EM 633
H.W. #8

The properties of a three-story shear building in which it is assumed that the entire mass is lumped in the rigid girders are shown ~~in Fig. P8.8.~~ below.

(*a*) By solving the determinantal equation, evaluate the undamped vibration frequencies of this structure.

(*b*) On the basis of the computed frequencies, evaluate the corresponding vibration mode shapes, normalizing them to unity at the top story.

(*c*) Demonstrate numerically that the computed mode shapes satisfy the orthogonality conditions with respect to mass and stiffness.