

NAME / LASTNAME:

CE 8060 – STRUCTURAL DYNAMICS
Homework #1

Assigned: Saturday, Aug 16, 2014
Due: Thursday, Aug 21 2014 (beginning of class)

Homework must be done neatly in pencil, on 8 ½”x 11” paper, stapled together. Each step must be easily followed; diagrams are useful. State your assumptions. Homework that is not neat and legible may be rejected. Staple the question sheet to the front of your homework.

Make Sure To Include The Cover Page!

This homework is to be submitted individually.

Question 1 Find the solution for following expression:

$$\lim_{\theta \rightarrow 0} \frac{\cos \theta - 1}{\theta^2}$$

Question 2 Find the solution for following expression: (Hint: Use the identity: $\sin^2 x + \cos^2 x = 1$)

$$\int_0^{\pi/2} \frac{\cos x}{2 - \cos^2 x} dx$$

Question 3

Given $\frac{dy}{dx} = e^x - 1$ and initial condition: $y(0) = 3$, find the solution of y .

Question 4 Solve for the equation $y'' + y' - 6y = 0$

Question 5 Find the general solution for the equation below:

$$y'' + 6y' + 10y = 0$$