

Gradient Descent

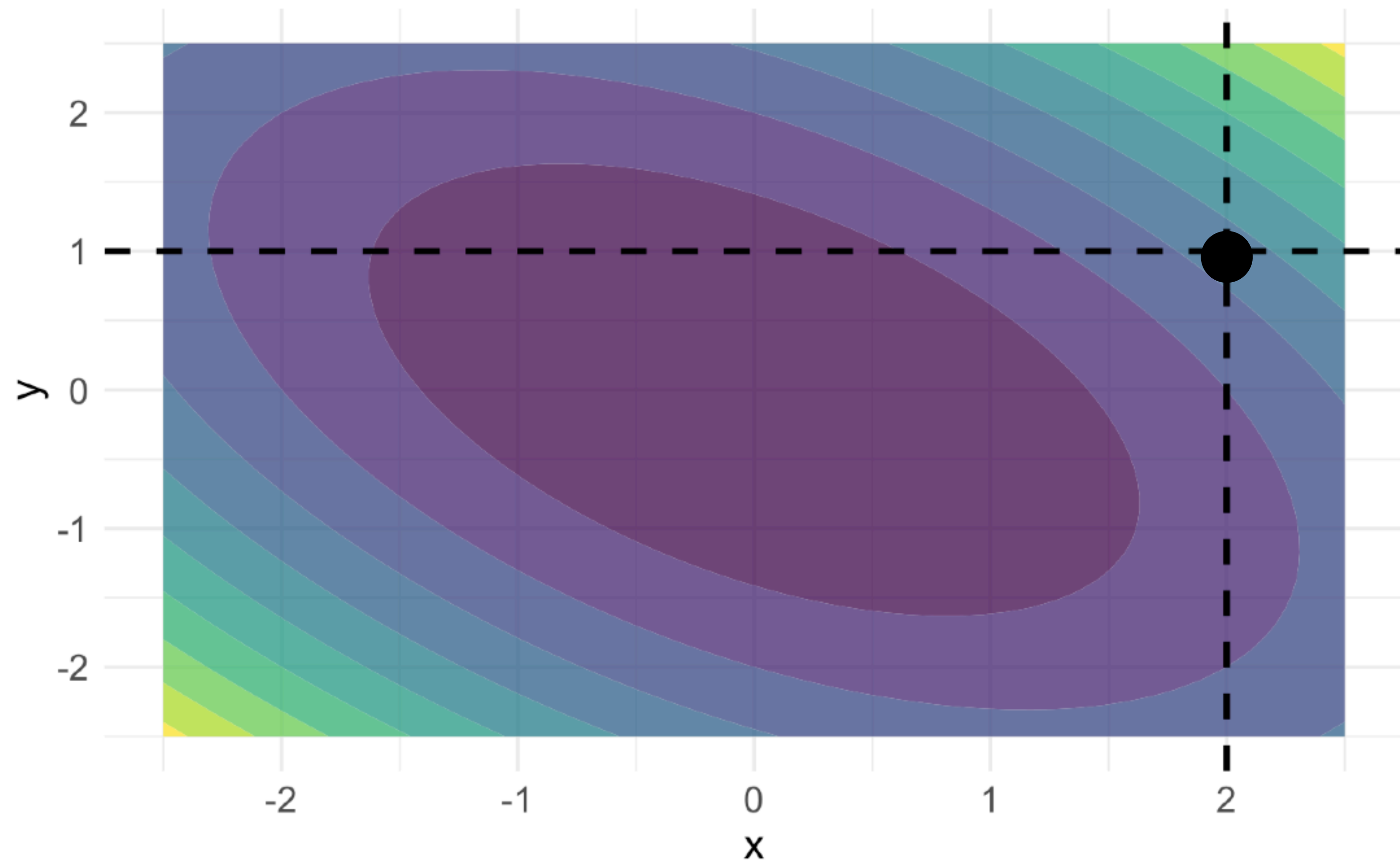
$$f(x, y) = x^2 + xy + y^2$$



Partial Derivatives:

$$\frac{\partial f}{\partial x} = 2x + y \quad \frac{\partial f}{\partial y} = x + 2y$$

$$\begin{bmatrix} \frac{\partial f}{\partial x} \\ \frac{\partial f}{\partial y} \end{bmatrix} = \begin{bmatrix} 2x + y \\ x + 2y \end{bmatrix}$$



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