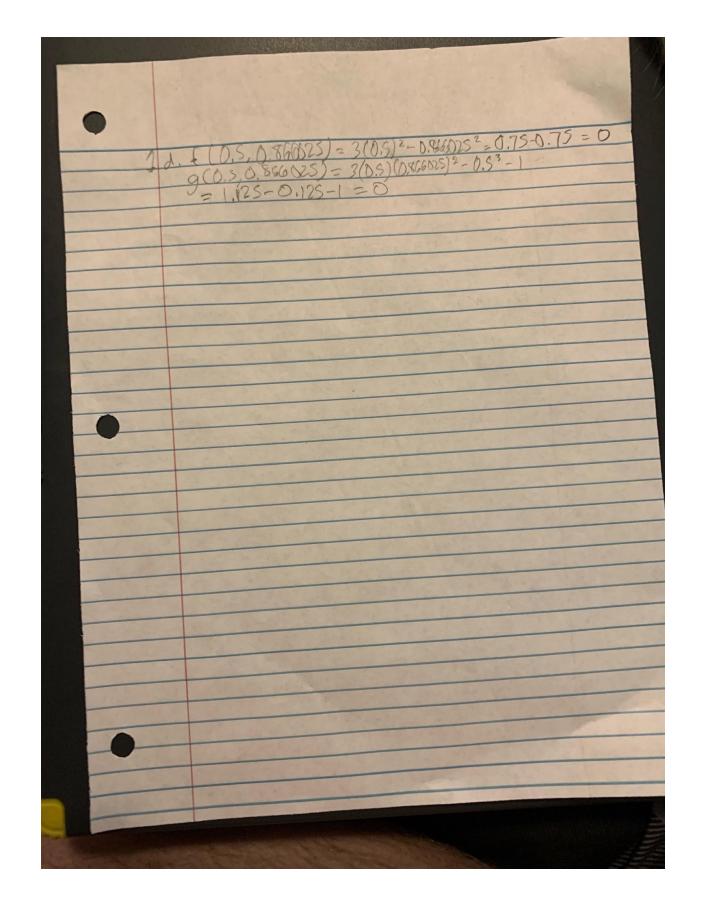
- 1. a. This method converges in 19 iterations to the approximate root [0.50000038 0.86602519] as shown in my Python code pushed to Git.
 - b. This matrix is a good choice because it's the inverse of the Jacobian at the initial guess scaled by a factor of ½ to reduce the step size.
 - c. Newton's method converged to the approximate root [0.50000007 0.86602553] in 12 iterations as shown in my Python code pushed to Git.
 - d. Since both methods were used with a tolerance of 10^-6, the root is approximately [0.5, 0.866025]



concline are confirming when .

3.a. News