Kesiniz

f(x)	$f'(x)$
18. F(x,y)= 0	$F'(x,y) = -\frac{F'_x \ (y\ sabit)}{F'_y \ (x\ sabit)}$
19. $f(x)= a^u$ $f(x)= e^u$	$f'(x)= a^u.lna.u'$ $f'(x)= e^u.u'$
20. $f(x)=log_a(u)$	$f'(x)= \frac{u'}{u.lna}$
21. f(x)=ln(u)	$f'(x)= \frac{u'}{u}$
22. $f(x)= \|u\|$	$f'(x) = \begin{cases} u' \ , & u>0 \\ \text{Türev incelenir.} & u=0 \\ -u' \ , & u<0 \end{cases}$
23. f(x)= sgn(u)	$f'(x) = \begin{cases} 0(\text{sıfır}) & , u \neq 0 \\ \text{Türevi yok} & , u=0 \end{cases}$
24. $f(x)= [\![u]\!]$	$f'(x) = \begin{cases} 0(\text{sıfır}), & u \in Z (\text{Bu noktada sürekliyse}) \\ \text{Türevi yok}, & u \in Z (\text{Bu noktada sürekli değilse}) \\ 0(\text{sıfır}), & u \notin Z \end{cases}$
25. $f(x)= u^v$	$f'(x)=u^v.(v.lnu)'=u^v(v'.lnu+v.\frac{u'}{u})$
26. x=u(t) y=v(t)	$\frac{dy}{dx} = \frac{dy/dt}{dx/dt}$
27. x=u 'ya bağlı u=y 'ye bağlı y=t 'ye bağlı ise	$\frac{dx}{dt} = \frac{dx}{du}.\frac{du}{dy}.\frac{dy}{dt}$

Kesiniz

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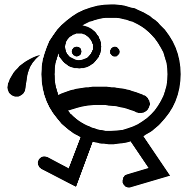
[TÜREV ALMA KURALLARI]



ÜMİDİNİ KAYBETMİŞ İNSANIN BAŞKA KAYBEDECEĞİ BİR ŞEYİ KALMAZ.

Hazırlayan
Salih YILDIZ *Matematik Eğitim Uzmanı*

Kesiniz

Kesiniz

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Kesiniz

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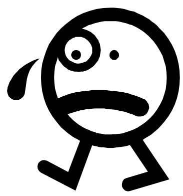

ÜMİDİNİ KAYBETMİŞ İNSANIN BAŞKA KAYBEDECEĞİ BİR ŞEYİ KALMAZ.

Hazırlayan
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Matematik Eğitim Uzmanı

f(x)	f'(x)
$\lim\limits_{x\to x_0}\frac{f(x)-f(x_0)}{x-x_0}=f'(x_0)$	$\lim\limits_{h\to 0}\frac{f(x_0+h)-f(x_0)}{h}=f'(x_0)$
$\lim\limits_{x\to x_0}\frac{f(x)-f(x_0)}{x_0-x}=-f'(x_0)$	$\lim\limits_{h\to 0}\frac{f(x_0)-f(x_0+h)}{h}=-f'(x_0)$
$\lim\limits_{h\to 0}\frac{f(x_0+a.h)-f(x_0)}{b.h}=\frac{a}{b}.f'(x_0)$	$\lim\limits_{x\to x_0}\frac{f^2(x)-f^2(x_0)}{x-x_0}=[f^2(x_0)]'$
1. $f(x)=a$ $(a\in R)$ $f(x)=a.x$	$f'(x)=0$ $f'(x)=a$
2. $f(x)=a.u^n$	$f'(x)=a.n.u^{n-1}.u'$
3. $f(x)=f\pm g$	$f'(x)=f'\pm g'$
4. $f(x)=f.g$	$f'(x)=f'.g+f.g'$
5. $f(x)=\frac{f}{g}$	$f'(x)=\frac{f'.g-f.g'}{g^2}$
6. $f(x)=\sqrt{u}$	$f'(x)=\frac{u'}{2\sqrt{u}}$
7. $f(x)=\sqrt[n]{u}$	$f'(x)=\frac{u'}{n.\sqrt[n]{u^{n-1}}}$

f(x)	f'(x)
8. $f(x)=\sin(u)$ $f(x)=\cos(u)$	$f'(x)=\cos(u).u'$ $f'(x)=-\sin(u).u'$
9. $f(x)=\tan(u)$ $f(x)=\cot(u)$	$f'(x)=(1+\tan^2(u)).u'=\sec^2(u).u'$ $f'(x)=-(1+\cot^2(u)).u'=-\mathrm{cosec}^2(u).u'$
10. $f(x)=\sec(u)$ $f(x)=\mathrm{cosec}(u)$	$f'(x)=\sec(u).\tan(u).u'$ $f'(x)=-\mathrm{cosec}(u).\cot(u).u'$
11. $f(x)=\arcsin(u)$	$f'(x)=\frac{u'}{\sqrt{1-u^2}}$
12. $f(x)=\arccos(u)$	$f'(x)=\frac{-u'}{\sqrt{1-u^2}}$
13. $f(x)=\arctan(u)$	$f'(x)=\frac{u'}{1+u^2}$
14. $f(x)=\mathrm{arccot}(u)$	$f'(x)=\frac{-u'}{1+u^2}$
15. $(fog)(u)$ $f(u)=g(x)$	$(fog)'(u)=f'(g(u)).\,g'(u).u'$ $f'(u).u'=g'(x)$
16. $f^n(u)$ $\sin^n(u)$	$[f^n(u)]'=n.f^{n-1}(u).f'(u).u'$ $[\sin^n(u)]'=n.\sin^{n-1}(u).\cos(u).u'$
17. $f(x)=ax+b$	$(f^{-1})'(y_0)=\frac{1}{f'(x_0)}$ $[\,y_0=ax_0+b\rightarrow x_0=?\,]$

f(x)	f'(x)
$\lim\limits_{x\to x_0}\frac{f(x)-f(x_0)}{x-x_0}=f'(x_0)$	$\lim\limits_{h\to 0}\frac{f(x_0+h)-f(x_0)}{h}=f'(x_0)$
$\lim\limits_{x\to x_0}\frac{f(x)-f(x_0)}{x_0-x}=-f'(x_0)$	$\lim\limits_{h\to 0}\frac{f(x_0)-f(x_0+h)}{h}=-f'(x_0)$
$\lim\limits_{h\to 0}\frac{f(x_0+a.h)-f(x_0)}{b.h}=\frac{a}{b}.f'(x_0)$	$\lim\limits_{x\to x_0}\frac{f^2(x)-f^2(x_0)}{x-x_0}=[f^2(x_0)]'$
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3. $f(x)=f\pm g$	$f'(x)=f'\pm g'$
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6. $f(x)=\sqrt{u}$	$f'(x)=\frac{u'}{2\sqrt{u}}$
7. $f(x)=\sqrt[n]{u}$	$f'(x)=\frac{u'}{n.\sqrt[n]{u^{n-1}}}$

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f(x)	f'(x)
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9. $f(x)=\tan(u)$ $f(x)=\cot(u)$	$f'(x)=(1+\tan^2(u)).u'=\sec^2(u).u'$ $f'(x)=-(1+\cot^2(u)).u'=-\mathrm{cosec}^2(u).u'$
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