

## Problem 8

- (a) Find the solution of the initial value problem in Problem 6.
- (b) Identify the transient and steady state parts of the solution.
- (c) Plot the graph of the steady state solution.
- (d) If the given external force is replaced by a force of  $2 \cos \omega t$  of frequency  $\omega$ , find the value of  $\omega$  for which the amplitude of the forced response is maximum.