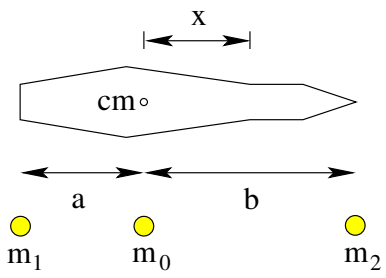
[mex143] Simulating a stick by three point masses

Consider a nonuniform rod with mass m and moment of inertia I_0 for rotations about an axis through the center of mass and perpendicular to the axis of the rod. The moment of inertia for rotations about a parallel axis displaced by x is then $I_x = I_0 + mx^2$.
Show that three point masses m_0, m_1, m_2 with $m_0 + m_1 + m_2 = m$ in the configuration shown can be chosen such that its moment of inertia for rotations about an axis through m_0 is I_0 and that for rotations about a parallel axis displaced by x is I_x just as is the case for the rod. Express the values of m_0, m_1, m_2 as functions of the specifications m, I_0, a, b of the rod.



Solution: