Answer on Question #80373, Physics / Astronomy | Astrophysics

Question:

If the moon has 1.2 percent of the earth's mass and gravity is proportional to mass, then why is the moon's gravity 16.6 percent of earth's gravity?

Solution:

Gravity $g = \dfrac{\gamma M}{R^2}$, therefore $\dfrac{g_M}{g_E} = \dfrac{M_M R_E{}^2}{M_E R_M{}^2} = 0.012(\dfrac{6.37}{1.74})^2 = 0.161$ or the moon's gravity equals to 16.1 percent of earth's gravity.

The answer:

Please see the solution above.