

ELEMENETE DE ANALIZĂ MATEMATICĂ CLASA a XI – a

Derivatele funcțiilor elementare

Nr. Crt.	Derivate simple	Derivate compuse
1	$c' = 0$	
2	$x' = 1$	
3	$(x^n)' = nx^{n-1}$	$(u(x)^n)' = n \cdot u(x)^{n-1} \cdot (u(x))'$
4	$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$	$(\sqrt{u(x)})' = \frac{1}{2\sqrt{u(x)}} \cdot (u(x))'$
5	$(\sqrt[3]{x})' = \frac{1}{3\sqrt[3]{x^2}}$	$(\sqrt[3]{u(x)})' = \frac{1}{3\sqrt[3]{(u(x))^2}} \cdot (u(x))'$
6	$(\sqrt[n]{x})' = \frac{1}{n\sqrt[n]{x^{n-1}}}$	$(\sqrt[n]{u(x)})' = \frac{1}{n\sqrt[n]{(u(x))^{n-1}}} \cdot (u(x))'$
7	$(a^x)' = a^x \ln a$	$(a^{u(x)})' = a^{u(x)} \ln a \cdot (u(x))'$
8	$(e^x)' = e^x$	$(e^{u(x)})' = e^{u(x)} \cdot (u(x))'$
9	$(\ln x)' = \frac{1}{x}$	$(\ln u(x))' = \frac{1}{u(x)} \cdot (u(x))'$
10	$(\log_a x)' = \frac{1}{x \ln a}$	$(\log_a u(x))' = \frac{1}{u(x) \ln a} \cdot (u(x))'$
11	$(\sin x)' = \cos x$	$(\sin u(x))' = \cos u(x) \cdot (u(x))'$
12	$(\cos x)' = -\sin x$	$(\cos u(x))' = -\sin u(x) \cdot (u(x))'$
13	$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$	$(\operatorname{tg} u(x))' = \frac{1}{\cos^2 u(x)} \cdot (u(x))'$
14	$(\operatorname{ctg} x)' = -\frac{1}{\sin^2 x}$	$(\operatorname{ctg} u(x))' = -\frac{1}{\sin^2 u(x)} \cdot (u(x))'$
15	$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$	$(\arcsin u(x))' = \frac{1}{\sqrt{1-u(x)^2}} \cdot (u(x))'$
16	$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$	$(\arccos u(x))' = -\frac{1}{\sqrt{1-u(x)^2}} \cdot (u(x))'$
17	$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$	$(\operatorname{arctg} u(x))' = \frac{1}{1+u(x)^2} \cdot (u(x))'$
18	$(\operatorname{arcctg} x)' = -\frac{1}{1+x^2}$	$(\operatorname{arcctg} u(x))' = -\frac{1}{1+u(x)^2} \cdot (u(x))'$