

SCRIVERE LA FORMULA DI TAYLOR ARRESTATATA AL 2° ORDINE
PER $f(x,y) = xy^2 + 2xy$ nel punto $(1,-1)$

$$f(x,y) = f(x_0, y_0) + [f_x(x_0, y_0)(x-x_0) + f_y(x_0, y_0)(y-y_0)] + \frac{1}{2!} \cdot [f_{xx}(x_0, y_0)(x-x_0)^2 + 2f_{xy}(x_0, y_0)(x-x_0)(y-y_0) + f_{yy}(x_0, y_0)(y-y_0)^2] + R_2(x,y)$$

$$f_x = y^2 + 2y \quad ; \quad f_{xx} = 0 \quad f_{xy} = 2y + 2$$

$$f_y = 2xy + 2x \quad f_{yy} = 2x \quad ; \quad \boxed{f(1,-1)} = 1 - 2 = -1$$

$$f_x(1,-1) = 1 - 2 = -1 \quad ; \quad f_{xx}(1,-1) = 0 \quad f_{xy}(1,-1) = -2 + 2 = 0$$

$$f_y(1,-1) = -2 + 2 = 0 \quad f_{yy}(1,-1) = 2$$

$$f(x,y) = -1 + [-1(x-1) + 0(y+1)] + \frac{1}{2!} [0(x-1)^2 + 2(0)(x-1)(y+1) + 2(y+1)^2] + R_2(x,y)$$

$$\Rightarrow f(x,y) = -1 - x + 1 + y^2 + 2y + 1 + R_2(x,y)$$

$$f(x,y) = y^2 + 2y - x + 1 + R_2(x,y)$$