

Integration by Substitution Practice

Name _____

Date 9/11/2026

Identify u and du , integrate in u , substitute back, and include $+ C$.

Evaluate $\int 30x(1x^2 + 2)^4 dx$ using substitution.

Evaluate $\int 144x(4x^2 - 6)^5 dx$ using substitution.

1.

4.

Evaluate $\int 18x(1x^2 - 6)^2 dx$ using substitution.

Evaluate $\int 48x(4x^2 + 1)^2 dx$ using substitution.

2.

5.

Evaluate $\int 144x(6x^2 + 2)^5 dx$ using substitution.

Evaluate $\int 42x(1x^2 - 3)^6 dx$ using substitution.

3.

6.

Integration by Substitution Practice — Answer Key

Name _____

Date 9/11/2026

Identify u and du , integrate in u , substitute back, and include $+ C$.

Evaluate $\int 30x(1x^2 + 2)^4 dx$ using substitution.

1.

Answer: $3(1x^2 + 2)^5 + C$

Evaluate $\int 144x(4x^2 - 6)^5 dx$ using substitution.

4.

Answer: $3(4x^2 - 6)^6 + C$

Evaluate $\int 18x(1x^2 - 6)^2 dx$ using substitution.

2.

Answer: $3(1x^2 - 6)^3 + C$

Evaluate $\int 48x(4x^2 + 1)^2 dx$ using substitution.

5.

Answer: $2(4x^2 + 1)^3 + C$

Evaluate $\int 144x(6x^2 + 2)^5 dx$ using substitution.

3.

Answer: $2(6x^2 + 2)^6 + C$

Evaluate $\int 42x(1x^2 - 3)^6 dx$ using substitution.

6.

Answer: $3(1x^2 - 3)^7 + C$