

Name: \_\_\_\_\_

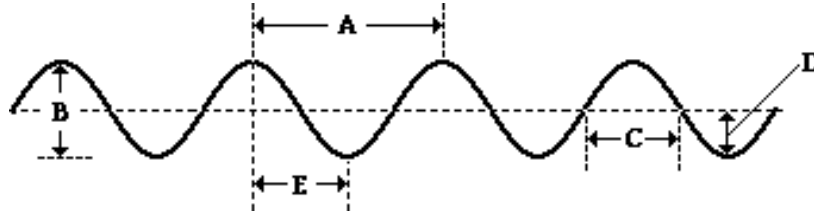
Period: \_\_\_\_\_

Date: \_\_\_\_\_

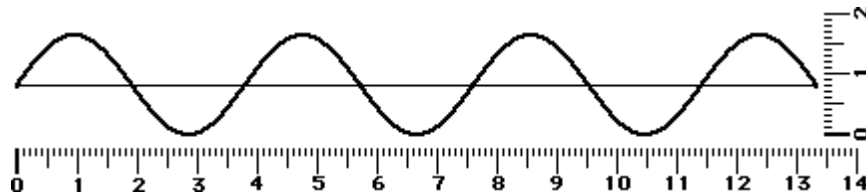
**Wave Interference Worksheet**

Total Points: \_\_\_\_ / 45

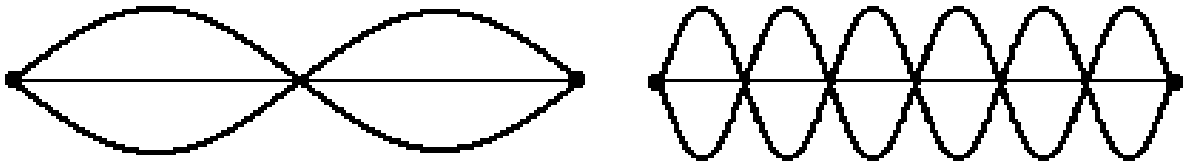
1. The wavelength of the wave in the diagram below is given by letter \_\_\_\_ and the amplitude of the wave is given by letter \_\_\_\_\_. (2)



2. A sine curve that represents a transverse wave is drawn below. Use the centimeter ruler to measure the wavelength and amplitude of the wave (include units) (2)
- a. Wavelength: \_\_\_\_\_ b. Amplitude: \_\_\_\_\_



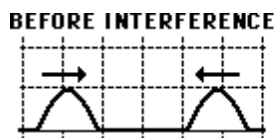
3. How many nodes and antinodes are in each of these diagrams? (4)



Nodes: \_\_\_\_\_ Antinodes: \_\_\_\_\_ Nodes: \_\_\_\_\_ Antinodes: \_\_\_\_\_

4. **True or False:** \_\_\_\_\_ Constructive interference occurs when a crest meets up with another crest at a given location along the medium. (1)
5. **True or False:** \_\_\_\_\_ Destructive interference occurs when a trough meets up with another trough at a given location along the medium. (1)

6. Determine whether the following diagram will produce constructive, destructive, or complete destructive interference, and explain why. What is the height of the resulting amplitude? (3)



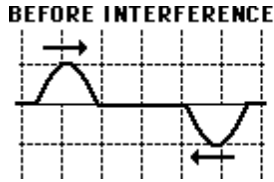
Points: \_\_\_\_ / 13

Name: \_\_\_\_\_

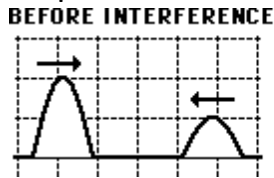
Period: \_\_\_\_\_

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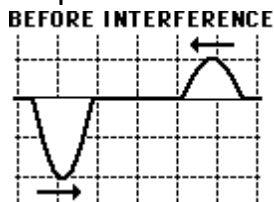
7. Determine whether the following diagram will produce constructive, destructive, or complete destructive interference, and explain why. What is the height of the resulting amplitude? (3)



8. Determine whether the following diagram will produce constructive, destructive, or complete destructive interference, and explain why. What is the height of the resulting amplitude? (3)

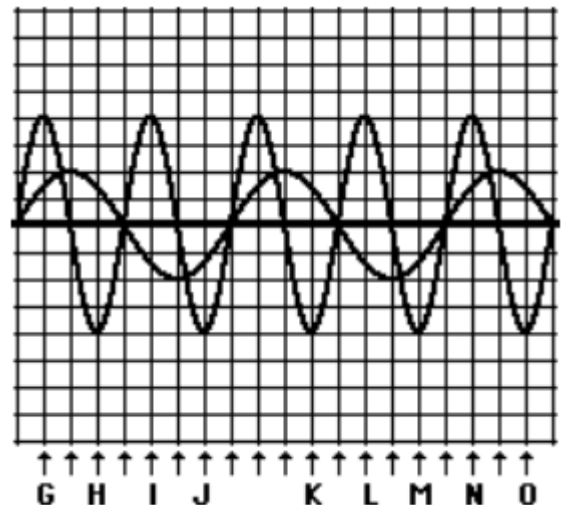


9. Determine whether the following diagram will produce constructive, destructive, or complete destructive interference, and explain why. What is the height of the resulting amplitude? (3)



10. Several of the positions on the chart below are marked with a letter. Categorize each labeled position along the medium as being a position where either constructive or destructive interference occurs. (8)

- G. \_\_\_\_\_
- H. \_\_\_\_\_
- I. \_\_\_\_\_
- J. \_\_\_\_\_
- L. \_\_\_\_\_
- M. \_\_\_\_\_
- N. \_\_\_\_\_
- O. \_\_\_\_\_

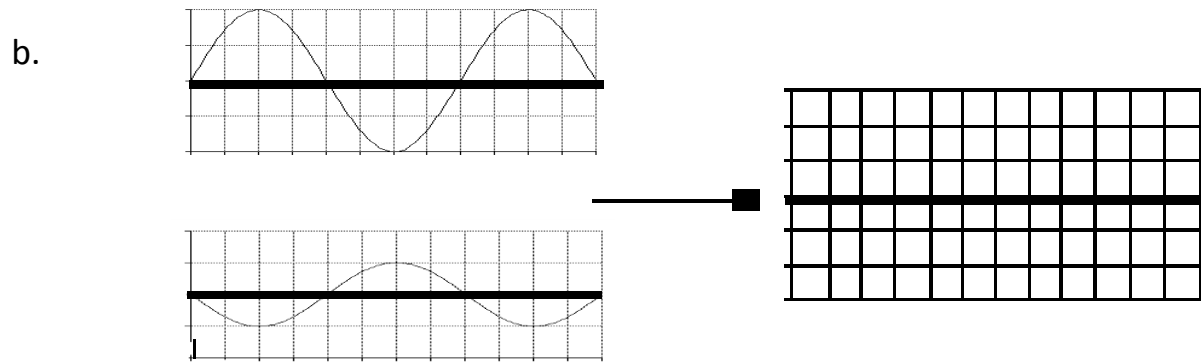
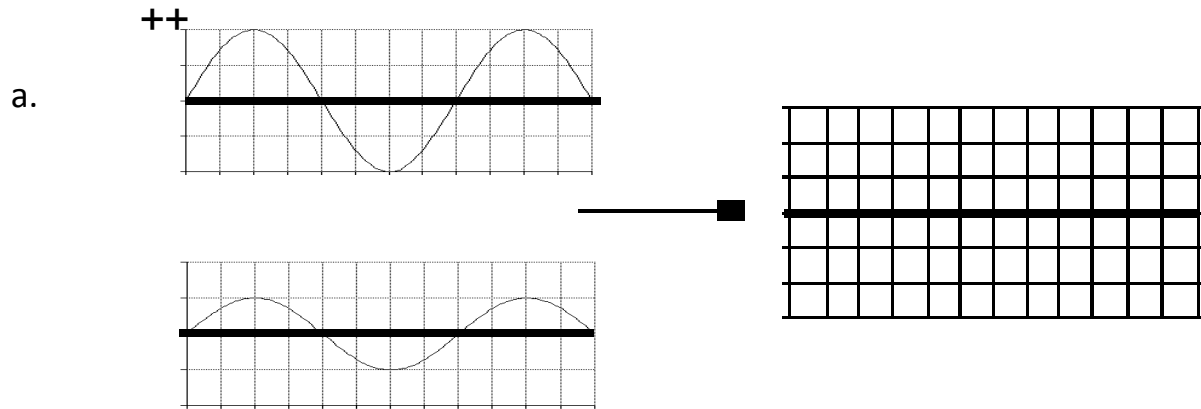


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11. In each set of waves below, the two waves at the left represent two waves traveling at the same time. Combine the two waves and show the results at the right. (10)



c. The top example is an example of \_\_\_\_\_ interference, which would produce a (louder, softer) \_\_\_\_\_ sound.

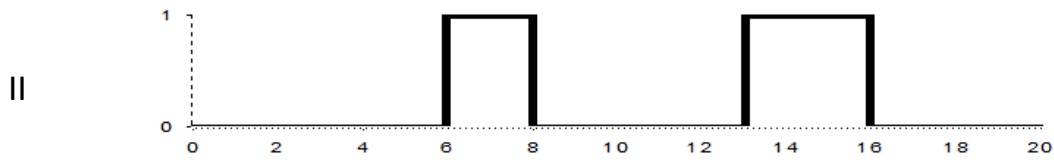
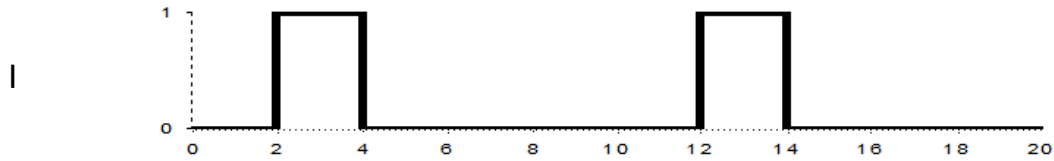
d. The bottom example is an example of \_\_\_\_\_ interference, which would produce a (louder, softer) \_\_\_\_\_ sound.

Name: \_\_\_\_\_

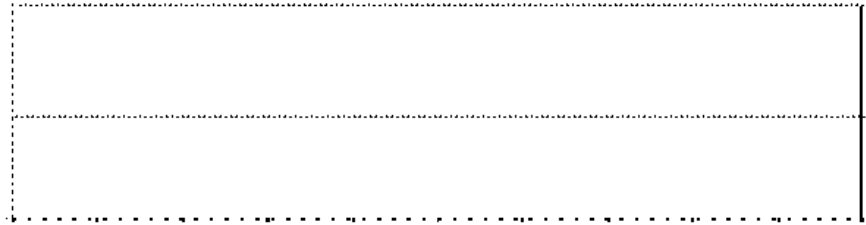
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Date: \_\_\_\_\_

12. The waves shown in the diagram below are square pulse waves. If wave I meets wave II, show their superposition on the line below: (5)



I + II



Points: \_\_\_\_ / 5