

Calculus Chapter 2 Review with Sample Test Questions and Analysis

Lesson 265 | Calculus AB | Limits and one-sided limits • Continuity • Derivative definition and basic rules

https://www.youtube.com/watch?v=E_Kfny6BrXw

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01 Evaluate $\lim_{x \rightarrow 14} \frac{(x^2 - 196)}{(4(x - 14))}$. Explain why substitution alone is inconclusive.

02 Define $f(x) = \frac{(x^2 - 36)}{(x - 6)}$ for $x \neq 6$, and $f(6) = k + 7$. Find k for continuity.

03 Differentiate $f(x) = 13 \cdot x^7 + 11 \cdot x - 7$ on the interior of its real domain.

Calculus Chapter 2 Review with Sample Test Questions and Analysis

Lesson 265 | Calculus AB | Limits and one-sided limits • Continuity • Derivative definition and basic rules

https://www.youtube.com/watch?v=E_Kfny6BrXw

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

04

Evaluate $\lim_{x \rightarrow 8} \frac{(x^2 - 64)}{(14(x - 8))}$. Explain why substitution alone is inconclusive.

05

Define $f(x) = \frac{(x^2 - 81)}{(x - 9)}$ for $x \neq 9$, and $f(9) = k + 12$. Find k for continuity.

06

Differentiate $f(x) = 4x^3 + 2x - 14$ on the interior of its real domain.

Calculus Chapter 2 Review with Sample Test Questions and Analysis

Lesson 265 | Calculus AB | Limits and one-sided limits • Continuity • Derivative definition and basic rules

https://www.youtube.com/watch?v=E_Kfny6BrXw

Related review: exact coverage needs teacher confirmation.

01

Evaluate $\lim_{x \rightarrow 14} \frac{(x^2 - 196)}{(x - 14)}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2 - 196 = (x - 14)(x + 14)$; cancel for $x \neq 14$. Limit of $(x + 14)/4$ is 7.

02

Define $f(x) = \frac{(x^2 - 36)}{(x - 6)}$ for $x \neq 6$, and $f(6) = k + 7$. Find k for continuity.

For $x \neq 6$, $f(x) = x + 6$; limit at 6 is 12. Require $k + 7 = 12$; $k = 5$.

03

Differentiate $f(x) = 13 \cdot x^7 + 11 \cdot x - 7$ on the interior of its real domain.

Apply the power rule term by term. $f'(x) = 91 \cdot x^6 + 11$.

Calculus Chapter 2 Review with Sample Test Questions and Analysis

Lesson 265 | Calculus AB | Limits and one-sided limits • Continuity • Derivative definition and basic rules

https://www.youtube.com/watch?v=E_Kfny6BrXw

Related review: exact coverage needs teacher confirmation.

04

Evaluate $\lim_{x \rightarrow 8} \frac{(x^2 - 64)}{(14(x - 8))}$. Explain why substitution alone is inconclusive.

Direct substitution gives $0/0$. Factor $x^2 - 64 = (x - 8)(x + 8)$; cancel for $x \neq 8$. Limit of $(x + 8)/14$ is $8/7$.

05

Define $f(x) = \frac{(x^2 - 81)}{(x - 9)}$ for $x \neq 9$, and $f(9) = k + 12$. Find k for continuity.

For $x \neq 9$, $f(x) = x + 9$; limit at 9 is 18. Require $k + 12 = 18$; $k = 6$.

06

Differentiate $f(x) = 4 \cdot x^3 + 2 \cdot x - 14$ on the interior of its real domain.

Apply the power rule term by term. $f'(x) = 12 \cdot x^2 + 2$.