Worksheet simple harmonic motion solutions

**1.** Name two types of potential energy.

Two types of potential energy are gravitational potential energy, and elastic potential energy.

**2.** In Hooke's law, the x represents a displacement, which is the change in position. A change between what two positions?

The x in Hooke's law represents a displacement between the equilibrium position and some strained position.

**3.** Write a one word answer for the following two questions.

**(a)** If you're counting the number of cycles that occur during a set amount of time, what are you measuring?

Frequency

**(b)** If you're counting the amount of time that occurs during a set cycle, what are you measuring?

Period

**4.** Starting at a compressed amplitude, a chunk of copper oscillates on a string with a frequency of 15Hz and an amplitude of 0.2m .

**(a)** What is the copper's period?

**(b)** What is the copper's angular speed?

**(c)** What is the copper's maximum velocity?

**(d)** What is the copper's maximum acceleration?

**(e)** After 8s have passed, what is the copper's velocity?

**(f)** After 8s have passed, what is the copper's acceleration?

**(g)** After 8s have passed, how far from equilibrium is the copper?