

Fundamental Theorem of Calculus Part I and Part II and Integrating Absolute Value Funct...

Lesson 298 | Calculus AB | Fundamental theorem of calculus

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

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Let $F(x) = \int_{10}^{x^2} (11t^2 + 5) dt$. Find $F'(x)$.

02

Let $F(x) = \int_{11}^{x^2} (8t^2 + 4) dt$. Find $F'(x)$.

03

Let $F(x) = \int_6^{x^2} (3t^2 + 4) dt$. Find $F'(x)$.

Fundamental Theorem of Calculus Part I and Part II and Integrating Absolute Value Funct...

Lesson 298 | Calculus AB | Fundamental theorem of calculus

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

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

04

Let $F(x) = \int_{14}^{x^2} (13t^2 + 7) dt$. Find $F'(x)$.

05

Let $F(x) = \int_8^{x^2} (9t^2 + 3) dt$. Find $F'(x)$.

06

Let $F(x) = \int_3^{x^2} (13t^2 + 6) dt$. Find $F'(x)$.

Fundamental Theorem of Calculus Part I and Part II and Integrating Absolute Value Funct...

Lesson 298 | Calculus AB | Fundamental theorem of calculus

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

Original practice aligned to the saved video title.

01

Let $F(x) = \int_{10}^{x^2} (11t^2 + 5) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (11x^4 + 5)2x = 22x^5 + 10x$.

02

Let $F(x) = \int_{11}^{x^2} (8t^2 + 4) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (8x^4 + 4)2x = 16x^5 + 8x$.

03

Let $F(x) = \int_6^{x^2} (3t^2 + 4) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (3x^4 + 4)2x = 6x^5 + 8x$.

Fundamental Theorem of Calculus Part I and Part II and Integrating Absolute Value Funct...

Lesson 298 | Calculus AB | Fundamental theorem of calculus

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

Original practice aligned to the saved video title.

04

Let $F(x) = \int_{14}^{x^2} (13t^2 + 7) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (13x^4 + 7)2x = 26x^5 + 14x$.

05

Let $F(x) = \int_8^{x^2} (9t^2 + 3) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (9x^4 + 3)2x = 18x^5 + 6x$.

06

Let $F(x) = \int_3^{x^2} (13t^2 + 6) dt$. Find $F'(x)$.

FTC with chain rule: evaluate the integrand at x^2 and multiply by $(x^2)' = 2x$.
 $F'(x) = (13x^4 + 6)2x = 26x^5 + 12x$.