Problem statement Consider the function $F(x, y) = x^3 + ye^{x-2}$; note that $F(2, 1) = 9$.

a) Find the equation of the tangent plane to the graph of F (the surface $z = F(x, y)$) at the point $(2, 1, 9)$, and find the equation of the line in which this plane intersects the xy-plane.

b) Find the equation of the tangent to the level curve $F(x, y) = 9$ at the point $(2, 1)$.

c) Show that the lines found in a) and b) are parallel. Is this an accident? Explain.