

Exempel

Visa att om $z = f(x + 2y)$ där $f \in \mathcal{C}^1(\mathbb{R})$, då löser z ekvationen

$$2z'_x - z'_y = 0.$$

$$z = f(x + 2y)$$

$$z = f(x + 2y)$$

$$z'_x = f'(x + 2y) \cdot 1 = f'(x + 2y).$$

$$z = f(x + 2y)$$

$$z'_x = f'(x + 2y) \cdot 1 = f'(x + 2y).$$

$$z'_y = f'(x + 2y) \cdot 2 = 2f'(x + 2y).$$

$$z = f(x + 2y)$$

$$z'_x = f'(x + 2y) \cdot 1 = f'(x + 2y).$$

$$z'_y = f'(x + 2y) \cdot 2 = 2f'(x + 2y).$$

$$2z'_x - z'_y =$$

$$z = f(x + 2y)$$

$$z'_x = f'(x + 2y) \cdot 1 = f'(x + 2y).$$

$$z'_y = f'(x + 2y) \cdot 2 = 2f'(x + 2y).$$

$$2z'_x - z'_y = 2f'(x + 2y) - 2f'(x + 2y)$$

$$z = f(x + 2y)$$

$$z'_x = f'(x + 2y) \cdot 1 = f'(x + 2y).$$

$$z'_y = f'(x + 2y) \cdot 2 = 2f'(x + 2y).$$

$$2z'_x - z'_y = 2f'(x + 2y) - 2f'(x + 2y) = 0.$$