Josh Andrews - ECE 498 - HW #7

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Question 1

Finding roots in interval

```
clear all; clc;

f = inline('0.05*x - sin(x)');
x0 = [-5 -1];
x(1) = fzero(f, x0);
x0 = [-1 1];
x(2) = fzero(f, x0);
x0 = [1 5];
x(3) = fzero(f, x0);
disp('The roots with x [-5 5] are:')
disp(x)
```

```
The roots with x [-5 5] are:
   -2.9915         0    2.9915
```

Question 2

Finding roots of polynomial

```
p = [1, 2, -7, -8, 10, 0, 8, 0];
r = roots(p);
disp('The roots of polyinomial p are:')
disp(r)
```

```
The roots of polyinomial p are:
   0.0000 + 0.0000i
  -3.0529 + 0.0000i
  -2.0000 + 0.0000i
   2.0000 + 0.0000i
   1.2835 + 0.0000i
  -0.1153 + 0.7051i
  -0.1153 - 0.7051i
```

Question 3

solve set of equations

```
x0 = [1,1,1];
%nle(x0);
x = fsolve('nle', x0);
disp('X = ')
disp(x(1))
disp('Y = ')
disp(x(2))
disp('Z = ')
disp(x(3))
```

```
Equation solved.

fsolve completed because the vector of function values is near zero
as measured by the default value of the function tolerance, and
the problem appears regular as measured by the gradient.



X =
    2.0000

Y =
    2.0000

Z =
    2.0000
```

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