NAME _____ DATE _____ CLASS _____

Section 12-2

HOLT PHYSICS

Math Skills

Measuring Simple Harmonic Motion

1. A spring-mass system vibrates exactly 10 times per second. Find its period and its frequency.

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2. A pendulum swings with a period of 0.20 seconds.

a. What is its frequency?

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b. How many times does it pass the lowest point on its path in 1.0 second? in 7.0 seconds?

_____

3. A spring-mass system completes 20.0 vibrations in 5.0 seconds, with a 2.0 cm amplitude.

a. Find its frequency and its period.

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b. The same mass is pulled 5.0 cm away from the equilibrium position, then released. What will the period, the frequency, and the amplitude be?

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4. A pendulum completes 30.0 oscillations per minute. Find its frequency, its period, and its length.

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5. A spring has a 2.000×10^3 N/m spring constant.

a. What mass will make it oscillate 5.0 times per second? 10.0 times per second?

_____

b. You want the mass-spring system to operate at a higher frequency. Should you increase or decrease the mass?

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