Homework#1

1) For the following non-linear equations:

$$2x_1^2+x_1x_2-x_1=2$$
$$x_1^2-x_2=0$$

a) Solve the above system of non-linear equations using Newton-Raphson method with $(x_1^{(0)}, x_2^{(0)})=(0.9,1.1)$. Perform the first two iterations (i.e. K=0 and K=1)

b) Write a computer code for solving above system of non-linear equations using Newton-Raphson method. The iterations should be stopped if $|g_1|<0.0001$ and $|g_2|<0.0001$

(2)

For the following network, perform power flow analysis. Only first two iterations are enough (i.e. for K=0 and K=1). Start with initial values of $|V_2^{(0)}| = 1.0$, $\delta_2^{(0)} = 0.0$, and $\delta_3^{(0)} = 0.0$.