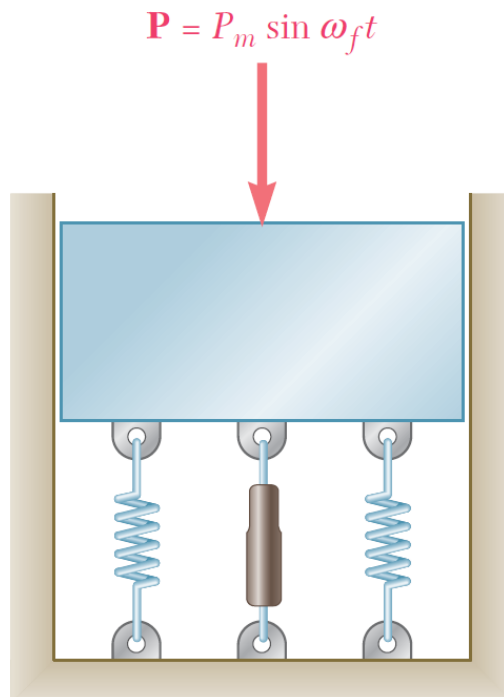


Vm240 Project 3: Isolating the Source of Vibration

A machine element supported by springs and connected to a dashpot is subjected to a periodic force of magnitude $P_m \sin \omega_f t$. The transmissibility T_m of the system is defined as the ratio F_m/P_m of the maximum value F_m of the fluctuating periodic force transmitted to the foundation to the maximum value P_m of the periodic force applied to the machine element.

- Use computational software to calculate and plot the value of T_m for frequency ratios ω_f/ω_n from 0 to 5 and for damping factors c/c_c equal to 0.2, 0.4, 0.6, 0.8, 1.0.
- When $\omega_f/\omega_n = 2.5$, select appropriate c/c_c to make T_m no more than 0.5



Please draft a short report no more than 1000 words to provide the necessary information to illustrate your idea in solving the problem.

In the report, you should at least include:

1. Title
2. Introduction on the problem
3. Illustration on the solution procedure
4. A conclusion

Reference: curves can be drawn with matlab or other programming language, like the following figure.

