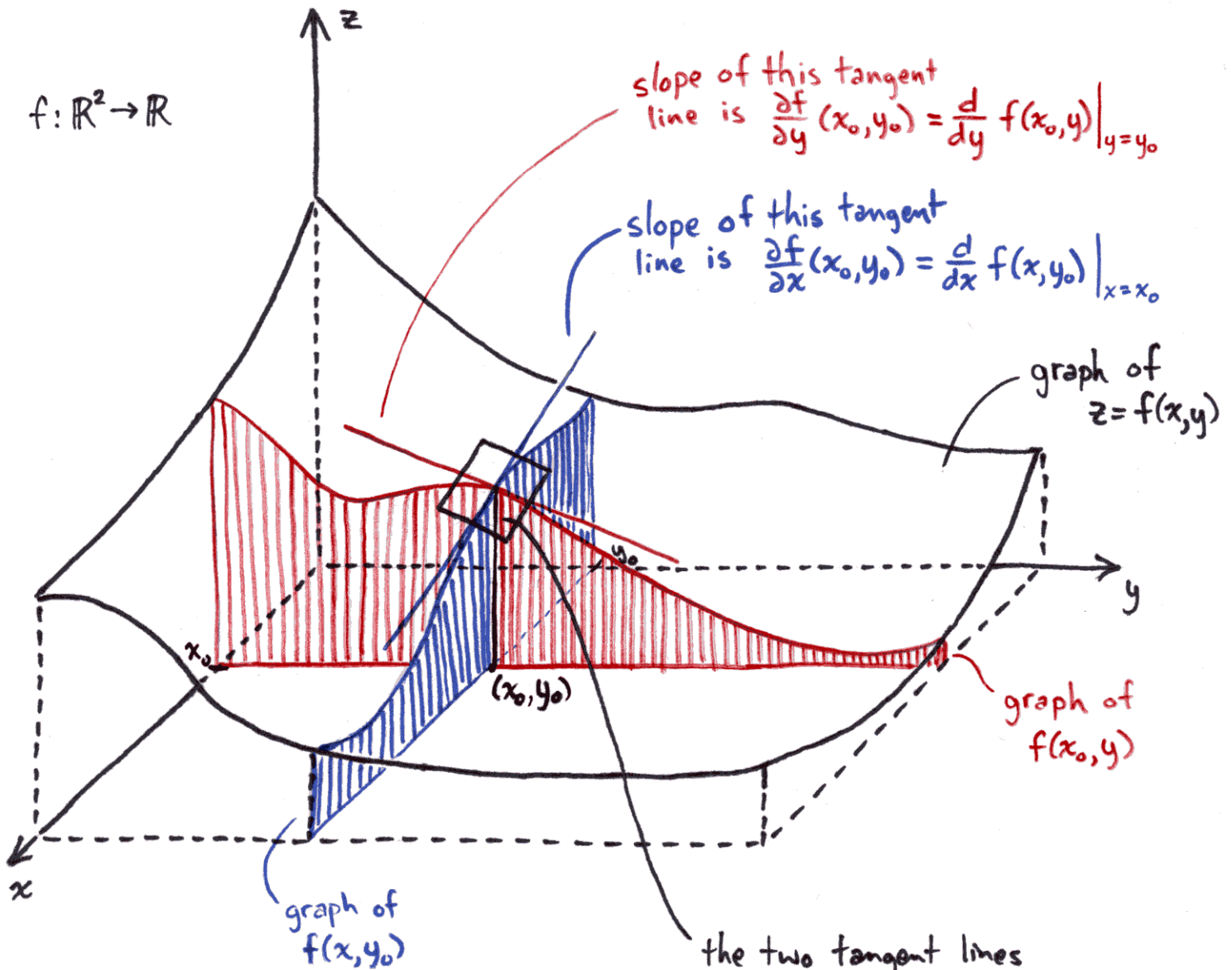


Geometry of Derivatives

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the two tangent lines determine the tangent plane to the graph at $(x_0, y_0, f(x_0, y_0))$:

$$z = f(x_0, y_0) + \left[\frac{\partial f}{\partial x}(x_0, y_0) \quad \frac{\partial f}{\partial y}(x_0, y_0) \right] \begin{bmatrix} x - x_0 \\ y - y_0 \end{bmatrix}$$

the "derivative"
 $Df(x_0, y_0)$