Temel Turevler ve integeraller.

$(x^2)'=2x \quad \rightarrow \int x\,dx = \frac{x^2}{2}+C$

$(x^3)'=3x^2 \quad \rightarrow \int x^2\,dx = \frac{x^3}{3}+C$

$(x^7)'=7x^6 \quad \rightarrow \int x^6\,dx = \frac{x^7}{7}+C$

$(x^n)'=nx^{n-1} \quad \rightarrow \int x^n\,dx = \frac{x^{n+1}}{n+1}+C$

$(x^{n+1})'=(n+1)x^n \quad \rightarrow \int x^n\,dx = \frac{x^{n+1}}{n+1}+C$

$(\sin x)'=\cos x \quad \rightarrow \int \cos x\,dx = \sin x + C$

$(\sin ax)'=a\cos ax \quad \rightarrow \int \cos ax\,dx = \frac{1}{a}\sin ax + C$

a= -1 koyalim.

$(\sin -x)' = -\cos -x \quad \rightarrow \int \cos -x\,dx = \frac{1}{-1}\sin -x + C$

cos-x=cos x, sin –x =-sin x

$(\cos x)' = -\sin x \quad \rightarrow \int \sin x\,dx = -\cos x + C$

$(\cos ax)' = -a\sin ax \rightarrow \int \sin ax\,dx = -\frac{1}{a}\cos ax + C$

$(e^x)' = e^x \rightarrow \int e^x\,dx = e^x + C$

$(e^{ax})' = a\,e^{ax} \rightarrow \int e^{ax}\,dx = \frac{1}{a}e^{ax} + C$

a=-1 koyalim

$(e^{-x})' = -\,e^{-x} \rightarrow \int e^{-x}\,dx = -\,e^{-x} + C$

$(\mathrm{Ln}\,x)' = \frac{1}{x} \quad \rightarrow \int \frac{1}{x}\,dx = \mathrm{Ln}\,x + C$

$(\mathrm{Ln}\,ax)' = \frac{a}{ax} = \frac{1}{x}$

$$\int \frac{1}{ax}\,dx = \frac{1}{a}\int \frac{1}{x}\,dx = \frac{1}{a}\mathrm{Ln}\,x + C$$

$(\mathrm{Ln}\,-x)' = \frac{-1}{-x} = \frac{1}{x} \quad \rightarrow \int \frac{1}{x}\,dx = \mathrm{Ln}\,|x| + C$

$(\tan x)' = \frac{1}{\cos^2 x} \quad \rightarrow \int \frac{1}{\cos^2 x}\,dx = \tan x + C$

$(\tan ax)' = \frac{a}{\cos^2 ax} \quad \rightarrow \int \frac{1}{\cos^2 ax}\,dx = \frac{1}{a}\tan ax + C$

$(\cot ax)' = -\frac{a}{\sin^2 ax} \quad \rightarrow \int \frac{1}{\sin^2 ax}\,dx = \frac{-1}{a}\cot ax$

$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}} \rightarrow \int \frac{1}{\sqrt{1-x^2}}\,dx = \arcsin x + C$

$(\arcsin ax)' = \frac{a}{\sqrt{1-(ax)^2}} \rightarrow \int \frac{1}{\sqrt{1-(ax)^2}}\,dx = \frac{1}{a}\arcsin ax$

$(\arccos x)' = \frac{-1}{\sqrt{1-x^2}} \rightarrow \int \frac{1}{\sqrt{1-x^2}}\,dx = -\arcsin x$

$(\arccos ax)' = \frac{-a}{\sqrt{1-(ax)^2}} \rightarrow \int \frac{1}{\sqrt{1-(ax)^2}}\,dx = -\frac{1}{a}\arcsin ax$

$(\arctan x)' = \frac{1}{1+x^2} \rightarrow \int \frac{1}{1+x^2}\,dx = \arctan x$

$(\arctan ax)' = \frac{a}{1+(ax)^2} \rightarrow \int \frac{1}{1+(ax)^2}\,dx = \frac{1}{a}\arctan ax$

$(q^x)' = q^x\,\mathrm{Ln}\,q \rightarrow \int q^x\,dx = \frac{1}{\mathrm{Ln}\,q}q^x + C$

$(\sinh x)' = \cosh x \quad \rightarrow \int \cosh x\,dx = \sinh x + C$

$(\cosh x)' = \sinh x \quad \rightarrow \int \sinh x\,dx = \cosh x + C$

$(\tanh x)' = \frac{1}{\cosh^2 x} \rightarrow \int \frac{1}{\cosh^2 x}\,dx = \tanh x$

$(\mathrm{arc}\cosh x)' = \frac{1}{\sqrt{x^2-1}} \rightarrow \int \frac{1}{\sqrt{x^2-1}}\,dx = \mathrm{arc}\cosh x$

$(\mathrm{arc}\sinh x)' = \frac{1}{\sqrt{x^2+1}} \rightarrow \int \frac{1}{\sqrt{x^2+1}}\,dx = \mathrm{arc}\sinh x + C$

$(\mathrm{arc}\tanh x)' = \frac{1}{x^2-1} \rightarrow \int \frac{1}{x^2-1}\,dx = \mathrm{arc}\tanh x + C$