Pledge:

I. Find the indicated derivatives. <u>You are NOT required to simplify your answers</u>. (4 points each, 16 total)

(a) $f(t) = \dfrac{t}{\left(t^3 + 1\right)^4}$

$f'(t) =$

(b) $g(w) = \sin^3 w^8 - w + 1$

$\dfrac{d}{dw} g(w) =$

(c) $l(x) = \sqrt[3]{x + \tan(2x)}$

$l'(x) =$

(d) $p(y) = e^{-4y} \cos(7y)$

$\dfrac{dp}{dy} =$

II. Below you are given the graph of $5x^2 - xy + 5y^2 = 11$. Find the equation of and accurately graph the tangent line to the graph at $(x, y) = (1, -1)$.

Hint: First find the slope via implicit differentiation. (4 points)