



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

$$x_3 = 0.103990$$

$$y_3 = -0.082165$$

$$\nabla f(\cdot) = (0.023109, \\ -0.041082)$$

$$\alpha_3 = 2.308219$$

$$\sqrt{x_3^2 + y_3^2} = 0.132533$$