

Module 01 - Lesson 2

Springs and Oscillations

Question 1: A 200-g mass on a spring is oscillating at 1.0 Hz, with total energy 0.52 J. What's the oscillation amplitude?

Question 2: A slingshot consists of a light leather cup containing a stone. The cup is pulled with a force of 10 N to stretch the rubber band of the slingshot by 1.0 cm. What is the potential energy stored in the rubber band when a 50-g stone is placed in the cup and pulled back 0.20 m from the equilibrium position?

Problem: A vertical spring stretches 4.0 cm when a 10-g object is hung from it. The object is replaced with a block of mass 25 g that oscillates up and down in simple harmonic motion. Calculate the period of motion and the maximum velocity of the oscillator.