



$$f(x, y) = \frac{x^2}{9} + \frac{y^2}{4}$$

$$x_0 = 4.000000$$

$$y_0 = 1.000000$$

$$\nabla f(\cdot) = (0.888889, \\ 0.500000)$$

$$\alpha_0 = 3.460354$$

$$\sqrt{x_0^2 + y_0^2} = 4.123106$$