**Concept Review: Waves & Sound**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_\_

**Chapter 25: Waves**

1. a. What is a vibration?

b. What is a wave?

2. What is the period of a pendulum?

3. What is the period of a pendulum that takes one second to make a complete back-and-forth vibration?

4. Suppose that a pendulum has a period of 1.5 seconds. How long does it take to make a complete back-and-forth vibration? Is this 1.5-second period pendulum longer or shorter in length than a 1-second period pendulum?

5. How is a sine curve related to a wave?

6. Label and distinguish among these different parts of a wave: amplitude, crest, trough, and wavelength. What is the frequency if the time in the drawing represents 1 second? What is the period?



7. Distinguish between the period and the frequency of a vibration or a wave. How do they relate to one another?

8. Does the medium in which a wave travels move along with the wave itself? Defend your answer.

9. How does the speed of a wave relate to its wavelength and frequency?

10. As the frequency of sound is increased, does the wavelength increase or decrease? Give an example.

11. A nurse counts 76 heartbeats in one minute. What are the period and frequency of the heart’s oscillations?

12. New York’s 300-m high Citicorp tower oscillates in the wind with a period of 6.80 s. calculate its frequency of vibration.

13. Calculate the speed of waves in a puddle that are 0.15 m apart and made by tapping the water surface twice each second.

14. Distinguish between a transverse wave and a longitudinal wave. Indicate the interval(s) which represents one full wavelength on both types of waves.





15. Several positions along the medium are labeled with a letter. Categorize each labeled position along the medium as being a position where either constructive or destructive interference occurs.



G – H -

I - J -

K - L -

N - O -

16. Is interference a property of only some types of waves or of all types of waves?

17. Label the drawing with the following

Terms: antinodes and nodes.

The number of antinodes in the standing wave is?

18. When a wave source moves toward a receiver, does the receiver encounter an increase in wave frequency, wave speed, or both?

19. Does the Doppler Effect occur for only some types of waves or all types of waves?