields of physics, astronomy, engineering economics. etc.**

**In the early days, the calculations of the area undre the curve of a function was a challenge for mathmetician. The great Greek mathmetician Archimides solved these problems by using some special methods. Before leibnitx thin rectangles .**

**Leibnitz also introduced integral sign in 1676 by elongated a which stands for “sum”. The subjects concerning this theory was decided by the agreement between James Bernooulli And Leibniz to be called ‘ Integral’ . Calculus in 1696.**

**Bernoulli and Leibnitz to be called Integral calculus in 1696**

**While the term integral itself was introduced by Bernoulli calculus in 1696 while the term integral itself was introduced by Bernoulli 1690. In this chapter, we find integrals of various types of the Functions by didferent methods, the ares under curves by using definite integrals.**