

10. This is a direct application of Newton's Law of Universal Gravitation.

$$F = G m_E m_M / r^2$$

$$F = (6.67 \times 10^{-11} \text{ N m}^2 / \text{kg}^2) (5.98 \times 10^{24} \text{ kg}) (7.34 \times 10^{22} \text{ kg}) / (3.8 \times 10^8 \text{ m})^2$$

$$F = (2.93 \times 10^{37}) / (1.44 \times 10^{17}) \text{ N}$$

$$F = 2.03 \times 10^{20} \text{ N}$$