بسم الله الرحمن الرحيم

King Abdulaziz University
Engineering College
MENG Department

Mechanical Vibrations
MENG 470
Homework Assignment 3

Due Wednesday: 13/9/1425 H

From the textbook by S. S. Rao, pp. 178-218

Problem 2.108 Problem 2.109 Problem 2.110 Problem 2.112

A Useful Formula:

$$x(t) = a\cos(\omega t) + b\sin(\omega t)$$
$$= A\cos(\alpha)\cos(\omega t) + A\sin(\alpha)\sin(\omega t) = A\cos(\omega t - \alpha)$$
$$= A\sin(\beta)\cos(\omega t) + A\cos(\beta)\sin(\omega t) = A\sin(\omega t + \beta)$$