

## Onemli Intagral ve Turev Kurallari

$$(1) \frac{d}{dx}[af(x) + bg(x)] = af'(x) + bg'(x)$$

$$(2) \frac{d}{dx}f(x) \cdot g(x) = f'(x)g(x) + f(x)g'(x)$$

$$(3) \frac{d}{dx}\frac{f(x)}{g(x)} = \frac{f'(x)g(x) - f(x)g'(x)}{g(x)^2}$$

$$(4) \frac{df}{dx}f(u(x)) = f'(u(x))u'(x)$$

$$(5) \frac{d}{dx}u^n = nu^{n-1}\frac{du}{dx}$$

$$(6) \frac{d}{dx}\sin(u) = \cos(u)\frac{du}{dx}$$

$$(7) \frac{d}{dx}\cos(u) = -\sin(u)\frac{du}{dx}$$

$$(8) * \frac{d}{dx}\tan(u) = \sec^2(u)\frac{du}{dx}$$

$$(9) * \frac{d}{dx}\cot(u) = -\csc^2(u)\frac{du}{dx}$$

$$(10) * \frac{d}{dx}\sec(u) = \sec(u)\tan(u)\frac{du}{dx}$$

$$(11) * \frac{d}{dx}\csc(u) = -\csc(u)\cot(u)\frac{du}{dx}$$

$$(12) \frac{d}{dx}e^u = e^u\frac{du}{dx}$$

$$(13) * \frac{d}{dx}b^u = \ln(b)b^u\frac{du}{dx}$$

$$(14) \frac{d}{dx}\ln(u) = \frac{1}{u}\frac{du}{dx}$$

$$(15) \frac{d}{dx}\log_b(u) = \frac{1}{\ln(b)u}\frac{du}{dx}$$

$$(16) * \frac{d}{dx}\sin^{-1}(u) = \frac{1}{\sqrt{1-u^2}}\frac{du}{dx}$$

$$(17) * \frac{d}{dx}\tan^{-1}(u) = \frac{1}{1+u^2}\frac{du}{dx}$$

$$(18) * \frac{d}{dx}\sec^{-1}(u) = \frac{1}{|u|\sqrt{u^2-1}}\frac{du}{dx}$$

$$(19) * \frac{d}{dx}\cos^{-1}(u) = \frac{-1}{\sqrt{1-u^2}}\frac{du}{dx}$$

$$(20) * \frac{d}{dx}\cot^{-1}(u) = \frac{-1}{1+u^2}\frac{du}{dx}$$

$$(21) * \frac{d}{dx}\csc^{-1}(u) = \frac{-1}{|u|\sqrt{u^2-1}}\frac{du}{dx}$$

$$(1) \int af(x) + cg(x)dx = a \int f(x)dx + b \int g(x)dx$$

$$(2) \int x^n dx = \frac{1}{n+1}x^{n+1} + C \quad (n \neq -1)$$

$$(3) \int x^{-1} dx = \ln|x| + C$$

$$(4) \int \sin(x)dx = -\cos(x) + C$$

$$(5) \int \cos(x)dx = \sin(x) + C$$

$$(6) * \int \tan(x)dx = \ln|\sec(x)| + C$$

$$(7) * \int \cot(x)dx = \ln|\sin(x)| + C$$

$$(8) * \int \sec(x)dx = \ln|\sec(x) + \tan(x)| + C$$

$$(9) * \int \csc(x)dx = -\ln|\csc(x) + \cot(x)| + C$$

$$(10) * \int \sin^2(x)dx = \frac{x - \sin(x)\cos(x)}{2} + C$$

$$(11) * \int \cos^2(x)dx = \frac{x + \sin(x)\cos(x)}{2} + C$$

$$(12) \int \sec^2(x)dx = \tan(x) + C$$

$$(13) \int \csc^2(x)dx = -\cot(x) + C$$

$$(14) * \int \tan^2(x)dx = \tan(x) - x + C$$

$$(15) * \int \cot^2(x)dx = -\cot(x) - x + C$$

$$(16) \int \frac{1}{\sqrt{1-x^2}}dx = \sin^{-1}(x) + C$$

$$(17) \int \frac{1}{|x|\sqrt{x^2-1}}dx = \sec^{-1}(x) + C$$

$$(18) \int \frac{1}{x^2+1}dx = \tan^{-1}(x) + C$$

(\*) ile işaretlenen kuralları kendiniz diğer kuralları kullanarak elde edebilirisiniz.