Sample 5b

The differential equations for the Predator-Prey Problem are:

$$\frac{dH}{dt} = K_1 H - CHL - S_1 H$$

$$\frac{dL}{dt} = -K_2 L + DHL - S_2 L$$

where H is the hare population, L is the lynx population, and K_1, K_2, C, D, S_1, and S_2 are 2, 10, .0012, .0019, .63, and .57, respectively.

Write a MATLAB program as follows:

1) **t will go from 0 to 9 sec in steps of .001 sec .**

2) **Calculate H and L for each value of t. Use 1e-7 as the accuracy factors and 4000 and 200 as the initial values of H and L.**

3) **Plot H and L versus t using the colors blue and red. The graph should look like the one on the attached sheet.**