

Quick Integrals

1. $\int 6 \cos(5x) dx$

2. $\int e^{7x} dx$

3. $\int \csc^2(5 - 2x) dx$

4. $\int (3x - 2)^7 dx$

5. $\int 2\sqrt{x + 4} dx$

6. $\int 5^{8x} dx$

7. $\int 14 \sec(7x) \tan(7x) dx$

8. $\int \frac{6}{2x-3} dx$

9. $\int \frac{5}{(5-x)^2} dx$

Helpful Hints u-substitution

10. $\int \left(1 + \frac{1}{x}\right)^3 \left(\frac{1}{x^2}\right) dx$ Let $u = 1 + \frac{1}{x}$

11. $\int \frac{12x^2}{x^3-2} dx$ Let $u = x^3 - 2$

12. $\int 5 \sin(-5x) \cos^4(-5x) dx$ Let $u = \cos(-5x)$

13. $\int (4x^3 - 2)e^{x^4-2x} dx$

Intermediate u-substitution

14. $\int e^{6t} \sec(e^{6t}) \tan(e^{6t}) dt$

15. $\int x^2 8^{x^3} dx$

$$16. \int \frac{e^{4x-2}}{\pi} dx \quad (\text{can be a quick integral})$$

$$17. \int \sin^3 \theta \cos \theta d\theta$$

$$18. \int (3x + 15)\sqrt{x^2 + 10x + 4} dx$$

$$19. \int \frac{\sin \theta}{(4 - \cos \theta)^3} d\theta$$

U-Substitution Definite Integrals

$$20. \int_0^{\frac{3\pi}{2}} \sin x \sqrt{\cos x} dx$$

$$21. \int_0^1 \frac{e^{-5x}}{2} dx$$

$$22. \int_1^4 3^{x+6} dx$$

$$23. \int_1^3 \frac{2x+5}{x^2+5x+2} dx$$

$$24. \int_1^2 (4x^3 - 2)e^{x^4-2x} dx$$