

Name _____

Nickname _____

1. An SHO with an amplitude of 0.470 m has a speed of 2.15 m/s when it is 0.230 m from equilibrium. What is its period? What is its position when it has a velocity of 1.10 m/s? What is its acceleration when it is at $x = -0.370$ m?

2. An SHO has an equation of position (in m) of $x = 7.20\sin(5.10t)$ What is its maximum velocity? What is its acceleration when it is at $x = +4.20$ m?

3. Write the equation of position for an SHO that has an equation of velocity of $v = 24.0\cos(6.00t)$. What is its position and velocity at $t = 11.2$ s?

4. An SHO has a mass of 3.61 kg, a period of 4.17 s, and a total energy of 15.7 J. What is its amplitude?

5. An SHO has a mass of 1.83 kg, a frequency of 10.0 Hz, and amplitude of 0.180 m. What is its potential energy when it is 0.130 m from equilibrium?