

Calculus 3 4 Chain Rule with Composition Functions

Lesson 285 | Calculus AB | Chain rule

<https://www.youtube.com/watch?v=P2CPwC9CKHM>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Differentiate $f(x)=16 \cdot (x^2 + 2)^2$ on the interior of its real domain.

02

Differentiate $f(x)=(13 \cdot x^2 + 10)^7$ on the interior of its real domain.

03

Differentiate $f(x)=32 \cdot (x^2 + 3)^5$ on the interior of its real domain.

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04

Differentiate $f(x)=(7 \cdot x^2 + 2)^5$ on the interior of its real domain.

05

Differentiate $f(x)=(7 \cdot x^2 + 4)^7$ on the interior of its real domain.

06

Differentiate $f(x)=(6 \cdot x^2 + 13)^7$ on the interior of its real domain.

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01

Differentiate $f(x)=16 \cdot (x^2 + 2)^2$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=64 \cdot x \cdot (x^2 + 2).$$

02

Differentiate $f(x)=(13 \cdot x^2 + 10)^7$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=182 \cdot x \cdot (13 \cdot x^2 + 10)^6.$$

03

Differentiate $f(x)=32 \cdot (x^2 + 3)^5$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=320 \cdot x \cdot (x^2 + 3)^4.$$

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04

Differentiate $f(x)=(7 \cdot x^2 + 2)^5$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=70 \cdot x \cdot (7 \cdot x^2 + 2)^4.$$

05

Differentiate $f(x)=(7 \cdot x^2 + 4)^7$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=98 \cdot x \cdot (7 \cdot x^2 + 4)^6.$$

06

Differentiate $f(x)=(6 \cdot x^2 + 13)^7$ on the interior of its real domain.

Differentiate the outer power and multiply by the derivative of the inner polynomial.

$$f'(x)=84 \cdot x \cdot (6 \cdot x^2 + 13)^6.$$