(1) [2 points] Find the derivative of $y = e^{x \cos x}$.

(2) [4 points] Find an equation of the tangent line to $y = \ln(\ln x)$ at the point $(e, 0)$.

(3) [4 points] Use logarithmic differentiation to find the derivative of $y = (\tan x)^{1/x}$.

(4) [**5 points**] The altitude of a triangle is increasing at a rate of 1 cm/min while the area of the triangle is increasing at a rate of 2 cm^2/min. At what rate is the base of the triangle changing when the altitude is 10 cm and the area is 100 cm^2?