```matlab
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% NAME: abraham reines
% JMU-EID: reinesaj
% DATE: Mar 20, 2022
%
% PROGRAM: Problem25.m
% PURPOSE:  Solve part b of Problem 25; verify the recurrence relations
% CREDIT: Adapted from an example written by Dr. Lucus
%
% VARIABLES:
%    b(1), a(1), a(2)
%
% JMU PLEDGE
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
clc
p(1) = 1/3; q(1) = 1/3; q(2) = 1/9;
for i = 1:1:30
    p(i+1) = (1/3)*p(i);
    q(i+2) = 4*q(i+1) - (11/9)*q(i);
end
% The following output is the error for p(30) and q(30)
disp(abs(p(30)-q(30)))

   0.105458202818889
```

Published with MATLAB® R2021b