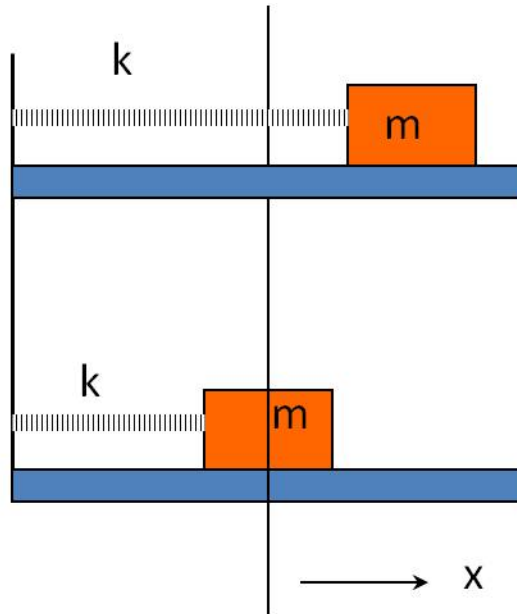


PENDULUM PERIOD WORKSHEET

Consider the simple harmonic oscillator pictured below.



The arbitrary constants of any simple harmonic oscillator expression are determined by the initial conditions. With this in mind, consider the oscillator expressions below:

$$x(t) = A \cos(\omega_0 t + \phi)$$

$$x(t) = B_p \cos(\omega_0 t) + B_q \sin(\omega_0 t)$$

If the initial conditions of the oscillating system in the figure are

$m = 0.01 \text{ kg}$; $k = 36 \text{ Nm}^{-1}$. At $t = 0$, m is displaced 50 mm to the right and is moving to the right at 1.7 ms^{-1} ,

Express the motion of the mass in

Form A (even groups)

Form B (odd groups)

by Janet Tate

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