N.1

$$\chi_a \approx |f'(x_1, x_2)| \qquad x_1 = 1 \qquad x_2 = 10^{-4}$$

$$f' = J_f = \left(\frac{\partial f}{\partial x_1} \quad \frac{\partial f}{\partial x_2} \right) = \left(\frac{1}{x_2} \quad -\frac{x_1}{x_2^2} \right)$$

$$\chi_a \approx \| \left(\frac{1}{10^{-4}} \quad -\frac{1}{10^{-8}} \right) \| = \| (10^4 \quad -10^8) \|$$

$$= 10^4 + 10^8$$