Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

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

$u = e^{2x} + 3$

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

$u = 10 + \ln 2x$

3) $\int \left(\frac{40e^{8x}}{e^{8x} + 1}\right)dx$

$u = e^{8x} + 1$

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

$u = e^{4x} + 6$

5) $\int \left(\frac{3}{x(10 + \ln x)}\right)dx$

$u = 10 + \ln x$

6) $\int \left(\frac{56e^{8x}}{e^{8x} + 6}\right)dx$

$u = e^{8x} + 6$

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

$u = e^{10x} + 4$

8) $\int \left(\frac{7}{x(6 + \ln 2x)}\right)dx$

$u = 6 + \ln 2x$

Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

9) $\int \left(\frac{42e^{6x}}{e^{6x}+3}\right)dx$

$u = e^{6x} + 3$

10) $\int \left(\frac{7}{x(2+\ln 8x)}\right)dx$

$u = 2 + \ln 8x$

11) $\int \left(\frac{48e^{6x}}{e^{6x}+3}\right)dx$

$u = e^{6x} + 3$

12) $\int \left(\frac{6e^{2x}}{e^{2x}+9}\right)dx$

$u = e^{2x} + 9$

13) $\int \left(\frac{40e^{4x}}{e^{4x}+6}\right)dx$

$u = e^{4x} + 6$

14) $\int \left(\frac{12e^{3x}}{e^{3x}+6}\right)dx$

$u = e^{3x} + 6$

15) $\int \left(\frac{80e^{10x}}{e^{10x}+1}\right)dx$

$u = e^{10x} + 1$

16) $\int \left(\frac{9}{x(4+\ln 7x)}\right)dx$

$u = 4 + \ln 7x$

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Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

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

$u = e^{2x} + 3$

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

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

$u = 10 + \ln 2x$

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

3) $\int \left(\frac{40e^{8x}}{e^{8x} + 1}\right)dx$

$u = e^{8x} + 1$

$5\ln| e^{8x} + 1 | + C$

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

$u = e^{4x} + 6$

$2\ln| e^{4x} + 6 | + C$

5) $\int \left(\frac{3}{x(10 + \ln x)}\right)dx$

$u = 10 + \ln x$

$3\ln| 10 + \ln x | + C$

6) $\int \left(\frac{56e^{8x}}{e^{8x} + 6}\right)dx$

$u = e^{8x} + 6$

$7\ln| e^{8x} + 6 | + C$

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

$u = e^{10x} + 4$

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

8) $\int \left(\frac{7}{x(6 + \ln 2x)}\right)dx$

$u = 6 + \ln 2x$

$7\ln| 6 + \ln 2x | + C$

Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using the substitution provided.

9) $\int \left(\frac{42e^{6x}}{e^{6x}+3}\right)dx$

$u = e^{6x} + 3$

$7\ln|e^{6x}+3| + C$

10) $\int \left(\frac{7}{x(2+\ln 8x)}\right)dx$

$u = 2 + \ln 8x$

$7\ln|2+\ln 8x| + C$

11) $\int \left(\frac{48e^{6x}}{e^{6x}+3}\right)dx$

$u = e^{6x} + 3$

$8\ln|e^{6x}+3| + C$

12) $\int \left(\frac{6e^{2x}}{e^{2x}+9}\right)dx$

$u = e^{2x} + 9$

$3\ln|e^{2x}+9| + C$

13) $\int \left(\frac{40e^{4x}}{e^{4x}+6}\right)dx$

$u = e^{4x} + 6$

$10\ln|e^{4x}+6| + C$

14) $\int \left(\frac{12e^{3x}}{e^{3x}+6}\right)dx$

$u = e^{3x} + 6$

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

15) $\int \left(\frac{80e^{10x}}{e^{10x}+1}\right)dx$

$u = e^{10x} + 1$

$8\ln|e^{10x}+1| + C$

16) $\int \left(\frac{9}{x(4+\ln 7x)}\right)dx$

$u = 4 + \ln 7x$

$9\ln|4+\ln 7x| + C$