REGULI DE DERIVARE

1. $\left(f+g\right)^{'}=f^{'}+g^{'}$

2. $\left(c\cdot f\right)^{'}=c\cdot f^{'}$

3. $\left(f\cdot g\right)^{'}=f^{'}\cdot g+f\cdot g^{'}$

4. $\left(\dfrac{f}{g}\right)^{'}=\dfrac{f^{'}\cdot g-f\cdot g^{'}}{g^{2}}$

5. $\left(f\circ u\right)^{'}=f^{'}\left(u\right)\cdot u^{'}$

Funcţia	Derivata	Mulţimea pe care funcţia este derivabilă	Funcţia compusă	Derivata
C (constantă)	0	$\mathbb{R}$	-	-
x	1	$\mathbb{R}$	u	$u^{'}$
x^{n}	$n\cdot x^{n-1}$	$\mathbb{R}$	u^{n}	$n\cdot u^{n-1}\cdot u^{'}$
x^{r}	$r\cdot x^{r-1}$	$\left(0;+\infty\right)$	u^{r}	$r\cdot u^{r-1}\cdot u^{'}$
$\sqrt{x}$	$\dfrac{1}{2\sqrt{x}}$	$\left(0;+\infty\right)$	$\sqrt{u}$	$\dfrac{1}{2\sqrt{u}}u^{'}$
$\ln x$	$\dfrac{1}{x}$	$\left(0;+\infty\right)$	$\ln u(u>0)$	$\dfrac{1}{u}u^{'}$
e^{x}	e^{x}	$\mathbb{R}$	e^{u}	$e^{u}\cdot u^{'}$
$a^{x}(a>0;a\neq1)$	$a^{x}\cdot\ln a$	$\mathbb{R}$	$a^{u}(a>0;a\neq1)$	$a^{u}\cdot\ln a\cdot u^{'}$
$\sin x$	$\cos x$	$\mathbb{R}$	$\sin u$	$(\cos u)\cdot u^{'}$
$\cos x$	$-\sin x$	$\mathbb{R}$	$\cos u$	$(-\sin u)\cdot u^{'}$
tgx	$\dfrac{1}{\cos^{2}x}$	$\mathbb{R}-\left\{\dfrac{\pi}{2}+k\pi\,/\,k\in\mathbb{Z}\right\}$	tgu	$\dfrac{1}{\cos^{2}u}\cdot u^{'}$
$ctgx$	$-\dfrac{1}{\sin^{2}x}$	$\mathbb{R}-\left\{k\pi\,/\,k\in\mathbb{Z}\right\}$	$ctgu$	$-\dfrac{1}{\sin^{2}u}\cdot u^{'}$
$\arcsin x$	$\dfrac{1}{\sqrt{1-x^{2}}}$	$\left(-1;1\right)$	$\arcsin u$	$\dfrac{1}{\sqrt{1-u^{2}}}\cdot u^{'}$
$\arccos x$	$-\dfrac{1}{\sqrt{1-x^{2}}}$	$\left(-1;1\right)$	$\arccos u$	$-\dfrac{1}{\sqrt{1-u^{2}}}\cdot u^{'}$
$arctgx$	$\dfrac{1}{1+x^{2}}$	$\mathbb{R}$	$arctgu$	$\dfrac{1}{1+u^{2}}\cdot u^{'}$
$arcctgx$	$-\dfrac{1}{1+x^{2}}$	$\mathbb{R}$	$arcctgu$	$-\dfrac{1}{1+u^{2}}\cdot u^{'}$