

Calculus 2 2 Limit and One Sided Limit

Lesson 259 | Calculus AB | Limits and one-sided limits

<https://www.youtube.com/watch?v=gOTF3WhC0qY>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Evaluate $\lim_{x \rightarrow 3} \frac{(x^2 - 9)}{(5(x - 3))}$. Explain why substitution alone is inconclusive.

02

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2 - 16)}{(8(x - 4))}$. Explain why substitution alone is inconclusive.

03

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2 - 16)}{(5(x - 4))}$. Explain why substitution alone is inconclusive.

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04

Evaluate $\lim_{x \rightarrow 7} \frac{(x^2 - 49)}{(4(x - 7))}$. Explain why substitution alone is inconclusive.

05

Evaluate $\lim_{x \rightarrow 5} \frac{(x^2 - 25)}{(7(x - 5))}$. Explain why substitution alone is inconclusive.

06

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2 - 16)}{(11(x - 4))}$. Explain why substitution alone is inconclusive.

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01

Evaluate $\lim_{x \rightarrow 3} \frac{(x^2-9)}{(5(x-3))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2-9=(x-3)(x+3)$; cancel for $x \neq 3$. Limit of $(x+3)/5$ is $6/5$.

02

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2-16)}{(8(x-4))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2-16=(x-4)(x+4)$; cancel for $x \neq 4$. Limit of $(x+4)/8$ is 1 .

03

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2-16)}{(5(x-4))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2-16=(x-4)(x+4)$; cancel for $x \neq 4$. Limit of $(x+4)/5$ is $8/5$.

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04

Evaluate $\lim_{x \rightarrow 7} \frac{(x^2 - 49)}{(4(x - 7))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2 - 49 = (x - 7)(x + 7)$; cancel for $x \neq 7$. Limit of $(x + 7)/4$ is $7/2$.

05

Evaluate $\lim_{x \rightarrow 5} \frac{(x^2 - 25)}{(7(x - 5))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2 - 25 = (x - 5)(x + 5)$; cancel for $x \neq 5$. Limit of $(x + 5)/7$ is $10/7$.

06

Evaluate $\lim_{x \rightarrow 4} \frac{(x^2 - 16)}{(11(x - 4))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2 - 16 = (x - 4)(x + 4)$; cancel for $x \neq 4$. Limit of $(x + 4)/11$ is $8/11$.