Worksheet for Exploration 16.1: Spring and Pendulum Motion



The animations depict the motion of a mass on a spring and a pendulum, respectively.

i. If the ball has a mass of 1.00 kg, predict the spring constant for this system.

k_{spring}=____

ii. For the pendulum system, predict the period



a. For Animation 1, plot the period of the motion vs. amplitude. Drag the ball from equilibrium, varying the amplitude from 1 m to 10 m in 1-m steps.

Amplitude	Period

b. For Animation 2, plot the period of the motion vs. amplitude. Drag the ball from equilibrium, varying the amplitude from 0.1 radian to 1.0 radian in 0.1-radian steps.

Amplitude	Period

c. What can you say about the period's dependence on amplitude for each animation?