$$F = G\frac{m_1 m_2}{d^2}$$

$$F_1 = G\frac{m_1 m_2}{(2d)^2} = \left(G\frac{m_1 m_2}{4d^2}\right) = \frac{1}{4}F$$

$$F_c = m \cdot a_c$$

$$a_c = \frac{v^2}{r}$$

$$m_1\left(\frac{v^2}{R}\right) = G\cdot\frac{m_1 m_T}{R^2}$$

$$v^2 = G\frac{m_T}{R} \rightarrow v = \sqrt{G\frac{m_T}{R}}$$

Calcolo dell'accelerazione di gravità sulla terra

$$g = 9{,}8\ m/s^2$$

m

$$P = F_G \qquad m g_T = G\frac{m m_T}{R_T^2}$$

$$g_T = 6{,}7\cdot 10^{-11}\cdot\frac{6\cdot 10^{24}\ kg}{(6{,}4\cdot 10^{6}\ m)^2}$$

6,4

$$g_T = \frac{40{,}2\cdot 10^{13}\ kg\cdot N\cdot\frac{m^2}{kg^2}}{40{,}96\cdot 10^{12}\ m^2}$$

$$g_T = 9{,}81\ \frac{m}{s^2}$$

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$r = 4 \cdot 10^7\ m$

$v = ?$

sapendo che:

$$v = \sqrt{G \frac{m_T}{r}} = \sqrt{\left(6{,}7 \cdot 10^{-11}\ N \cdot \frac{m^2}{kg^2}\right) \frac{(6 \cdot 10^{24}\ kg)}{4 \cdot 10^7\ m}}$$

$$v = \sqrt{\left(6{,}7 \cdot 10^{-11}\ N \cdot \frac{m}{kg}\right) \cdot (1{,}5 \cdot 10^{17})} =$$

$$v = \sqrt{10{,}05 \cdot 10^6\ N \cdot \frac{m}{kg}} = 3{,}2 \cdot 10^3\ \frac{m}{s}$$

$F_c = F_G$

$m\omega^2 d$

$G \frac{m M_T}{d^2}$

$\frac{2\pi}{T}$

$T_0 = ?$