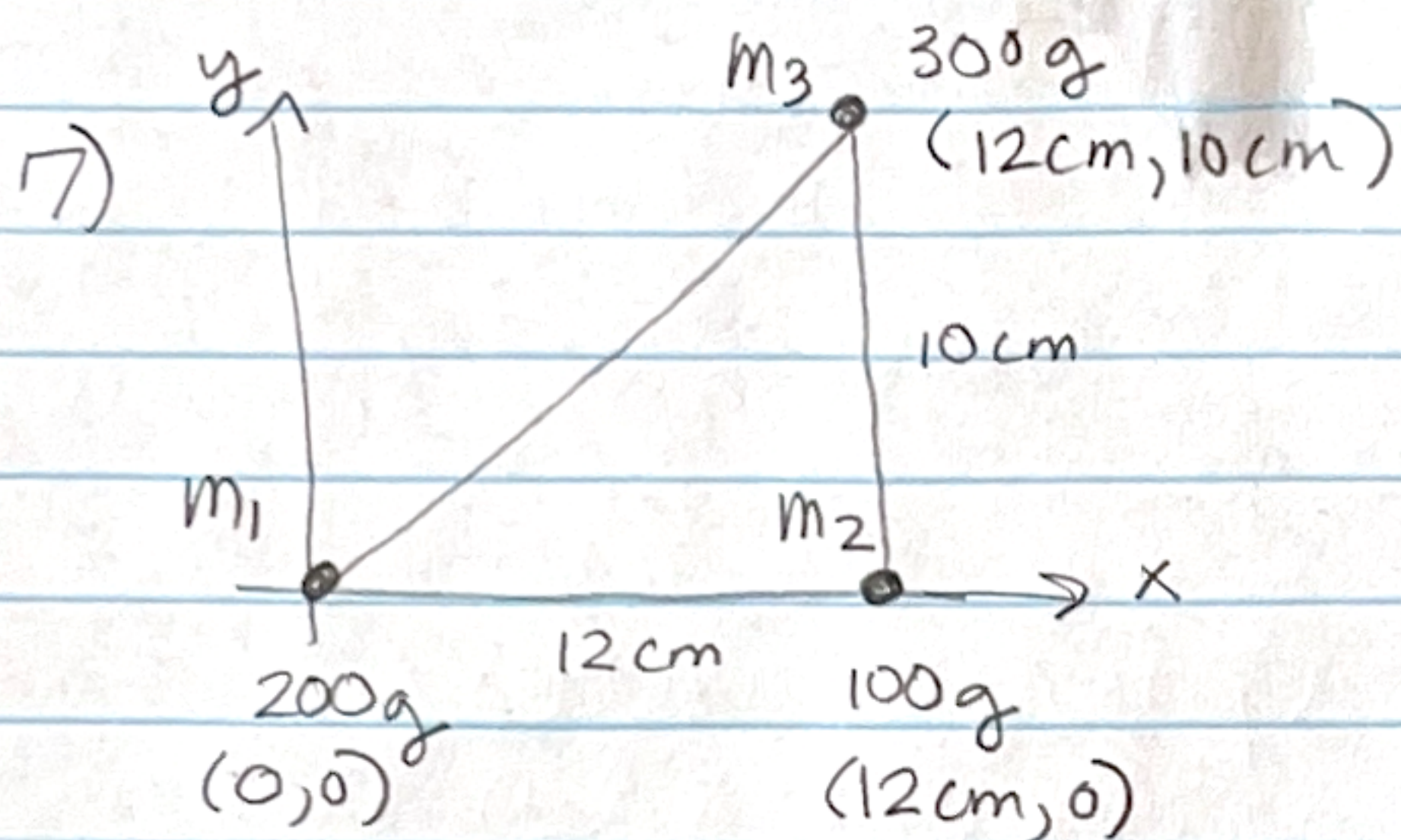


Ch 12 p. 330 #7



$$M X_{cm} = m_1 x_1 + m_2 x_2 + m_3 x_3$$

$$X_{cm} = \frac{(200\text{g})(0) + (100\text{g})(12\text{cm}) + (300\text{g})(12\text{cm})}{(200\text{g} + 100\text{g} + 300\text{g})}$$

$$X_{cm} = \frac{4800\text{ g}\cdot\text{cm}}{600\text{ g}}$$

$$X_{cm} = 8\text{ cm}$$

$$Y_{cm} = \frac{m_1 y_1 + m_2 y_2 + m_3 y_3}{M}$$

$$= \frac{(200\text{g})(0) + (100\text{g})(0) + (300\text{g})(10\text{cm})}{(200\text{g} + 100\text{g} + 300\text{g})}$$

$$= \frac{3000\text{ g}\cdot\text{cm}}{600\text{ g}}$$

$$= 5\text{ cm}$$

The coordinates of the center of mass are $(8\text{cm}, 5\text{cm})$.