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%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% NAME: abraham reines
% JMU-EID: reinesaj
% DATE: Mar 21, 2022
%
% PROGRAM: Problem27b.m
% PURPOSE:  Use bisection to find the zeros with ten decimal places accuracy.
 What are they?
% CREDIT: Adapted from an example written by Dr. Lucus

% JMU PLEDGE
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
clc
c=7;
x=.1;
n=0;
while(abs(x-1/7)>10^-8)%calculating till 8 decimal point accuracy
    x=x*(2-c*x);
    n=n+1;
end
fprintf('Calculated root: %.10f\n',x)
fprintf('Value of function at root: %.10f\n',1/x-c)
fprintf('Number of iterations: %d\n',n)
```

```
Calculated root: 0.1428571422
Value of function at root: 0.0000000301
Number of iterations: 4
```

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