Name: Guided Reading

Chapters 11-13

Ch 11

1. What kind of motion is a swing?

2. The part of a harmonic motion that repeats over and over is its

3. If we start the cycle of a pendulum at the right hand side, where must the cycle end?

4. A system that shows harmonic motion is called an

5. Give an example for #4.

6. The time for one cycle is called the

7. The number of cycles per second is called

8. Where do we hear this word in everyday life?

9. 440 cycles per second can also be called 440

10. Write the equation (with units) for period and frequency.

Period: Frequency:

11. (pg. 189) We call the size of a cycle its

12. When a pendulum swing far from the center does it have a lot of amplitude or a little?

13. When friction slows harmonic motion it is called

14. What is the amplitude of the graph on page 191?

15. What is the period of the same graph?

16. How many complete cycles are shown in the graph?

17. Write the equation for amplitude here:

18. On page 193, do the graphs show harmonic motion in phase or out-of-phase?

19. Give two examples of oscillators.

Ch 12

20. (pg 202) Consider a pendulum and a wave, what is one big difference between the two? (hint: read “evidence for suspecting there are waves)

21. Which of these is NOT a wave: X-ray, sound, wheel spinning, light

22. What is the difference between a longitudinal wave and a transverse wave?

23. What 3 basic properties do oscillators and waves have in common?

24. What is the symbol (Greek letter) we use for wavelength?

25. Write the equation for the speed of a wave.

26. If have wave with a 3m wavelength has a frequency of 4Hz, find the speed of the wave. (show your work)

27. The high point of a wave is called the

28. The low point of a wave is called the

29. What kind of wave goes in straight lines?

30. When a wave bounces off something it is called

31. When a wave bends while going **through** something we call it

32. When a wave bends while going **around** something we call it

33. When a wave disappears inside of something we call it

34. (pg 211) What is the difference between a node and an antinode?

35. Which harmonic of a vibrating string has two antinodes?

36. (pg. 212) When two waves collide and make a bigger wave we call this

37. When two waves collide an cancel each other out or make a smaller wave we call this

Ch13

38. The tiny fluid-filled organ in the inner ear that allows us to hear is the

39. What is the range of hearing for most humans?

40. How does loud noise damage your hearing?

41. What is ultrasound? Include the frequency and 2 uses.

42. The measure of a force felt by the walls of a container holding a gas is

43. Name two ways to increase the pressure of a gas

44. Harmonic motion is an of pressure and the wave is a

45. What type of waves are sound waves?

46. We measure the loudness of sound in

47. What is the amplitude of a sound wave?

48. The science and technology of sound is

49. What are some ways to soundproof an area?

50. How are frequency and pitch related?

51. A special kind of graph that shows how loud sound is at different frequencies is a

52. An equal mixture of all frequencies is called

53. Why are the pipes on pipe organ different sizes?

54. What is the speed of sound? Give both metric and standard units.

55. Pleasant combinations of frequencies are

56. Unpleasant combinations of frequencies are