

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. Find the following derivatives. You do not have to simplify your answer

(a) $y = -3e^{3x^2+5}$

(b) $y = x^2e^{-2x}$

(c) $y = \ln|-8x^3 + 2x|$

(d) $f(x) = \frac{e^{2x+1}}{\ln(x^2)}$

(e) $f(x) = \ln(x^2 + 1)$

(f) $f(x) = e^{2x^2+4x}$

(g) $f(x) = \ln\left(\frac{(3x+1)^4}{x^4+5x+7}\right)$ (hint: rewrite the expression first)