

$$\text{*B/69} \quad I_{xx} = m(\sqrt{2}l)^2 + m(\sqrt{2}l)^2 + m(2l)^2 \\ = 8ml^2$$

$$I_{yy} = ml^2 + ml^2 + m(\sqrt{5}l)^2 = 7ml^2$$

$$I_{zz} = ml^2 + ml^2 + ml^2 = 3ml^2$$

$$\text{Eq. B/11, with } I_0 = \frac{I}{ml^2} :$$

$$ml^2 \begin{vmatrix} (8-I_0) & 0 & +2 \\ 0 & (7-I_0) & +2 \\ +2 & +2 & (3-I_0) \end{vmatrix} = 0 \quad \left\{ \begin{array}{l} \text{Notes :} \\ I_{xy} = 0 \\ I_{xz} = I_{yz} = -2ml^2 \\ \text{from Prob. B/51} \end{array} \right.$$

Numerical solution of cubic :

$$\underline{I_1 = 9ml^2}, \quad \underline{I_2 = 7.37ml^2}, \quad \underline{I_3 = 1.628ml^2}$$

For I_1 , solution of Eqs. B/12 along with

$$l_1^2 + m_1^2 + n_1^2 = 1 \quad \text{yields} \quad \begin{cases} l_1 = 0.816 \\ m_1 = 0.408 \\ n_1 = 0.408 \end{cases}$$