Corso di laurea in Geologia
Istituzioni di matematiche
Esercizi n. 1617/2/2

Calcolare le derivate delle seguenti funzioni (a fianco sono scritte le risposte):

$\sin(x^3+2x+1)$	[R.: $(3x^2+2)cos(x^3+2x+1)$]
$\sin^3(x^2)$	$\left[\text{R.: } 6x\sin^2(x^2)\cos(x^2)\right]$
$x^{\log(x)}$	$\left[\text{R.: } \left(x^{\log(x)}\log(x)\right)/x\right]$
$\cos(\sin(x^2+1))$	$\left[\text{R.: } -2\sin\left(\sin\left(x^2+1\right)\right)\cos\left(x^2+1\right)x\right]$
$\log\left(\dfrac{x+3}{x^2+5}\right)$	$\left[\text{R.: } \dfrac{-x^2-6x+5}{(x+3(x^2+5)}\right]$
$\log(\tan(x))$	$\left[\text{R.: } \tan(x)+\dfrac{1}{\tan(x)}\right]$
$1-\log(\cos(x))$	[R.: $\tan(x)$]
$\sin\left(\dfrac{x}{x+3}\right)$	$\left[\text{R.: } \dfrac{3}{(x+3)^2}\cos\left(\dfrac{x}{x+3}\right)\right]$
e^{x^3+4x+2}	$\left[\text{R.: } (3x^2+4)e^{x^3+4x+2}\right]$
$e^{\cos(x)}$	$\left[\text{R.: } -\sin(x)e^{\cos(x)}\right]$
$\sin(x)e^x-\cos(x)e^x$	[R.: $2\sin(x)e^x$]
$\sin(e^{x^2})$	$\left[\text{R.: } 2xe^{x^2}\cos\left(e^{x^2}\right)\right]$
$\tan\left(\dfrac{x+1}{x}\right)$	$\left[\text{R.: } \dfrac{-1}{x^2}\left(1+\tan\left(\dfrac{x+1}{x}\right)^2\right)\right]$
$\arcsin(x^2)$	$\left[\text{R.: } \dfrac{2x}{\sqrt{1-x^4}}\right]$
$\arctan(x^2)$	$\left[\text{R.: } \dfrac{2x}{x^4+1}\right]$
$\sqrt{x^3-4}$	$\left[\text{R.: } \dfrac{3\,x^2}{2\sqrt{x^3-4}}\right]$
$\sqrt{\log(x)+1}$	$\left[\text{R.: } \dfrac{1}{2\,x\sqrt{\log(x)+1}}\right]$