

Name : _____

Score : _____

Teacher : _____

Date : _____

Integration by Substitution

Find each indefinite integral.

1) $\int ((48x^2 + 400x^4)e^{2x^3 + 10x^5})dx$

2) $\int \left(\frac{96x^2 + 80}{4x^3 + 10x}\right)dx$

3) $\int \left(\frac{-e^{4+\ln 10x}}{x}\right)dx$

4) $\int ((40x^4 + 72x)e^{2x^5 + 9x^2})dx$

5) $\int ((70x^4 + 56)e^{2x^5 + 8x})dx$

6) $\int \left(\frac{10 + 8x}{10x + 4x^2}\right)dx$

7) $\int \left(\frac{7e^{1+\ln 4x}}{x}\right)dx$

8) $\int \left(\frac{200x^4 + 100x^3}{8x^5 + 5x^4}\right)dx$

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Integration by Substitution

Find each indefinite integral.

9) $\int \left(\frac{28e^{7x}}{e^{7x} + 8} \right) dx$

10) $\int \left(\frac{35e^{5x}}{e^{5x} + 4} \right) dx$

11) $\int \left(\frac{24e^{4x}}{e^{4x} + 3} \right) dx$

12) $\int \left(\frac{-64x^3 - 84x^2}{4x^4 + 7x^3} \right) dx$

13) $\int \left(\frac{2e^{7+\ln 3x}}{x} \right) dx$

14) $\int \left(\frac{12e^{2x}}{e^{2x} + 3} \right) dx$

15) $\int \left(\frac{-2e^{4+\ln 3x}}{x} \right) dx$

16) $\int \left((-6x - 90x^2)e^{x^2 + 10x^3} \right) dx$

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Integration by Substitution

Find each indefinite integral.

$$1) \int ((48x^2 + 400x^4)e^{2x^3 + 10x^5}) dx$$

$$8e^{2x^3 + 10x^5} + C$$

$$2) \int \left(\frac{96x^2 + 80}{4x^3 + 10x} \right) dx$$

$$8 \ln |4x^3 + 10x| + C$$

$$3) \int \left(\frac{-e^{4+\ln 10x}}{x} \right) dx$$

$$-e^{4+\ln 10x} + C$$

$$4) \int ((40x^4 + 72x)e^{2x^5 + 9x^2}) dx$$

$$4e^{2x^5 + 9x^2} + C$$

$$5) \int ((70x^4 + 56)e^{2x^5 + 8x}) dx$$

$$7e^{2x^5 + 8x} + C$$

$$6) \int \left(\frac{10 + 8x}{10x + 4x^2} \right) dx$$

$$\ln |10x + 4x^2| + C$$

$$7) \int \left(\frac{7e^{1+\ln 4x}}{x} \right) dx$$

$$7e^{1+\ln 4x} + C$$

$$8) \int \left(\frac{200x^4 + 100x^3}{8x^5 + 5x^4} \right) dx$$

$$5 \ln |8x^5 + 5x^4| + C$$

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Integration by Substitution

Find each indefinite integral.

9) $\int \left(\frac{28e^{7x}}{e^{7x} + 8} \right) dx$

$$4 \ln | e^{7x} + 8 | + C$$

10) $\int \left(\frac{35e^{5x}}{e^{5x} + 4} \right) dx$

$$7 \ln | e^{5x} + 4 | + C$$

11) $\int \left(\frac{24e^{4x}}{e^{4x} + 3} \right) dx$

$$6 \ln | e^{4x} + 3 | + C$$

12) $\int \left(\frac{-64x^3 - 84x^2}{4x^4 + 7x^3} \right) dx$

$$-4 \ln | 4x^4 + 7x^3 | + C$$

13) $\int \left(\frac{2e^{7+\ln 3x}}{x} \right) dx$

$$2e^{7+\ln 3x} + C$$

14) $\int \left(\frac{12e^{2x}}{e^{2x} + 3} \right) dx$

$$6 \ln | e^{2x} + 3 | + C$$

15) $\int \left(\frac{-2e^{4+\ln 3x}}{x} \right) dx$

$$-2e^{4+\ln 3x} + C$$

16) $\int \left((-6x - 90x^2)e^{x^2 + 10x^3} \right) dx$

$$-3e^{x^2 + 10x^3} + C$$