WRITE YOUR NAME:

MAC 2313 Quiz 13
Thursday March 7th

Find an equation of the tangent plane to the surface

$$z = e^{x-1} \cos y + e^y \cos(x - 1)$$

at the point $(x, y, z) = (1, 0, 2)$.

$$z_x = e^{x-1} \cos y + e^y \cdot (-\sin(x-1))$$

$$z_x(1,0) = e^0 \cos 0 + e^0 \cdot (-\sin 0) = 1$$

$$z_y = e^{x-1} \cdot (-\sin y) + e^y \cos(x-1)$$

$$z_y(1,0) = e^0 \cdot (-\sin 0) + e^0 \cos 0 = 1$$

$$z - 2 = z_x(1,0) \cdot (x-1) + z_y(1,0) \cdot (y-0)$$

$$z - 2 = 1(x-1) + 1(y-0)$$

or $z - 2 = x - 1 + y$

or $z = x + y + 1$ or $x + y - z = -1$