

1 דינגן פון פונקציען

① $\int \frac{11}{\sqrt{(7-x)^2}} dx = \frac{55}{3} \sqrt{(x-7)^3} + C$ (פונקציע $u=7-x$ נוצט)

② $\int \frac{x}{(x-1)^4} dx = \frac{3x-1}{6(x-1)^3} + C$ (פונקציע $u=x-1$ נוצט)

③ $\int (\sin x + \cos x)^2 dx = x - \frac{\cos 2x}{2} + C$ (פונקציע $u=\sin x + \cos x$ נוצט
 $\sin^2 x + \cos^2 x = 1, 2\sin x \cos x = \sin 2x$)

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

⑤ $\int \cos^2 x dx = \frac{x + \sin x \cos x}{2} + C$ ($\cos^2 x = \frac{1}{2}(1 + \cos 2x)$)

⑥ $\int e^{2x} \cos 5x dx = \frac{1}{29}(5 \sin 5x + 2 \cos 5x) + C$ ($u = \cos 5x, v = e^{2x}$)

⑦ $\int e^{3x}(x^2 - 3x) dx = \frac{1}{27}(9x^2 - 33x + 11)e^{3x} + C$ ($u = e^{3x}, v = x^2 - 3x$)

⑧ $\int \frac{x^2 - 5x}{e^{2x}} dx = -\frac{49x^2 - 231x - 33}{343e^{2x}} + C$ ($u = e^{-2x}, v = x^2 - 5x$)

⑨ $\int x^5 \ln x dx = \frac{x^6 \ln x}{6} - \frac{x^6}{36} + C$ ($u = x^5, v = \ln x$)

⑩ $\int \frac{\ln x}{x^8} dx = -\frac{\ln x}{7x^7} - \frac{1}{49x^7} + C$ ($u = x^{-8}, v = \ln x$)

⑪ $\int x^2 \ln^2 x dx = \frac{x^3}{27}(9 \ln^2 x - 6 \ln x + 2) + C$ ($u = x^2, v = \ln^2 x$)

⑫ $\int \sin(\ln x) dx = \frac{x}{2}(\sin(\ln x) - \cos(\ln x)) + C$ ($u = 1, v = \sin(\ln x)$)

⑬ $\int \arctan x dx = x \arctan x - \frac{\ln(x^2 + 1)}{2} + C$ ($u = 1, v = \arctan x$)

⑭ $\int (x^2 + 4) \sin 7x dx = \frac{1}{343}(14x \sin 7x - 49x^2 \cos 7x - 194 \cos 7x) + C$ ($u = \sin 7x, v = x^2 + 4$)