

Homework for Lecture 6

Problem 6.1

Review Problem 3.5 Rao

Problem 6.2

Problem 3.14 Rao

Problem 6.3 (modified from *Principles of Vibrations* by Tongue)

Consider a spring mass system shown. Let $m = 5$ kg, $k = 20,000$ N/m and $f(t) = 20 \sin(\omega t)$ N. Determine the range of forcing frequencies, ω , so that the amplitude of the response at steady state is less than 20 mm. (Ans: $\omega < 61.6$ rad/s, $\omega > 64.8$ rad/s)

