

$$x^5 + y^4 + z^5 = 9xyz, \text{ so}$$

let $F(x, y, z) = x^5 + y^4 + z^5 - 9xyz = 0$. Then by Equations 7

$$\frac{\partial z}{\partial x} = -\frac{F_x}{F_z} = -\frac{5x^4 - 9yz}{5z^4 - 9xy} = \frac{9yz - 5x^4}{5z^4 - 9xy} \quad \text{and}$$

$$\frac{\partial z}{\partial y} = -\frac{F_y}{F_z} = -\frac{4y^3 - 9xz}{5z^4 - 9xy} = \frac{9xz - 4y^3}{5z^4 - 9xy}.$$