

Name : _____

Score : _____

Teacher : _____

Date : _____

Substitution in Definite Integrals

Evaluate each integral using u for substitution. Round to the nearest ten-thousandth.

1)
$$\int_6^9 \frac{5}{(-x+3)^2} ; u = -x + 3$$

2)
$$\int_0^3 \frac{-3}{(-x-2)^4} ; u = -x - 2$$

3)
$$\int_0^3 \frac{-8x}{(x^2-1)^3} ; u = x^2 - 1$$

4)
$$\int_1^4 \frac{8x-8}{(x^2-2x-3)^3} ; u = x^2 - 2x - 3$$

5)
$$\int_0^3 \frac{-3}{(x+3)^2} ; u = x + 3$$

6)
$$\int_0^3 \frac{4x-2}{(x^2-x-12)^3} ; u = x^2 - x - 12$$

7)
$$\int_3^4 \frac{-4x+12}{(-x^2+6x-5)^4} ; u = -x^2 + 6x - 5$$

8)
$$\int_5^7 \frac{10x-25}{(x^2-5x+6)^4} ; u = x^2 - 5x + 6$$



Name : _____

Score : _____

Teacher : _____

Date : _____

Substitution in Definite Integrals

Evaluate each integral using u for substitution. Round to the nearest ten-thousandth.

9)
$$\int_3^5 \frac{-10x + 20}{(-x^2 + 4x)^3} ; u = -x^2 + 4x$$

10)
$$\int_1^4 \frac{2}{(-x - 1)^4} ; u = -x - 1$$

11)
$$\int_3^5 \frac{3}{(x - 2)^4} ; u = x - 2$$

12)
$$\int_6^7 \frac{-3}{(x - 3)^3} ; u = x - 3$$

13)
$$\int_0^1 \frac{-4}{(x + 2)^2} ; u = x + 2$$

14)
$$\int_{-2}^1 \frac{-5}{(x + 4)^3} ; u = x + 4$$

15)
$$\int_5^8 \frac{8x - 16}{(x^2 - 4x + 4)^2} ; u = x^2 - 4x + 4$$

16)
$$\int_7^8 \frac{4x - 18}{(-x^2 + 9x - 20)^2} ; u = -x^2 + 9x - 20$$



Name : _____

Score : _____

Teacher : _____

Date : _____

Substitution in Definite Integrals

Evaluate each integral using u for substitution. Round to the nearest ten-thousandth.

1) $\int_6^9 \frac{5}{(-x+3)^2} ; u = -x + 3$

0.8333

2) $\int_0^3 \frac{-3}{(-x-2)^4} ; u = -x - 2$

-0.117

3) $\int_0^3 \frac{-8x}{(x^2-1)^3} ; u = x^2 - 1$

-1.9688

4) $\int_1^4 \frac{8x-8}{(x^2-2x-3)^3} ; u = x^2 - 2x - 3$

0.045

5) $\int_0^3 \frac{-3}{(x+3)^2} ; u = x + 3$

-0.5

6) $\int_0^3 \frac{4x-2}{(x^2-x-12)^3} ; u = x^2 - x - 12$

-0.0208

7) $\int_3^4 \frac{-4x+12}{(-x^2+6x-5)^4} ; u = -x^2 + 6x - 5$

-0.0143

8) $\int_5^7 \frac{10x-25}{(x^2-5x+6)^4} ; u = x^2 - 5x + 6$

0.0075



Name : _____

Score : _____

Teacher : _____

Date : _____

Substitution in Definite Integrals

Evaluate each integral using u for substitution. Round to the nearest ten-thousandth.

9)
$$\int_3^5 \frac{-10x + 20}{(-x^2 + 4x)^3} ; u = -x^2 + 4x$$

0.1778

10)
$$\int_1^4 \frac{2}{(-x - 1)^4} ; u = -x - 1$$

0.078

11)
$$\int_3^5 \frac{3}{(x - 2)^4} ; u = x - 2$$

0.963

12)
$$\int_6^7 \frac{-3}{(x - 3)^3} ; u = x - 3$$

-0.0729

13)
$$\int_0^1 \frac{-4}{(x + 2)^2} ; u = x + 2$$

-0.6667

14)
$$\int_{-2}^1 \frac{-5}{(x + 4)^3} ; u = x + 4$$

-0.525

15)
$$\int_5^8 \frac{8x - 16}{(x^2 - 4x + 4)^2} ; u = x^2 - 4x + 4$$

0.3333

16)
$$\int_7^8 \frac{4x - 18}{(-x^2 + 9x - 20)^2} ; u = -x^2 + 9x - 20$$

0.1667

