**Sample 5a**

**The angular velocity  of a particle moving in a circle is 3 rad/s at t=0.**

**The differential equation for  is**

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**where k=.0547 .**

**Write a MATLAB program to do the following:**

**1) t will go from 0 to 4 sec in steps of .001 sec .**

**2) Calculate  for each value of t. Use 1e-7 as the accuracy factors.**

**3) Plot  versus t in blue. The graph should look like the one on the**

**attached sheet.**