



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Understand: Oscillatory Motion ✓ Understand: Period and Frequency ✓ Understand: Amplitude
✓ Understand: Restoring Force



Section A • Concept Check

• BEGINNER

4 × 1 = 4

- 1 A pendulum swings once every 1.5s. Find its frequency.

- 2 An oscillator has frequency 25 Hz. Find its period.

- 3 A guitar string vibrates with period 0.004s. Find its frequency.

- 4 What is the equilibrium position in an oscillating system?



Section B • Problem Solving

• INTERMEDIATE

4 × 3 = 12

- 5 Why does a mass on a spring oscillate rather than just returning to equilibrium and stopping?

- 6 If an oscillation has period 0.5s, how many oscillations occur in 10 seconds?

- 7 What term describes the gradual decrease in amplitude of a real oscillating system over time?

- 8 Why is a frictionless, undamped oscillation an idealization rather than something observed in the real world?



Section C • Challenge

• CHALLENGE

2 × 2 = 4

- 9 A clock pendulum has frequency 1 Hz. Find its period.

- 10 Give a real-world example of oscillatory motion.

Reflection — the most useful thing I learned: _____

⌘ ANSWER KEY – FOLD OR CUT BEFORE HANDING OUT

1 = $1/1.5 \approx 0.67$ Hz 2 = 0.04 s 3 = 250 Hz 4 = The central rest position the system oscillates around | 5 = Its inertia carries it past equilibrium, and the restoring force then pulls it back, repeating the cycle 6 = 20 oscillations 7 = Damping 8 = Real systems always experience some energy loss due to friction, air resistance, or other resistive forces | 9 = 1 second 10 = Any valid example, e.g. a swinging pendulum, a vibrating guitar string, or a bouncing spring