

SIMPLE HARMONIC MOTION WORKSHEET

NAME _____

PERIOD _____

1. A 100.0-g mass is suspended from a spring whose constant is 50.0 N/m. The mass is then pulled down 1.0 cm and then released. (a) What is the amplitude of the resulting oscillations? (b) What is the frequency?

Answer (a) _____

Answer (b) _____

2. A 1000. kg car bounces up and down on its springs once every 2.0s. What is the spring constant of its springs?

Answer _____

3. A 25-kg portable gasoline-powered generator is mounted on a set of 4 springs. If the springs are depressed by 4.0 mm by the mass, what is the natural frequency of the spring-generator combination?

Answer _____

4. A 50.0-g teacup is suspended from a spring and oscillates with a period of 1.5 s. What will be the period when a 120-g mug is suspended from the same spring?

Answer _____

5. A spring has a 1.0-s period of oscillation when a 20.0 N weight is suspended from it. Find the elongation of the spring when a 50.0 N spring is suspended from it.

Answer_____

6. A 20.0-kg chandelier is suspended from a high ceiling with a cable 6.0-m long. What is its period of oscillation as it swings?

Answer_____

7. A pendulum oscillates 24.0 times per minute in a particular location. If the pendulum is 1.53 m long, what is the acceleration due to gravity there?

Answer_____