

1. Use implicit differentiation to find  $\frac{\partial z}{\partial x}$  and  $\frac{\partial z}{\partial y}$ :

(a)  $xyz - 4y^2z^2 + \cos(xy) = 0$

(b)  $3e^{xyz} - 4xz^2 + x \cos(y) = 2$

2. Find an equation for the plane tangent to the surface

$$xyz - 4y^2z^2 + \cos(xy) = 0$$

at the point  $(0, 2, \frac{1}{4})$ .

*Note that this is the first surface you worked with in #1.*