

Lista Extra: Regra da Cadeia

1. Derive:

a)  $y = \left( \frac{2x}{x^3+1} \right)^7$

b)  $y = \sin(\sin(\sin x))$

c)  $y = \sqrt[4]{1 + \operatorname{tg} u}$

d)  $y = (2t-8)^5 \cdot (6t+3)^{-2}$

e)  $y = \log_3(e^{-x} \cdot \cos(\pi x))$

f)  $y = (\ln x)^{\cot x}$

g)  $y = \ln(\cos^5(3x^4))$

h)  $y = 10 \cdot (1 + (2 - (6 + 7x^4)^9)^3)^5$

i)  $y = \operatorname{arctg}(e^{x^3} + \log_5 x)$

j)  $y = \operatorname{arccosec}(2024^x)$

k)  $y = \ln(\ln(\ln(\sec x)))$

l)  $y = \operatorname{arcsen}(x^3 + 3^x)$

m)  $y = \sec(\sqrt{1+\sqrt{x}})$

n)  $y = \frac{e^{\sin(x)}}{x^x}$

o)  $y = \left( \frac{x^5+8}{x^8-5} \right)^{\frac{1}{8}}$

p)  $y = 2^{\operatorname{cosec}(x^3)} \cdot (\ln(x^3) + 3^x)$

q)  $x^y = y^x \Rightarrow y' = ?$

r)  $y = e^x \cdot \sinh x$

s)  $y = \operatorname{arcsinh}(x)$

t)  $y = \frac{\sin(\operatorname{tg}(\sqrt{\cos x}))}{2^{\sin x} + a^3}$