Logarithmic differentiation

3.12.1

Find $\frac{dy}{dx}$. Do not simplify.

(a) $y = (x^4 + 1)^{5x}$

(b) $y = x^{\cos 3x} + 7^{x^2},\ x > 0$

(c) $y = (\ln x)^{\ln x},\ x > 1$

(d) $y = \dfrac{\sqrt[3]{x - \tan x}(1 + 2x^3)^5}{\sqrt{1 + x^2}}$