

Exempel

Beräkna

$$f''_{xx} = \frac{\partial^2 f}{\partial x^2}, \quad f''_{xy} = \frac{\partial^2 f}{\partial y \partial x}, \quad f''_{yx} = \frac{\partial^2 f}{\partial x \partial y} \text{ och } f''_{yy} = \frac{\partial^2 f}{\partial y^2}$$

då

$$f(x, y) = x^2 y^3 + 2e^y.$$

Lösning

$$f(x, y) = x^2y^3 + 2e^y.$$

$$f(x, y) = x^2y^3 + 2e^y.$$

$$f'_x = 2xy^3,$$

$$f(x, y) = x^2y^3 + 2e^y.$$

$$f'_x = 2xy^3,$$

$$f'_y = 3x^2y^2 + 2e^y,$$

$$f(x, y) = x^2y^3 + 2e^y.$$

$$f'_x = 2xy^3,$$

$$f'_y = 3x^2y^2 + 2e^y,$$

$$f''_{xx} = (f'_x)'_x$$

$$f(x, y) = x^2y^3 + 2e^y.$$

$$f'_x = 2xy^3,$$

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$$f''_{xx} = (f'_x)'_x = 2y^3,$$

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$$f''_{yx} = (f'_y)'_x = 6xy^2,$$

$$f''_{yy} = (f'_y)'_y = 6x^2y + 2e^y.$$