MTH 265, Quiz #19, Summer 2024 Name _____

Instructions: Show all work. Use exact answers unless otherwise asked to round.

1. Three point-masses lie in a plane and are connected by masses rods so that they cannot move relative to each other. The masses and their positions are:

$$m_1 = 2.1\ kg\ at\ (-9,\ -3)$$
$$m_2 = 2.6\ kg\ at\ (5,\ 10)$$
$$m_3 = 4.1\ kg\ at\ (-9,\ -5)$$

   with distances in meters. Calculate the location of this system's center of mass.

2. Find the center of mass of the region bounded by $z = 1 - x^2 - y^2, z = 0$, with mass density $\rho = k(x^2 + y^2)$.