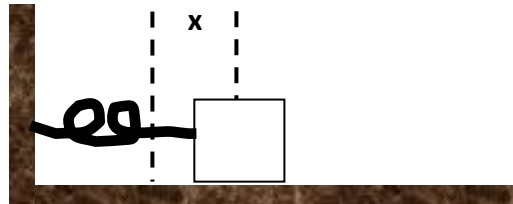


Spring-Mass Oscillator

One of the most common examples of a simple harmonic oscillator is a mass attached to a spring (assumed to be massless) with no damping (energy loss mechanism).

Like all SHO's, its position as a function of time can be described by either a sine or cosine function. The task is to use the information given to obtain other physical quantities including the angular frequency, amplitude, maximum velocity, total energy, etc.



Results

$$\omega =$$

$$T =$$

$$f =$$

$$X_{\max} =$$

$$V_{\max} =$$

$$a_{\max} =$$

$$E =$$

Proof

To show that the spring-mass is a simple harmonic oscillator, we start by finding its acceleration using Newton's Laws.

