----- Problem 1 ----- The three spheres in the figure below are identical. The sphere out on the x axis is twice as far away as the one on the y axis.

- Let’s focus on the net gravitational force on the sphere at the origin due to the other two. What angle does this force vector make with the x axis?

----- Problem 2 ----- \( M_{\text{Mars}} = 0.107 \times M_{\text{Earth}}, \quad R_{\text{Mars}} = 0.532 \times R_{\text{Earth}}, \quad g_{\text{Earth}} = 9.8 \text{ m/s}^2 \)

- Using only this information, what is \( g_{\text{Mars}} \)?

Answers
1. \( \theta = 75.9638 \) degrees
2. \( g_{\text{Mars}} = 3.7 \text{ m/s}^2 \)