

EJERCICIO FQ1852646:

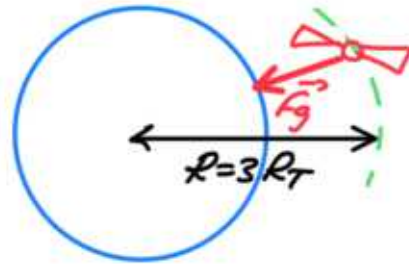
"achimages.com"

$$m_s = 900 \text{ kg}$$

$$R = 3R_T$$

$$R_T = 6370 \cdot 10^3 \text{ m}$$

$$M_T = 5,98 \cdot 10^{24}$$



a) ¿aceleración del satélite?

$$a = g = G \frac{M_T}{R^2} = 6,67 \cdot 10^{-11} \frac{5,98 \cdot 10^{24}}{(3 \cdot 6370 \cdot 10^3)^2} = 1,09 \text{ m/s}^2$$

b) Velocidad orbital:

$$F_g = m \cdot a_N \Rightarrow G \frac{M m}{R^2} = m \frac{v^2}{R}$$
$$v^2 = \frac{GM}{R} \Rightarrow v = \sqrt{\frac{GM}{R}}$$

$$v = \sqrt{\frac{6,67 \cdot 10^{-11} \cdot 5,98 \cdot 10^{24}}{3 \cdot 6370 \cdot 10^3}} = 4568,6 \text{ m/s}$$

b) de otra forma:

$$a = a_N = \frac{v^2}{R} = \frac{4568,6^2}{3 \cdot 6370 \cdot 10^3} = 1,09 \text{ m/s}^2$$