ReMATH - Análise Matemática I

2º Semestre 2014/15

Cálculo de derivadas

1. Sem se preocupar com o domínio de validade, calcule a primeira derivada das funções:

1.1 $3e^{3x^2-1}$

1.2 10^{1-x^2}

1.3 e^{e^x}

1.4 $\log(3x^2-1)$

1.5 $\log_2(x^2)$

1.6 $\log(\log(x))$

1.7 $\sqrt{x^2+2}$

1.8 $\sqrt[3]{\cos(x)}$

1.9 $\sqrt{(x^2+x+1)^3}$

1.10 $\frac{3x+1}{x-2}$

1.11 $\sqrt{\frac{x+1}{x+2}}$

1.12 $\frac{x}{\sqrt{x^2+1}}$

1.13 $(x^3+4x)^7$

1.14 $(\frac{1+2x}{1-x})^2$

1.15 $\frac{1}{(1+t^3)^4}$

1.16 $\sin(2x+1)$

1.17 $\sin^2(x)$

1.18 $\sin(x^2)$

1.19 $\tan(2x+3)$

1.20 $\operatorname{cotan}(2x)$

1.21 $\frac{1}{1+\tan^2(x)}$

1.22 $\sin(\cos(x))$

1.23 $\cos(\sin(x))$

1.24 $\sin\left(\frac{x^2}{\cos(x^2)}\right)$

1.25 $\arctan(2x+3)$

1.26 $\arcsin(x^2-1)$

1.27 $\arccos(\sqrt{x})$

1.28 $\sqrt[3]{1+\arctan(x)}$

1.29 $\frac{(2x-5)^4}{(8x^2-5)^3}$

1.30 xe^{-x^2}

1.31 $e^{-\pi x}\sin(\pi x)$

1.32 $e^{x^2\cos(\frac{1}{x^2})}$

1.33 $\frac{e^{2x}}{e^x+e^{-x}}$

1.34 $3^{\cos(\pi x)}$

1.35 $(1+\cos^2(x))^6$

1.36 $x\sin(\frac{1}{x})$

1.37 $e^{\pi\tan(\sqrt{x})}$

1.38 $\operatorname{cotan}^2(\sin(x))$

1.39 $\sin(\sin(\sin(x)))$

1.40 $\sqrt{x+\sqrt{x}}$

1.41 $\sin(\tan(\sqrt{\sin(x)})$