

HW 9-5 Soln)

$$I = \sum_n m_n r_n^2 = 4(8^2) + 2(3^2) + 9(0^2) + 1(2^2) = 278 \text{ kg m}^2 .$$

This value is different than the one calculated in the example. The moment of inertia depends not only on the mass but on the distribution of the mass about the axis of rotation.