1. Problem 6.2 on Page 236. Note that a proper variational formulation for (6.97) is:

Find \( u \in H^2_*(I) = \{ v \in H^2(I) : v'(\pm 1) = 0 \} \) such that

\[
(u'', v'') + \alpha(u', v') + \beta(u, v) = (f, v), \quad \forall v \in H^2_*(I).
\]

2. Implement the scheme (6.80) and reproduce the results for Example 1 in Page 230.