Temel Türev Formülleri

$\left(u=u(x)\,,\ v=v(x)\,;\ u'=\dfrac{du}{dx}\,,\ v'=\dfrac{dv}{dx}\ \text{mevcut}\right)$

1

$c'=0 \quad (c \text{ sabit})\,,$

$(cu)'=cu'\,,$

$(u\pm v)'=u'\pm v'\,,$

$(uv)'=u'v+uv'\,,$

$\left(\dfrac{u}{v}\right)'=\dfrac{u'v-uv'}{v^2}\,,$

$\dfrac{dy}{dx}=\dfrac{dy}{dt}\,\dfrac{dt}{dx}\quad\left[=\dfrac{\dfrac{dy}{dt}}{\dfrac{dx}{dt}}\right].$

2

$(u^n)'=nu^nu'\,,$

$(a^u)'=u'a^u\,\ell n\,a\,,$

$(e^u)'=u'e^u\,,$

$(\log_a u)'=\dfrac{u'}{u}\log_a e\quad\left[=\dfrac{u'}{u}\,\dfrac{1}{\ell n\,a}\right],$

$(\ell n\,u)'=\dfrac{u'}{u}\,.$

3

$(\sin u)'=(\cos u)u'\,,$

$(\cos u)'=-(\sin u)u'\,,$

$(\tan u)'=(1+\tan^2 u)u'\quad\left[=\left(\dfrac{1}{\cos^2 u}\right)u'=(\sec^2 u)u'\right],$

$(\cot u)'=-(1+\cot^2 u)u'\quad\left[=-\left(\dfrac{1}{\sin^2 u}\right)u'=-(\csc^2 u)u'\right],$

$(\arcsin u)'=\dfrac{u'}{\sqrt{1-u^2}}\,,\quad(\arccos u)'=-\dfrac{u'}{\sqrt{1-u^2}}\qquad(\,|u|<1\,),$

$(\sinh u)'=(\cosh u)u'\,,\quad(\cosh u)'=(\sinh u)u'\,,$

$(\tanh u)'=(1-\tanh^2 u)u'\,,\quad(\coth u)'=(1-\coth^2 u)u'\,.$
