```
Input: function f(x), float initial_x, float tolerance, int iterations
Output: result table results

if(f(x) is not a valid function)
    break;
if(initial_x or tolerance or iterations are not valid numbers)
    break;
if(tolerance is lees than 0)
    break;
if(iterations is less than 1)
    break;

array results

int iter_count <- 0
float xi_plus_f_xi <- initial_x + f(initial_x)
float f_xi_plus_f_xi <- f(xi_plus_f_xi)
float error <- MAXIMUM FLOAT VALUE
results[iter_count] <- [iter_count, initial_x,
f(initial_x), xi_plus_f_xi, f(xi_plus_f_xi), "N/A"]
float previous_x <- initial_x

    while iter_count < iterations and error > tolerance do:
        iter_count <- iter_count + 1
        current_x <- previous_x - ((f(previous_x)^2)/
        (f(previous_x + f(previous_x)) - f(previous_x)))
        xi_plus_f_xi <- current_x + f(current_x)
        f_xi_plus_f_xi <- f(xi_plus_f_xi)
        error <- |previous_x - current_x|
        results[iter_count] <- [iter_count, current_x,
        f(current_x), xi_plus_f_xi, f_xi_plus_f_xi, error]
        previous_x <- current_x
    end while

return results
```