

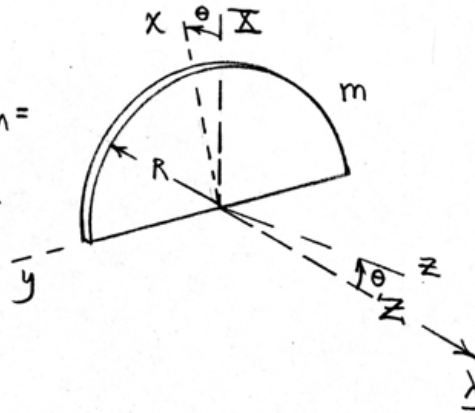
B/59

Use Eq. B/10:  $I_{zz} = I_M =$

$$I_{xx} l^2 + I_{yy} m^2 + I_{zz} n^2$$

$$- 2I_{xy} lm - 2I_{xz} ln$$

$$- 2I_{yz} mn$$



Use the unit vector  $\underline{n} = l\underline{i} + m\underline{j} + n\underline{k}$

with  $l = -\sin\theta$ ,  $m = 0$ ,  $n = \cos\theta$

$$I_{xx} = \frac{1}{4}mR^2, I_{yy} = \frac{1}{4}mR^2, I_{zz} = \frac{1}{2}mR^2$$

$$I_{xy} = I_{xz} = I_{yz} = 0$$

$$\text{So } I_{zz} = \frac{1}{4}mR^2(\sin^2\theta) + \frac{1}{4}mR^2(0) + \frac{1}{2}mR^2(\cos^2\theta)$$

$$= \frac{1}{4}mR^2(\sin^2\theta + 2\cos^2\theta)$$

$$= \frac{1}{4}mR^2(1 + \cos^2\theta)$$