1. Point-masses $m_i$ are located on the x-axis as shown. Find the moment $M$ of the system about the origin and the center of mass $\bar{x}$.

$$m_1 = 25 \quad m_2 = 20 \quad m_3 = 10$$

$$-2 \quad 0 \quad 3 \quad 7$$

For questions 2 and 3, the masses $m_i$ are located at the points $P_i$. Find the moments $M_x$ and $M_y$ and the center of mass of the system.

2. $m_1 = 6, \ m_2 = 5, \ m_3 = 10; \ P_1(1,5), \ P_2(3,-2), \ and \ P_3(-2,-1)$

3. $m_1 = 6, \ m_2 = 5, \ m_3 = 1, \ and \ m_4 = 4; \ P_1(1,-2), \ P_2(3,4), \ P_3(-3,-7), \ and \ P_4(6,-1)$
4. Calculate the moments $M_x$ and $M_y$ and the centroid of the given shape where $\rho = 2$.

For questions 5 through 8, sketch the region bounded by the curves, and visually estimate the location of the centroid. Then find the exact coordinates of the centroid.

5. $3x + 2y = 6$, $y = 0$, $x = 0$
6. \( y = 5 - x^2, \ y = 0 \)

7. \( y = x, \ y = x^2 \)

8. \( y = 1/x, \ y = x^2, \ x = 2 \)