# 2.081J/16.230J Plates and Shells 

Self-Evaluation Quiz<br>Wednesday, March 1

Problem 1 Write in the expanded form:
(a) $M_{\alpha \beta} \kappa_{\alpha \beta}$
(b) $w,{ }_{\alpha \beta}$
(c) $\varepsilon_{\alpha \beta} \delta_{\alpha \beta}$
(d) $w{ }_{\alpha} w{ }_{\beta}$
(e) $w,{ }_{\alpha \beta \alpha \beta}$

Problem 2 Compare the bending rigidity of a beam $E I$ and that of a plate $D$, and point out the difference in terms of dimensional quantity and material parameters.

Problem 3 What is the buckling coefficient for the square plate clamped on all four edges? See the graph on Section 4.3.3

Problem 4 A square simply supported plate is loaded by a point force $P$ at the center. Determine the load-deflection relationship ( $P$ vs. $w_{0}$ ) using the energy method. [Hint:Assume the sinusoidal shape for the deflection, the same as in Problem \#1 of Homework \#2.]

