

Show all work. 5 points each.

1. Find all second partials $(\frac{\partial^2 z}{\partial y^2}, \frac{\partial^2 z}{\partial x^2}, \frac{\partial^2 z}{\partial yx} = \frac{\partial^2 z}{\partial xy})$ of $z = \frac{x}{x+y}$.

2. Find the equation of the tangent plane to the surface $z = y \cos(x - y)$ at the point $(2, 2, 2)$.