$x^2 - xy + xz - 2x - 3y^2 - 3yz + 2y - z^2 - 3z = 0$

Point: $(2, 2, 2)$

For $\frac{\partial z}{\partial x}$:

$$x^2 - xy + xz - 2x - 3y^2 - 3yz + 2y - z^2 - 3z = 0$$

$$\frac{\partial}{\partial x}(x^2 - xy + xz - 2x - 3y^2 - 3yz + 2y - z^2 - 3z) = 0$$

$$2x - y + z + x\frac{\partial z}{\partial x} - 2 - 3y\frac{\partial z}{\partial x} - 2z\frac{\partial z}{\partial x} - 3\frac{\partial z}{\partial x} = 0$$

$$(x - 3y - 2z - 3)\frac{\partial z}{\partial x} = -2x + y - z + 2$$

$$(3y + 2z + 3 - x)\frac{\partial z}{\partial x} = 2x - y + z - 2$$

$$\frac{\partial z}{\partial x} = \frac{2x - y + z - 2}{3y + 2z + 3 - x}$$

At point (2,2,2):

$$\frac{\partial z}{\partial x} = \frac{4 - 2 + 2 - 2}{6 + 4 + 3 - 2} = \frac{2}{11}$$

For $\frac{\partial z}{\partial y}$:

$$x^2 - xy + xz - 2x - 3y^2 - 3yz + 2y - z^2 - 3z = 0$$

$$\frac{\partial}{\partial y}(x^2 - xy + xz - 2x - 3y^2 - 3yz + 2y - z^2 - 3z) = 0$$

$$-x + x\frac{\partial z}{\partial y} - 6y - 3z - 3y\frac{\partial z}{\partial y} + 2 - 2z\frac{\partial z}{\partial y} - 3\frac{\partial z}{\partial y} = 0$$

$$-\frac{\partial z}{\partial y}(3y + 2z + 3 - x) = x + 6y + 3z - 2$$

$$\frac{\partial z}{\partial y} = -\frac{x + 6y + 3z - 2}{3y + 2z + 3 - x}$$

At point (2,2,2):

$$\frac{\partial z}{\partial y} = -\frac{2 + 12 + 6 - 2}{6 + 4 + 3 - 2} = -\frac{18}{11}$$