

Newton's Method Exercises

Use Newton's method to (approximately) locate a critical point for each of the following functions. Use $\epsilon = 0.01$.

1. $f(a, b) = (5 - a)^4 + (2 - b)^2$, starting at $\begin{bmatrix} 0 \\ 3 \end{bmatrix}$.
2. $f(a, b) = (5a - b)^2 + (b - 15)^4$, starting at $\begin{bmatrix} 0 \\ 3 \end{bmatrix}$.
3. $f(a, b) = \sin(a + \cos(ab))$, starting at $\begin{bmatrix} 1 \\ 3 \end{bmatrix}$.

Numbers 1 and 2 are straightforward. Number 3 may require some thought.