

$$f(x, y, z) = xy + yz + xz$$

$$P(0, 0, 0) \quad P(1, 1, 1) \quad P(1, 0, 0)$$

$$L(\underbrace{x, y, z}_P) = f(P) + \underbrace{f_x(P)(x-x_0) + f_y(P)(y-y_0)}_{df} + \underbrace{f_z(P)(z-z_0)}_{df}$$

$$f(1, 1, 1) = 3$$

$$f_x(x, y, z) = y + z \rightarrow f_x(1, 1, 1) = 2$$

$$f_y(x, y, z) = x + z \rightarrow f_y(1, 1, 1) = 2$$

$$f_z(x, y, z) = y + x \rightarrow f_z(1, 1, 1) = 2$$

$$L(x, y, z) = 3 + 2(x-1) + 2(y-1) + 2(z-1)$$

$$df = 2(x-1) + 2(y-1) + 2(z-1) \approx \underline{\Delta f}$$

$$\text{en } P(0, 0, 0)$$

$$L(x, y, z) = 0$$

$$df = 0$$