

Suppose you had a perfectly rectangular wooden board with dimensions  $2 \times 4 \times 96$  inches and mass  $M = 5$  kg. Suppose you accidentally dropped it chipping off a small fragment, say  $m = 10$  grams, from one of the corners. Find the corrections to the principal axes and moments of inertia due to the missing corner up to the second order in  $m/M$ .