Name : _____ Score : _____

Teacher : _____ Date : _____

Substitution in Indefinite Integrals

Find each indefinite integral using the substitution provided.

1) $\int \frac{6x + 18}{(-x^2 - 6x - 5)^3}$; $u = -x^2 - 6x - 5$

2) $\int \frac{10x - 30}{(x^2 - 6x + 8)^2}$; $u = x^2 - 6x + 8$

3) $\int \frac{-6x - 15}{(x^2 + 5x + 6)^2}$; $u = x^2 + 5x + 6$

4) $\int \frac{10x - 20}{(-x^2 + 4x)^3}$; $u = -x^2 + 4x$

5) $\int \frac{-4x - 4}{(-x^2 - 2x + 3)^2}$; $u = -x^2 - 2x + 3$

6) $\int \frac{4x + 4}{(-x^2 - 2x)^2}$; $u = -x^2 - 2x$

7) $\int \frac{8x + 4}{(-x^2 - x + 20)^4}$; $u = -x^2 - x + 20$

8) $\int \frac{8x}{(x^2 - 9)^4}$; $u = x^2 - 9$

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Substitution in Indefinite Integrals

Find each indefinite integral using the substitution provided.

9) $\int \frac{4x + 4}{(x^2 + 2x - 8)^2}$; $u = x^2 + 2x - 8$

10) $\int \frac{-6x + 12}{(-x^2 + 4x - 4)^4}$; $u = -x^2 + 4x - 4$

11) $\int \frac{-8x - 16}{(-x^2 - 4x - 4)^3}$; $u = -x^2 - 4x - 4$

12) $\int \frac{10x - 25}{(-x^2 + 5x - 4)^4}$; $u = -x^2 + 5x - 4$

13) $\int \frac{4x - 4}{(-x^2 + 2x + 3)^4}$; $u = -x^2 + 2x + 3$

14) $\int \frac{-8x + 20}{(x^2 - 5x)^3}$; $u = x^2 - 5x$

15) $\int \frac{10x - 10}{(x^2 - 2x - 15)^3}$; $u = x^2 - 2x - 15$

16) $\int \frac{6x - 6}{(x^2 - 2x + 1)^4}$; $u = x^2 - 2x + 1$

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Substitution in Indefinite Integrals

Find each indefinite integral using the substitution provided.

1) $\int \frac{6x + 18}{(-x^2 - 6x - 5)^3}$; $u = -x^2 - 6x - 5$

$\int \frac{-3}{u^3}\,du$

2) $\int \frac{10x - 30}{(x^2 - 6x + 8)^2}$; $u = x^2 - 6x + 8$

$\int \frac{5}{u^2}\,du$

3) $\int \frac{-6x - 15}{(x^2 + 5x + 6)^2}$; $u = x^2 + 5x + 6$

$\int \frac{-3}{u^2}\,du$

4) $\int \frac{10x - 20}{(-x^2 + 4x)^3}$; $u = -x^2 + 4x$

$\int \frac{-5}{u^3}\,du$

5) $\int \frac{-4x - 4}{(-x^2 - 2x + 3)^2}$; $u = -x^2 - 2x + 3$

$\int \frac{2}{u^2}\,du$

6) $\int \frac{4x + 4}{(-x^2 - 2x)^2}$; $u = -x^2 - 2x$

$\int \frac{-2}{u^2}\,du$

7) $\int \frac{8x + 4}{(-x^2 - x + 20)^4}$; $u = -x^2 - x + 20$

$\int \frac{-4}{u^4}\,du$

8) $\int \frac{8x}{(x^2 - 9)^4}$; $u = x^2 - 9$

$\int \frac{4}{u^4}\,du$

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Substitution in Indefinite Integrals

Find each indefinite integral using the substitution provided.

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10) $\int \frac{-6x + 12}{(-x^2 + 4x - 4)^4}$; $u = -x^2 + 4x - 4$

$\int \frac{3}{u^4}\,du$

11) $\int \frac{-8x - 16}{(-x^2 - 4x - 4)^3}$; $u = -x^2 - 4x - 4$

$\int \frac{4}{u^3}\,du$

12) $\int \frac{10x - 25}{(-x^2 + 5x - 4)^4}$; $u = -x^2 + 5x - 4$

$\int \frac{-5}{u^4}\,du$

13) $\int \frac{4x - 4}{(-x^2 + 2x + 3)^4}$; $u = -x^2 + 2x + 3$

$\int \frac{-2}{u^4}\,du$

14) $\int \frac{-8x + 20}{(x^2 - 5x)^3}$; $u = x^2 - 5x$

$\int \frac{-4}{u^3}\,du$

15) $\int \frac{10x - 10}{(x^2 - 2x - 15)^3}$; $u = x^2 - 2x - 15$

$\int \frac{5}{u^3}\,du$

16) $\int \frac{6x - 6}{(x^2 - 2x + 1)^4}$; $u = x^2 - 2x + 1$

$\int \frac{3}{u^4}\,du$