

Antiderivatives 4

Find the indicated antiderivative. Check your answers.

1. Use $u = x^3$

$$\int 5x^2 \cos(x^3) dx = \frac{5}{3} \sin(x^3) + C$$

2. Use $u = x^2 + 1$

$$\int x \sin(x^2 + 1) dx = -\frac{1}{2} \cos(x^2 + 1) + C$$

3. Use $u = x^4 - 1$

$$\int 2x^3 \sec(x^4 - 1) \tan(x^4 - 1) dx = \frac{1}{2} \sec(x^4 - 1) + C$$

4. Use $u = x^3$

$$\int 3x^2 \sec^2(x^3) dx = \tan(x^3) + C$$

5. Use $u = 5x$

$$\int \csc^2(5x) dx = -\frac{1}{5} \cot(5x) + C$$

6. Use $u = 3x - 5$

$$\int e^{3x-5} dx = \frac{1}{3} e^{3x-5} + C$$

7. Use $u = x^3$

$$\int 2x^2 e^{x^3} dx = \frac{2}{3} e^{x^3} + C$$

8. Use $u = x^2 + 2x + 1$

$$\int (x + 1) e^{x^2+2x+1} dx = \frac{1}{2} e^{x^2+2x+1} + C$$

9. Use $u = \sin x$

$$\int 4 \cos x e^{\sin x} dx = 4 e^{\sin x} + C$$

10. Use $u = \tan x$

$$\int 2 \sec^2 x e^{\tan x} dx = 2 e^{\tan x} + C$$