**Sample 6b**



**In the mass-spring system shown above, the masses m1, m2 and m3 are .8, .6**

**and .5, the spring constants k1, k2, k3 and k4 are 4.3, 5.1, 4.6 and 5.4, and x1, x2 and x3 are the displacements of m1, m2 and m3 from their equilibrium positions.**

**Write a MATLAB program as follows:**

**1) t will go from 0 to 8 sec in steps of .001 sec.**

**2) Calculate the displacements and velocities of the masses for each**

**value of t. Use 1e-7 as the accuracy factors, .7, .2 and .4 as the**

**initial values of x1, x2 and x3 , and 0 as the initial values of the**

**velocities.**

**3) Plot x1, x2 and x3 versus t using the colors blue, red and green and**

**the t axis in black.**

**4) In a separate figure, plot the velocities v1, v2 and v3 versus t using**

**the colors blue, red and green and the t axis in black.**

**The graphs should look like the ones on the attached sheets.**

**Equations**

****