Answer on Question #66934 - Physics / Molecular Physics -Thermodynamics

Question:

The time period of a simple pendulum, called 'second pendulum ' is 2 s .Calculate the length, angular frequency and frequency of the pendulum.

Solution:

The time period of the simple pendulum can be calculated as $T = 2 * \pi \sqrt{\frac{L}{g}}$, and considering $g = 9.81\ m/s$, length of the pendulum $L = g * \left(\frac{T}{2\pi}\right)^2 = 0.995\ m$. Frequency is equal to $f = \frac{1}{T} = 0.5\ Hz$ and the angular frequency $\omega = \frac{2\pi}{T} = \pi\ \frac{rad}{s}$.

Answer: Length of the pendulum $L = 0.995\ m$. Frequency is equal to $f = 0.5\ Hz$ and the angular frequency $\omega = \pi\ \frac{rad}{s}$.