

1. $\int(4x^2 - 7x + 1)dx$ $\frac{4x^3}{3} - \frac{7x^2}{2} + x + C$	11. $\int \frac{\sqrt{x^3}}{\sqrt{x}} dx$ $\frac{x^{3/2} \cdot \frac{9}{6}}{x^{1/3}} = \frac{3}{2} x^{7/6} = \frac{6}{13} x^{13/6} + C$
2. $\int(2 - x^{15})dx$ $2x - \frac{x^{16}}{16} + C$	12. $\int \frac{x^2 + 3x - 1}{\sqrt{x}} dx$ $\frac{x^2}{x^{1/2}} + \frac{3x}{x^{1/2}} - x^{-1/2}$ $= x^{3/2} + 3x^{1/2} - x^{-1/2} = \frac{2}{5} x^{5/2} + 2x^{3/2} - 2x^{1/2} + C$
3. $\int(x + x^{-1})dx$ $\frac{x^2}{2} + \ln x + C$	13. $\int \frac{(x+2)(x-2)}{x^2 - 4} dx$ $= \frac{x^3}{3} - 4x + C$
4. $\int(\sqrt{x} + \frac{1}{\sqrt{x}})dx$ $x^{1/2} + x^{-1/2}$ $\frac{2x^{3/2}}{3} + 2x^{1/2} + C$	14. $\int(2x+1)^2 dx$ $\frac{4x^3}{3} + 2x^2 + x + C$ $4x^2 + 4x + 1$
5. $\int(6\sqrt{x^3} + \frac{5}{x^2})dx$ $6x^{3/2} + 5x^{-2}$ $\frac{6 \cdot 2}{5} x^{5/2} + \frac{5 \cdot x^{-1}}{-1}$ $\frac{12}{5} x^{5/2} - \frac{5}{x} + C$	15. $\int \frac{x^3 - 1}{x - 1} dx$ $\frac{(x-1)(x^2+x+1)}{(x-1)} = x^2 + x + 1 + C$
6. $\int(-x^{-7} + 3x^{\sqrt{2}} + 3)dx$ $\frac{-x^{-7+1}}{-7+1} + \frac{3x^{\sqrt{2}+1}}{\sqrt{2}+1} + 3x + C$	16. $\int \frac{x^2 - 5x + 6}{x - 2} dx$ $\frac{(x-2)(x-3)}{x-2} = x - 3 + C$ $\frac{x^2}{2} - 3x + C$
7. $\int(\sec x \tan x + \sec^2 x)dx$ $\sec x + \tan x + C$	17. $\int \sqrt{\pi} dx$ $\sqrt{\pi} x + C$
8. $\int \frac{e}{x} dx$ $e \cdot \frac{1}{x}$ $e \ln x + C$	18. $\int \frac{x \sin x + 1}{x} dx$ $\frac{x \sin x}{x} + \frac{1}{x}$ $-\cos x + \ln x + C$
9. $\int e^{\sqrt{2}} dx$ $e^{\sqrt{2}} \cdot x + C$	19. $\int(5^x - 4^x)dx$ $\frac{5^x}{\ln 5} - \frac{4^x}{\ln 4} + C$
10. $\int \frac{4}{\sqrt[3]{x^3}} dx$ $4x^{-3/5}$ $\frac{5 \cdot 4x^{2/5}}{2} = 10x^{2/5} + C$	20. $\int \frac{\tan x}{\sin^2 x \sec x + \cos x} dx$ $-\cos x + C$

$$\frac{\sin x}{\cos x} \cdot \cos x$$

$$\frac{\tan x}{\frac{\sin^2 x}{\cos x} + \frac{\cos x \cdot \cos x}{\cos x}} = \frac{\tan x}{\frac{\sin^2 x + \cos^2 x}{\cos x}} = \frac{\tan x}{\frac{1}{\cos x}} = \tan x \cdot \cos x = \sin x$$

From: HBJ College Outline Series Calculus, Farrand & Paxon, 1984