Pendulum I need to find t. T=2pi*sqrt L/g but I don't have L.Please help.

Solution

The period of the pendulum's motion is

$$T = \frac{1}{\nu} = 2\pi\sqrt{\frac{L}{g}}.$$

In other words,

$$L = \frac{T^2 g}{4\pi^2} = \frac{g}{4\nu^2\pi^2}.$$

If there is no L given, perhaps you work with a compound pendulum. In this case, L is

$$L = \frac{I}{mR},$$

where I – moment of inertia for given body, m – its mass, R – distance between the centre of mass and the pivot point. Thus,

$$T = 2\pi\sqrt{\frac{I}{mgR}}.$$

Answer

$$T = 2\pi\sqrt{\frac{I}{mgR}}$$