

Calculus 7 4 Integration with Partial Fraction Part I

Lesson 327 | Calculus BC | Integrating partial fractions

<https://www.youtube.com/watch?v=HdwqbGfwI9k>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Find an antiderivative of $(-11x - 27)/((x + 3)(x + 6))$ for $x > 0$.

02

Find an antiderivative of $-2/(x + 7)$ for $x > 0$.

03

Find an antiderivative of $7 \cdot (x - 2)/((x + 4)(x + 11))$ for $x > 0$.

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04

Find an antiderivative of $(7 \cdot x - 4)/((x + 2) \cdot (x + 11))$ for $x > 0$.

05

Find an antiderivative of $8 \cdot (x - 2)/((x + 3) \cdot (x + 11))$ for $x > 0$.

06

Find an antiderivative of $3 \cdot (1 - x)/((x + 3) \cdot (x + 5))$ for $x > 0$.

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01

Find an antiderivative of $(-11 \cdot x - 27)/((x + 3) \cdot (x + 6))$ for $x > 0$.

Use partial fractions $2/(x+3) - 13/(x+6)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $2 \cdot \log(x + 3) - 13 \cdot \log(x + 6) + C$. Differentiate to check.

02

Find an antiderivative of $-2/(x + 7)$ for $x > 0$.

Use partial fractions $2/(x+7) - 4/(x+7)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $-2 \cdot \log(x + 7) + C$. Differentiate to check.

03

Find an antiderivative of $7 \cdot (x - 2)/((x + 4) \cdot (x + 11))$ for $x > 0$.

Use partial fractions $13/(x+11) - 6/(x+4)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $-6 \cdot \log(x + 4) + 13 \cdot \log(x + 11) + C$. Differentiate to check.

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04

Find an antiderivative of $(7 \cdot x - 4)/((x + 2) \cdot (x + 11))$ for $x > 0$.

Use partial fractions $9/(x+11) - 2/(x+2)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $-2 \cdot \log(x + 2) + 9 \cdot \log(x + 11) + C$. Differentiate to check.

05

Find an antiderivative of $8 \cdot (x - 2)/((x + 3) \cdot (x + 11))$ for $x > 0$.

Use partial fractions $13/(x+11) - 5/(x+3)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $-5 \cdot \log(x + 3) + 13 \cdot \log(x + 11) + C$. Differentiate to check.

06

Find an antiderivative of $3 \cdot (1 - x)/((x + 3) \cdot (x + 5))$ for $x > 0$.

Use partial fractions $6/(x+3) - 9/(x+5)$; integrate each reciprocal. Replace $\ln$ by $\ln|\cdot|$ for other domain intervals. An antiderivative is $6 \cdot \log(x + 3) - 9 \cdot \log(x + 5) + C$. Differentiate to check.