國立臺灣海洋大學河海工程學系2006 複變函數第一次作業

1. In the course, we have solved the particular solution (steady state solution) of the SDOF vibration system

$$\ddot{x} + x = cos(3t)$$

$$\ddot{x} + x = sin(3t)$$

by
(1). conventional method.
(2). method of complex variables.
(3). Discuss the change of amplitude and phase between input and output and plot it in complex plane.
(Hint: by superimposing real and imaginary part)

2. Solve the particular solution (steady state solution) of the SDOF vibration system

$$\ddot{x} + \dot{x} + x = cos(3t)$$

$$\ddot{x} + \dot{x} + x = sin(3t)$$

by
(1). conventional method.
(2). method of complex variables.
(3). Discuss the change of amplitude and phase between input and output and plot it in complex plane.
(Hint: by superimposing real and imaginary part)

3. Any comments on Prob.1 and 2.