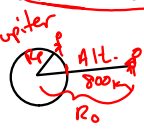


Univ Grav sheet #1

Use your constant sheet to determine the weight of an astronaut on Jupiter and 800 Km above Jupiter's surface.


 A diagram of Jupiter is shown as a circle with a center point. A radius line is labeled R_0 . A point representing an astronaut is shown at a distance of 800 km from the surface, with a vertical line indicating the altitude. The word "Jupiter" is written above the circle.

a) $F_g = \frac{G M m}{R^2}$

$F_g = \frac{(6.67 \times 10^{-11}) (1.9 \times 10^{27}) (60 \text{ kg})}{(7.15 \times 10^7 \text{ m})^2}$
 $F_g = 1487.4 \text{ N}$

b) $F_g = \frac{G M m}{R^2}$

$= \frac{(6.67 \times 10^{-11} \frac{\text{N} \cdot \text{m}^2}{\text{kg}^2}) (1.9 \times 10^{27} \text{ kg}) (60 \text{ kg})}{(800,000 + 7.15 \times 10^7 \text{ m})^2} = 1454.6 \text{ N}$

Apr 23-9:04 AM