Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

1) $\int \left((192x^3 + 120x)e^{8x^4 + 10x^2}\right)dx$

$u = 8x^4 + 10x^2$

2) $\int \left(\frac{-5e^{4+\ln 7x}}{x}\right)dx$

$u = 4 + \ln 7x$

3) $\int \left(\frac{5e^{7+\ln 5x}}{x}\right)dx$

$u = 7 + \ln 5x$

4) $\int \left(\frac{2e^{9+\ln 4x}}{x}\right)dx$

$u = 9 + \ln 4x$

5) $\int \left(\frac{-5e^{4+\ln 2x}}{x}\right)dx$

$u = 4 + \ln 2x$

6) $\int \left(\frac{3e^{5+\ln 1x}}{x}\right)dx$

$u = 5 + \ln 1x$

7) $\int \left((-48x - 90x^2)e^{8x^2 + 10x^3}\right)dx$

$u = 8x^2 + 10x^3$

8) $\int \left((-96x^2 - 28)e^{8x^3 + 7x}\right)dx$

$u = 8x^3 + 7x$

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Integration by Substitution

Find each indefinite integral using the substitution provided.

9) $\int \left(\frac{-e^{5+\ln 6x}}{x}\right)dx$

$u = 5 + \ln 6x$

10) $\int \left((60x^4 + 8)e^{3x^5 + 2x}\right)dx$

$u = 3x^5 + 2x$

11) $\int \left(\frac{8e^{10+\ln 2x}}{x}\right)dx$

$u = 10 + \ln 2x$

12) $\int \left((40x^3 + 20x^4)e^{10x^4 + 4x^5}\right)dx$

$u = 10x^4 + 4x^5$

13) $\int \left((84x^3 + 28x)e^{3x^4 + 2x^2}\right)dx$

$u = 3x^4 + 2x^2$

14) $\int \left((-60x - 24)e^{10x^2 + 8x}\right)dx$

$u = 10x^2 + 8x$

15) $\int \left(\frac{-2e^{10+\ln 7x}}{x}\right)dx$

$u = 10 + \ln 7x$

16) $\int \left((75x^4 + 18x)e^{5x^5 + 3x^2}\right)dx$

$u = 5x^5 + 3x^2$

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Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

1) $\int \left((192x^3 + 120x)e^{8x^4 + 10x^2}\right)dx$

$u = 8x^4 + 10x^2$

$6e^{8x^4 + 10x^2} + C$

2) $\int \left(\frac{-5e^{4+\ln 7x}}{x}\right)dx$

$u = 4 + \ln 7x$

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

3) $\int \left(\frac{5e^{7+\ln 5x}}{x}\right)dx$

$u = 7 + \ln 5x$

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

4) $\int \left(\frac{2e^{9+\ln 4x}}{x}\right)dx$

$u = 9 + \ln 4x$

$2e^{9+\ln 4x} + C$

5) $\int \left(\frac{-5e^{4+\ln 2x}}{x}\right)dx$

$u = 4 + \ln 2x$

$-5e^{4+\ln 2x} + C$

6) $\int \left(\frac{3e^{5+\ln 1x}}{x}\right)dx$

$u = 5 + \ln 1x$

$3e^{5+\ln 1x} + C$

7) $\int \left((-48x - 90x^2)e^{8x^2 + 10x^3}\right)dx$

$u = 8x^2 + 10x^3$

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

8) $\int \left((-96x^2 - 28)e^{8x^3 + 7x}\right)dx$

$u = 8x^3 + 7x$

$-4e^{8x^3 + 7x} + C$

Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

9) $\int \left(\frac{-e^{5+\ln 6x}}{x}\right)dx$

$u = 5 + \ln 6x$

$-e^{5+\ln 6x} + C$

10) $\int \left((60x^4 + 8)e^{3x^5 + 2x}\right)dx$

$u = 3x^5 + 2x$

$4e^{3x^5 + 2x} + C$

11) $\int \left(\frac{8e^{10+\ln 2x}}{x}\right)dx$

$u = 10 + \ln 2x$

$8e^{10+\ln 2x} + C$

12) $\int \left((40x^3 + 20x^4)e^{10x^4 + 4x^5}\right)dx$

$u = 10x^4 + 4x^5$

$e^{10x^4 + 4x^5} + C$

13) $\int \left((84x^3 + 28x)e^{3x^4 + 2x^2}\right)dx$

$u = 3x^4 + 2x^2$

$7e^{3x^4 + 2x^2} + C$

14) $\int \left((-60x - 24)e^{10x^2 + 8x}\right)dx$

$u = 10x^2 + 8x$

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

15) $\int \left(\frac{-2e^{10+\ln 7x}}{x}\right)dx$

$u = 10 + \ln 7x$

$-2e^{10+\ln 7x} + C$

16) $\int \left((75x^4 + 18x)e^{5x^5 + 3x^2}\right)dx$

$u = 5x^5 + 3x^2$

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