Math 121 HW #10

Section 4.5 2, 8, 13, 19, 39

#2 $\frac{d}{dx}\ln(-4x) = \frac{1}{-4x}\cdot -4 = \frac{1}{x}$

#8 $\frac{d}{dx}\ln\sqrt{2x+1} = \frac{1}{\sqrt{2x+1}}\cdot \frac{1}{2}(2x+1)^{-1/2}\cdot 2 = \frac{1}{2x+1}$

#13 $\frac{d}{dt}t^2\ln|t| = t^2\cdot\frac{1}{t} + \ln|t|\cdot 2t$

$= t + 2t\ln|t|$

#19 $\frac{d}{dx}\frac{3x^2}{\ln x} = \frac{\ln x\cdot 6x - 3x^2\cdot\frac{1}{x}}{(\ln x)^2}$

#39 $\frac{d}{dy}10^y\log y = 10^y\cdot\frac{1}{y\cdot\ln 10} + \log y\cdot 10^y\cdot\ln 10$