A mass of 0.10 kg is connected to a spring and is free to oscillate on a horizontal frictionless surface. The mass is displaced 5.0 cm from the equilibrium position and released from rest. If the period of the motion is 0.60 s, find the force constant of the spring.

(A) 11 N/m
B. 15 N/m
C. 28 N/m
D. 7.7 N/m
E. 9.5 N/m

A simple harmonic oscillator has an amplitude of 10.0 cm. For what value of the displacement is the kinetic energy of the oscillator equal to three times its potential energy?

A. 2.50 cm
B. 7.50 cm
C. 3.33 cm
D. 6.67 cm
(E.) 5.00 cm

A 2.0 kg mass hangs on the end of a spring in the rest position. A force of 2.0 N pulls the mass down an additional 4.0 cm. If the force is then suddenly removed, the mass executes SHM. Find the total energy of the motion.

A. 2.2 J
B. 4.0 J
C. 0.26 J
D. 0.60 J
(E.) 0.04 J