```matlab
%week4 assignment
%Q1
%f = tan(x) + a*sin(x)/x;
x = 1.5;
tiny = 1.0e-10;


num_a = 100;
xx= zeros(num_a,1);
a = linspace(1,4,num_a);
for j = 1:num_a
 rat = 1;
 n = 0;

while rat>tiny

   dx = (tan(x) + a(j)*sin(x)/x)/(tan(x)^2 + (a(j)*cos(x))/x - (a(j)*sin(x))/
x^2 + 1);
   x = x-dx;
   rat = abs(dx/x);
   n = n+1;
end
xx(j) = x;

end

plot(a,xx, 'ro-.');

%Q2
% Solve a least squares problem for data fitting by quadratic polynomial.
x1 = linspace(1,2,10);
y = exp(x1);
A = [ones(10,1),x1',(x1.^2)'];
c = A\y'


c =

    2.7021
   -2.2472
    2.2885
```
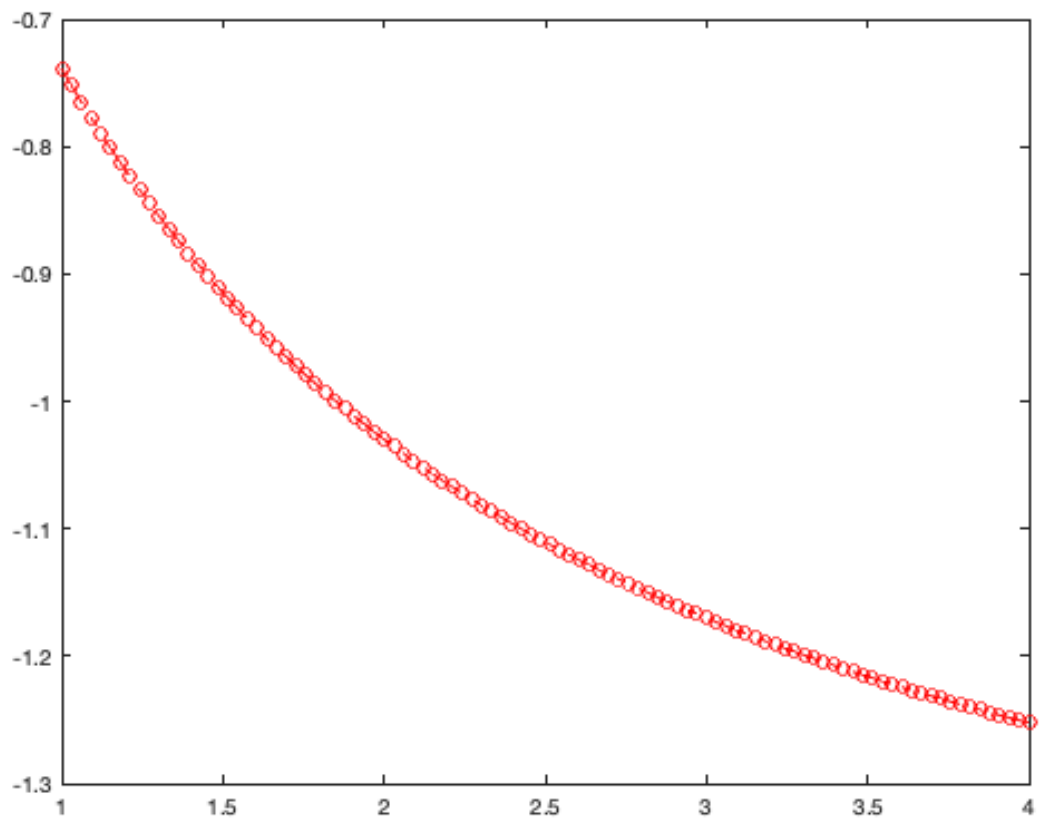
The solution to Q1 could be different, it is acceptable as long as you write the correct codes

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