

Role of Limit and Continuity in Life

By

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Abstract: In this paper we will see the role of Limit and continuity in our life. How basic concepts affect our life. Achieving something is very close to approaching that thing. It will be same if the path is smooth.

Meaning in calculus: If f(x) becomes arbitrarily close to a single number L as x approaches to c from either side, then the limit of f(x) as x approaches to c is L

$$\lim_{x \to c} f(x) = l$$

Either you come from right side or left side of c, limiting value is L.It doesn't mean f(c) = L, function value may be different at c. When the path is smooth, then the limit of a function and value of a function is the same. That is considered as continuous, so function will be continuous at point c.

$$\lim_{x \to c} f(x) = f(c) = l$$

Importance of limit and Continuity in life: In our life when we are trying to reach a destination, there might be different paths but not all paths lead to the point of destination. By following some path we can be near to the point but not always achieving. This is the case when limit exist for a point but function is not defined at that point. Continuity near to that point is important here to achieve it.

If the path is continuous then we can come from any side, we will reach the destination. With continuity we can estimate what possible things will come in the path. We can call it a safe decision.

On the other hand, taking calculated risk for your passion can lead to unbelievable achievement, where limit does not exist around that point but function value exists.

Conclusion: It depends person to person they will choose continuous paths for the safe side or taking calculated risk to try new.

(Here destination may be goal, target etc.,

Calculated risk mean accept the worst case scenario)

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References:

Mathematical definition taken from "Calculus of a single variable" by Larson Edwards <u>https://static.secure.website/wscfus/5807541/6484248/calculustextbookfull.pdf</u>. Its resemblance with life is my observation and experiences.