

73 (a) Since $s(0) = -3$ inches, $a = -3$. Since the period is 0.8 seconds, the frequency is $F = \frac{1}{0.8} = \frac{5}{4}$.

$$\text{Thus } s(t) = a \cos(2\pi Ft) = -3 \cos\left(\frac{5\pi}{2}t\right).$$

(b) $s(1) = -3 \cos\left(\frac{5\pi}{2}\right) = -3(0) = 0$. The spring is at its natural length one second after the weight is released.

The weight is moving upward. See *Figure 73*.

$[0, 2, 0.5]$ by $[-6, 6, 1]$

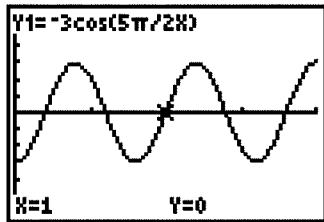


Figure 73