1. $f = x^3 + x^2 y^3 + 2 z^3 y^2 + z^3 = 5$

$\nabla f = \langle 3x^2 + 2xy^3, 3x^2 y^2 + 8 z^3 y^3, 6z^2 y^4 + 3z^2 \rangle$

$\nabla f (1.1,1) = \langle 5, 11, 9 \rangle$

$\langle x-1, y-1, z-1 \rangle \cdot \langle 5, 11, 9 \rangle = 0 \implies$

$5x + 11y + 9z = 25$

2. $g = 4x + e^{2xy} + y^2 - z = 0$

$\nabla g = \langle 4 + 2ye^{2xy}, 2xe^{2xy} + 2y, -1 \rangle$

$\nabla g (0, 2, 5) = \langle 8, 4, -1 \rangle$

$$\begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 8t \\ 2+4t \\ 5-t \end{pmatrix}.$$