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Find the slope of the tangent to the surface given below at the point (2,-1)

1) Given function: f(x,y) = 3x+3y-4

2) Differentiate with respect to x : $f_x(x, y) = 3$. As you can see in the picture below, we have to differentiate with respect to x because we're in a plane parallel to the xz plane. In this plane y does not change.

3) Now we evaluate the derivative at the point (2,-1): $f_x(2, -1) = 3$

4) We can say that the slope of the tangent line at the point (2,-1) in the plane y=-1 is 3. This plane is parallel to the xz plane.

5) In the picture below, you can see the plane y=-1, and the line in this plane.