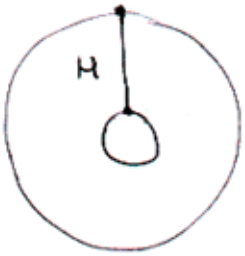
SOLUCIÓN EJERCICIO 10



$$E_i = -\frac{GMm}{R} + T_i$$

$$E_f = -\frac{GMm}{(R+H)}$$

$$E_i = E_f \Rightarrow T_i - \frac{GMm}{R} = -\frac{GMm}{(R+H)}$$

$$T_i \equiv \Delta U = -\frac{GMm}{R+H} + \frac{GMm}{R}$$

$$\Delta U = GMm\left[\frac{1}{R} - \frac{1}{R+H}\right] = GMm\,\frac{H}{R(R+H)}$$

MOV. CIRCULAR

$$m\frac{v^2}{(R+H)} = \frac{GMm}{(R+H)^2} \Rightarrow v^2 = \frac{GM}{(R+H)}$$

ENERGÍA CINÉTICA
PARA MANTENERLO
EN ÓRBITA CIRCULAR

$$\Delta T = \frac{1}{2}mv^2$$

$$\Delta T = \frac{1}{2}\frac{GMm}{(R+H)}$$

$$\therefore \frac{\Delta U}{\Delta T} = \frac{\frac{GMm\,H}{R(R+H)}}{\frac{GMm}{2(R+H)}} \Rightarrow \boxed{\frac{\Delta U}{\Delta T} = \frac{2H}{R}}$$