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[How do you know a limit does not exist? In short, the limit does not exist if there is a lack of continuity in the neighbourhood about the value of interest.](#) Recall that there doesn't need to be continuity at the value of interest, just the neighbourhood is required.

[Determining When a Limit does not Exist - Calculus - Socratic](#)

[socratic : calculus : limits : determining-when-a-limit-does-not-exist](#)

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To determine if the limit of $f(x)$ at $x = a$ exists, we check three things:

1. if the left limit of $f(x)$ at $x = a$ exists,

2. if the right limit of $f(x)$ at $x = a$ exists,

3. if these two limits are equal.

[Lesson Explainer: Existence of Limits Mathematics - Nagwa](#)

[nagwa : explainers](#)