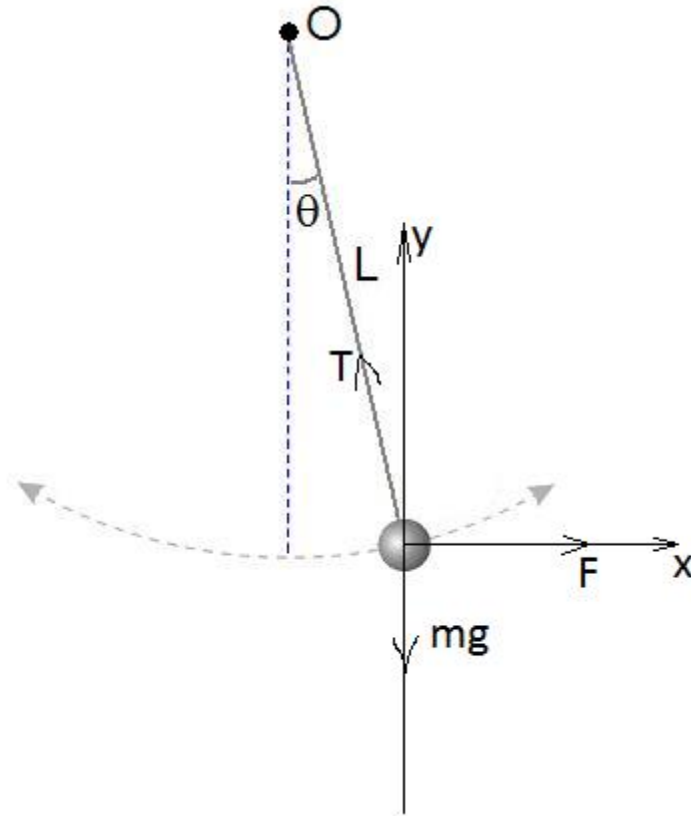**Answer on Question #49352, Physics, Mechanics - Kinematics - Dynamics**

A simple pendulum of mass m is suspended from a string of length l. What constant horizontal force must be applied on it so that string makes a maximum angle 60 from vertical

Solution

The force on a mass in projection:

    1. OX:

$$F = T \sin \theta$$

    1. OY:

$$mg = T \cos \theta$$

$$\frac{F}{mg} = \tan \theta \rightarrow F = mg \ \tan \theta$$

Answer: $F = mg \tan \theta$