- z = f(x y)
- $f: \Re \to \Re$
- QvQ  $\frac{\partial z}{\partial x} + \frac{\partial z}{\partial y} = 0$

$$z:\Re^2\to\Re\\ g:\Re^2\to\Re$$

$$g: \Re^2 o \Re$$

$$z = (f \circ g)_{(x,y)} = f(g(x,y))$$
  
$$f = a, a \in \Re$$

$$f = a, a \in \Re$$

• 
$$\frac{\partial z}{\partial x} = f'(x - y) \cdot \frac{\partial g}{\partial x} =$$
  
 $f'(x - y) \cdot 1$ 

• 
$$\frac{\partial z}{\partial y} = f'(x-y) \cdot \frac{\partial g}{\partial y} = f'(x-y) \cdot -1$$

$$f'(x-y)\cdot -1$$

$$\Rightarrow \frac{\partial z}{\partial x} + \frac{\partial z}{\partial y} = f'(x - y) \cdot 1 + f'(x - y) \cdot -1 = f'(x - y) - f'(x - y) = 0$$

$$f'(x-y) - f'(x-y) = 0 \qquad \blacksquare$$