

5. The gravitational force of attraction can be calculated using Newton's Law of Universal Gravitation, because the masses and the distance between their centers are given.

$$F = G m_1 m_2 / r^2$$

$$F = (6.67 \times 10^{-11} \text{ N m}^2 / \text{kg}^2) (60 \text{ kg}) (10,000 \text{ kg}) / (5 \text{ m})^2$$

$$F = 1.6 \times 10^{-6} \text{ N} = 0.0000016 \text{ N} = 0.00000036 \text{ lb}$$

This is a very small force, which explains why you do not veer toward a large building whenever you pass by one.