

$$m_{\text{Boiz}} = 1.00 \times 10^4 \text{ kg}$$

$$r_{\text{Boiz}} = 20.0 \text{ m}$$

$$m_{\text{Prina}} = 55.0 \text{ kg}$$

$$a_g = \frac{m \cdot G}{r^2} = \frac{(1.00 \times 10^4 \text{ kg})(6.67 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2)}{(20.0 \text{ m})^2}$$

$$a_g = 1.67 \times 10^{-9} \text{ m/s}^2$$

$$W = m \cdot g$$

$$W = (55 \text{ kg})(1.67 \times 10^{-9} \text{ m/s}^2)$$

$$W = 9.17 \times 10^{-8} \text{ N}$$