

## Integration By Substitution

1.  $\int (x^3 + 2)^{1/2} x^2 dx$

2.  $\int \frac{8x^3}{(x^4 + 2)^3} dx$

3.  $\int \frac{x^2 dx}{\sqrt[4]{x^3 + 5}}$

4.  $\int 3t\sqrt{1 - 2t^2} dt$

5.  $\int \frac{x + 3}{(x^2 + 6x)^{1/3}} dx$

6.  $\int (1 - x^3)^2 x^2 dx$

7.  $\int \frac{e^{\sqrt{y}}}{2\sqrt{y}} dy$

8.  $\int \frac{3x dx}{\sqrt{1 - 2x^2}}$

9.  $\int (x^2 - 2x)^5 (x - 1) dx$

10.  $\int \frac{x + 4}{(x^2 + 8x)^{2/3}} dx$

11.  $\int \frac{6t}{\sqrt{t^2 + 1}} dt$

12.  $\int \sin 4x dx$

13.  $\int (x^3 - 3x)^{1/2} (x^2 - 1) dx$

14.  $\int \frac{e^{1/z}}{z^2} dz$

15.  $\int 2\sec^2 x \tan x dx$

16.  $\int \sec 5x \tan 5x dx$

17.  $\int \csc^3 5x \cos 5x dx$

18.  $\int \sec \theta (\sec \theta + \tan \theta) d\theta$

19.  $\int \tan^3 x \sec^2 x dx$

20.  $\int \frac{\sec^2 x dx}{(1 + \tan x)^2}$

21.  $\int \frac{x^3}{e^{3x^4}} dx$

22.  $\int \frac{dx}{\tan^3 x \cos^2 x}$

23.  $\int x \cos(3x^2) dx$

24.  $\int \sec^2 \theta (\sec \theta \tan \theta) d\theta$

25.  $\int x^2 \sqrt{x + 1} dx$

26.  $\int \frac{x}{\sqrt{x - 1}} dx$

27.  $\int x^2 \sqrt{2 - x} dx$

\*28.  $\int (4x^2 - 12x + 9)^{2/3} dx$

\*29.  $\int \sqrt{1 + x^{-2/3}} dx \quad (x > 0)$

\*30.  $\int \sin^3 2\theta d\theta$