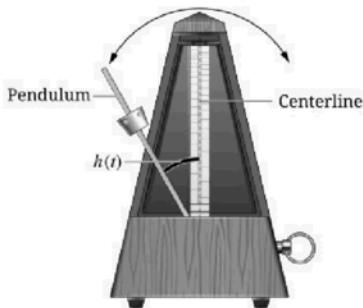


frq



Note: Figure not drawn to scale.

A metronome is a device used to help musicians play music at a particular speed. The metronome has a vertical centerline, as shown in the figure. A pendulum on the metronome swings back and forth as it passes the vertical centerline. When the pendulum is farthest to the left or farthest to the right, the measure of the angle formed by the pendulum and the vertical centerline is 0.5 radian.

At time $t = 0$ seconds, the pendulum is farthest to the left. The pendulum then swings to the right and passes the vertical centerline. At time $t = 2$ seconds, the pendulum is farthest to the right for the first time. Then, the pendulum swings left, passes the vertical centerline, and is farthest to the left again at time $t = 4$ seconds. As the pendulum swings, the measure of the angle formed by the pendulum and the vertical centerline periodically increases and decreases.

The sinusoidal function h models the measure of the angle, in radians, formed by the pendulum and the vertical centerline as a function of time t , in seconds. A negative value of $h(t)$ indicates the pendulum is to the left of the vertical centerline; a positive value of $h(t)$ indicates the pendulum is to the right of the vertical centerline.