Function manipulation

2 to 3 variables: $\qquad z = f(x, y) \Rightarrow g(x, y, z) = f(x, y) - z$

Partial Derivatives

Derivative of y with respect to x: $\qquad \dfrac{dy}{dx} = -\dfrac{F_x}{F_y}$

Directional derivative

Gradient: $\qquad \nabla f = \langle f_x, f_y, f_z \rangle$