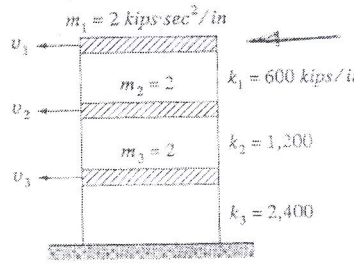
EM 633
H.W. # 10

1. Consider a three-story shear building shown below (same as Problem 2 in H.W. #9). The building is subjected to a harmonic loading applied at the top floor: $p_1(t) = 5 \sin \bar{\omega} t$, where $\bar{\omega} = 1.1\ \omega_1$. No forces are acting on the other two floors. Evaluate the steady state undamped amplitude of the motion at the three floor levels.



$p_1(t) = 5 \sin \bar{\omega} t$

$$\Phi = \begin{bmatrix} 1.000 & 1.000 & 1.00 \\ 0.548 & -1.522 & -6.26 \\ 0.198 & -0.872 & 12.10 \end{bmatrix}; \quad \omega = \begin{Bmatrix} 11.62 \\ 27.5 \\ 45.9 \end{Bmatrix} rad/sec$$