

Calculus 3 2 Finding Derivatives By Product and Quotient Rule

Lesson 270 | Calculus AB | Product and quotient rules

<https://www.youtube.com/watch?v=DM0ZiBn-BIw>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Differentiate $f(x) = (x^2 + 5)/(x + 11)$ on the interior of its real domain.

02

Differentiate $f(x) = (9 \cdot x + 14) \cdot \exp(12 \cdot x)$ on the interior of its real domain.

03

Differentiate $f(x) = (6 \cdot x + 4) \cdot \exp(14 \cdot x)$ on the interior of its real domain.

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04

Differentiate $f(x) = (x^2 + 3)/(x + 12)$ on the interior of its real domain.

05

Differentiate $f(x) = (14x + 11) \cdot \exp(6x)$ on the interior of its real domain.

06

Differentiate $f(x) = (6x + 4) \cdot \exp(2x)$ on the interior of its real domain.

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01

Differentiate $f(x) = (x^2 + 5)/(x + 11)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (-x^2 + 2 \cdot x \cdot (x + 11) - 5)/(x + 11)^2$.

02

Differentiate $f(x) = (9 \cdot x + 14) \cdot \exp(12 \cdot x)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (108 \cdot x + 177) \cdot \exp(12 \cdot x)$.

03

Differentiate $f(x) = (6 \cdot x + 4) \cdot \exp(14 \cdot x)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (84 \cdot x + 62) \cdot \exp(14 \cdot x)$.

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04

Differentiate $f(x) = (x^2 + 3)/(x + 12)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (-x^2 + 2 \cdot x \cdot (x + 12) - 3)/(x + 12)^2$.

05

Differentiate $f(x) = (14 \cdot x + 11) \cdot \exp(6 \cdot x)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (84 \cdot x + 80) \cdot \exp(6 \cdot x)$.

06

Differentiate $f(x) = (6 \cdot x + 4) \cdot \exp(2 \cdot x)$ on the interior of its real domain.

Use the product rule or quotient rule, then simplify. $f'(x) = (12 \cdot x + 14) \cdot \exp(2 \cdot x)$.