Name : _____ Score : _____

Teacher : _____ Date : _____

Substitution in Definite Integrals

Define the integral given in terms of u, but do not evaluate it.

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

2) $\int_{-3}^{-1} \frac{-5}{(x+4)^3}$; $u = x + 4$

3) $\int_{-1}^{2} \frac{6x+24}{(-x^2-8x-16)^2}$; $u = -x^2 - 8x - 16$

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

5) $\int_{1}^{4} \frac{2}{(-x-2)^4}$; $u = -x - 2$

6) $\int_{-1}^{0} \frac{-10x-10}{(-x^2-2x+8)^3}$; $u = -x^2 - 2x + 8$

7) $\int_{-1}^{0} \frac{10x+10}{(-x^2-2x+3)^4}$; $u = -x^2 - 2x + 3$

8) $\int_{8}^{9} \frac{4}{(x-5)^2}$; $u = x - 5$

Name : _____ Score : _____

Teacher : _____ Date : _____

Substitution in Definite Integrals

Define the integral given in terms of u, but do not evaluate it.

9) $\int_{-2}^{0} \frac{8x}{(x^2 - 16)^3}$; $u = x^2 - 16$

10) $\int_{2}^{3} \frac{-3}{(x - 1)^2}$; $u = x - 1$

11) $\int_{-2}^{-1} \frac{-4x - 6}{(x^2 + 3x - 4)^4}$; $u = x^2 + 3x - 4$

12) $\int_{1}^{4} \frac{10x - 15}{(x^2 - 3x)^2}$; $u = x^2 - 3x$

13) $\int_{-1}^{1} \frac{4}{(-x - 3)^3}$; $u = -x - 3$

14) $\int_{4}^{7} \frac{4}{(-x + 3)^3}$; $u = -x + 3$

15) $\int_{0}^{1} \frac{-6x + 3}{(-x^2 + x + 2)^2}$; $u = -x^2 + x + 2$

16) $\int_{5}^{7} \frac{4x - 14}{(x^2 - 7x + 12)^3}$; $u = x^2 - 7x + 12$

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Substitution in Definite Integrals

Define the integral given in terms of u, but do not evaluate it.

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

$\int_{-1}^{-3} \frac{2}{u^4}\,du$

2) $\int_{-3}^{-1} \frac{-5}{(x+4)^3}$; $u = x + 4$

$\int_{1}^{3} \frac{-5}{u^3}\,du$

3) $\int_{-1}^{2} \frac{6x+24}{(-x^2-8x-16)^2}$; $u = -x^2 - 8x - 16$

$\int_{-9}^{-36} \frac{-3}{u^2}\,du$

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

$\int_{1}^{3} \frac{3}{u^2}\,du$

5) $\int_{1}^{4} \frac{2}{(-x-2)^4}$; $u = -x - 2$

$\int_{-3}^{-6} \frac{-2}{u^4}\,du$

6) $\int_{-1}^{0} \frac{-10x-10}{(-x^2-2x+8)^3}$; $u = -x^2 - 2x + 8$

$\int_{9}^{8} \frac{5}{u^3}\,du$

7) $\int_{-1}^{0} \frac{10x+10}{(-x^2-2x+3)^4}$; $u = -x^2 - 2x + 3$

$\int_{4}^{3} \frac{-5}{u^4}\,du$

8) $\int_{8}^{9} \frac{4}{(x-5)^2}$; $u = x - 5$

$\int_{3}^{4} \frac{4}{u^2}\,du$

Name : _____ Score : _____

Teacher : _____ Date : _____

Substitution in Definite Integrals

Define the integral given in terms of u, but do not evaluate it.

9) $\int_{-2}^{0} \frac{8x}{(x^2 - 16)^3}$; $u = x^2 - 16$

$\int_{-12}^{-16} \frac{4}{u^3}\,du$

10) $\int_{2}^{3} \frac{-3}{(x - 1)^2}$; $u = x - 1$

$\int_{1}^{2} \frac{-3}{u^2}\,du$

11) $\int_{-2}^{-1} \frac{-4x - 6}{(x^2 + 3x - 4)^4}$; $u = x^2 + 3x - 4$

$\int_{-6}^{-6} \frac{-2}{u^4}\,du$

12) $\int_{1}^{4} \frac{10x - 15}{(x^2 - 3x)^2}$; $u = x^2 - 3x$

$\int_{-2}^{4} \frac{5}{u^2}\,du$

13) $\int_{-1}^{1} \frac{4}{(-x - 3)^3}$; $u = -x - 3$

$\int_{-2}^{-4} \frac{-4}{u^3}\,du$

14) $\int_{4}^{7} \frac{4}{(-x + 3)^3}$; $u = -x + 3$

$\int_{-1}^{-4} \frac{-4}{u^3}\,du$

15) $\int_{0}^{1} \frac{-6x + 3}{(-x^2 + x + 2)^2}$; $u = -x^2 + x + 2$

$\int_{2}^{2} \frac{3}{u^2}\,du$

16) $\int_{5}^{7} \frac{4x - 14}{(x^2 - 7x + 12)^3}$; $u = x^2 - 7x + 12$

$\int_{2}^{12} \frac{2}{u^3}\,du$