

Name _____

Date _____

Mr Rawson



Simple Harmonic Motion I

1. If a mass of 0.55 kg attached to a vertical spring stretches the spring 2.0 cm from its original equilibrium, what is the spring constant of the spring?
2. How much force is required to pull a spring 3.0 cm from its equilibrium position if the spring constant is $2.7 \times 10^3 \text{ N}\cdot\text{m}^{-1}$?
3. An ideal mass-spring system vibrating with simple harmonic motion would oscillate indefinitely. Explain why.

4. Will the period of a vibrating mass-spring system on Earth be different from the period of an identical mass-spring system on the moon? Why or why not?
5. A spring with a spring constant of $1.8 \times 10^2 \text{ N}\cdot\text{m}^{-1}$ is attached to a 1.5 kg mass and then set in motion.
- What is the period of the mass-spring system?
 - What is the frequency of the vibration?