

Antiderivatives 2

Find the antiderivative (#'s 1 - 5).

1. $\int 6\sqrt{x} - \sqrt[3]{x} \, dx$

2. $\int \frac{5 - 4x^2 + 3x^4}{x^3} \, dx$

3. $\int \frac{3}{x\sqrt{x^2 - 1}} + 7e^x \, dx$

4. $\int 2 \sec x \tan x + 3 \sin x \, dx$

5. $\int \sqrt{5} \csc^2 x + \sqrt{2} \, dx$

Find $f(x)$ (#'s 6 - 7).

6. $f'(x) = 6 \sec x \tan x + e^x$, $f(0) = 4$

7. $f''(x) = 6x - 8$, $f'(0) = 3$, $f(1) = 5$

Use the suggested substitution to find the antiderivative (#'s 8 - 10). CHECK YOUR ANSWER.

8. Use $u = 3x + 4$.

$$\int 3e^{3x+4} dx =$$

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

$$\int 2xe^{x^2+1} dx =$$

10. Use $u = x^3$.

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