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$$a) \frac{\partial f}{\partial x} = 2xe^{(x^2+y^2)} + 2x + 0 + y + 0 + 0$$

$$\frac{\partial f}{\partial y} = 2ye^{(x^2+y^2)} + 0 + 2y + x + 2 + 0$$

b)

$$\frac{\partial f}{\partial x \partial y} = 4xye^{(x^2+y^2)} + 0 + 0 + 1 + 0 + 0$$

$$\frac{\partial f}{\partial y \partial x} = 4xye^{(x^2+y^2)} + 0 + 0 + 1 + 0 + 0$$

$$c) \frac{\partial f}{\partial x}(1,3) = 2e^{10} + 5$$