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% Problem 2c)
% Secant Method

% input = Tolerance , first_guess, second_guess
% output = array of iterates

function x = Secant(TOL,start_x,end_x)
    format long
    iter = 0;
    given_fun = @(a)a - 4*sin(2*a) + 3.245892718783470;
    delta_x = 100000000;

    while delta_x >= TOL
        iter = iter + 1;
        f_start = given_fun(start_x);
        f_end = given_fun(end_x);

        x_next = end_x - (f_end*(start_x - end_x)/(f_start-f_end));
        x(iter) = x_next;

        if( abs(given_fun(x_next)) < eps)
            return;
        end

        start_x = end_x;
        end_x = x_next;
        delta_x = abs(start_x - end_x);
    end

end
```

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