Name : _____ Score : _____

Teacher : _____ Date : _____

Integration by Substitution

Find each indefinite integral using substitution.

1) $\int ((10x)\tan(-5x^2 - 11))dx$; $u = -5x^2 - 11$

2) $\int ((-14x)\cos(7x^2 - 3))dx$; $u = 7x^2 - 3$

3) $\int \left(\frac{(12x + 12)}{\csc(-6x^2 + 12x)}\right)dx$; $u = -6x^2 + 12x$

4) $\int (-(6x + 11)\sin(3x^2 + 11x))dx$; $u = 3x^2 + 11x$

5) $\int \left(\frac{-32x}{\sec(-4x^2 - 14)}\right)dx$; $u = -4x^2 - 14$

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Integration by Substitution

Find each indefinite integral using substitution.

1) $\int ((10x)\tan(-5x^2 - 11))dx$; $u = -5x^2 - 11$

$\ln|\cos(-5x^2 - 11)| + C$

2) $\int ((-14x)\cos(7x^2 - 3))dx$; $u = 7x^2 - 3$

$-\sin(7x^2 - 3) + C$

3) $\int \left(\frac{(12x + 12)}{\csc(-6x^2 + 12x)}\right)dx$; $u = -6x^2 + 12x$

$\cos(-6x^2 + 12x) + C$

4) $\int (-(6x + 11)\sin(3x^2 + 11x))dx$; $u = 3x^2 + 11x$

$\cos(3x^2 + 11x) + C$

5) $\int \left(\frac{-32x}{\sec(-4x^2 - 14)}\right)dx$; $u = -4x^2 - 14$

$4\sin(-4x^2 - 14) + C$