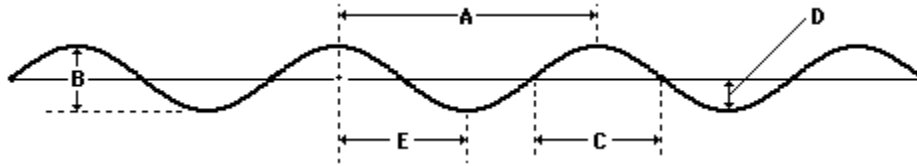


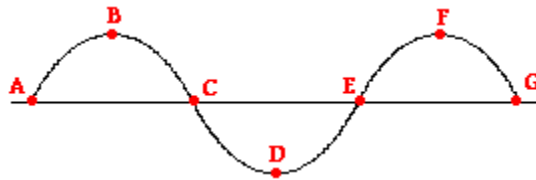
# Waves Practice Questions

Name \_\_\_\_\_ EN \_\_\_\_\_

Consider the diagram below in order to answer questions #1-2.

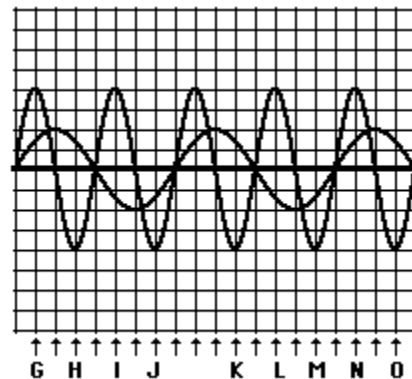


- The wavelength of the wave in the diagram above is given by letter \_\_\_\_\_.
- The amplitude of the wave in the diagram above is given by letter \_\_\_\_\_.
- Indicate the interval that represents one full wavelength.



- A to C
  - B to D
  - A to G
  - C to G
- An ocean wave has an amplitude of 2.5 m. Weather conditions suddenly change such that the wave has an amplitude of 5.0 m. The amount of energy transported by the wave is \_\_\_\_\_.
- halved
  - doubled
  - quadrupled
  - remains the same
- 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.

	Constructive or Destructive		Constructive or Destructive
G		K	
H		L	
I		M	
J		N	



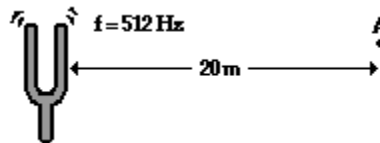
- A teacher attaches a slinky to the wall and begins introducing pulses with different amplitudes. Which of the two pulses (A or B) below will travel from the hand to the wall in the least amount of time? Justify your answer.



7. The teacher then begins introducing pulses with a different wavelength. Which of the two pulses (C or D) will travel from the hand to the wall in the least amount of time? Justify your answer.



8. The time required for the sound waves ( $v = 340 \text{ m/s}$ ) to travel from the tuning fork to point A is \_\_\_\_\_.



- a. 0.020 second
- b. 0.059 second
- c. 0.59 second
- d. 2.9 second

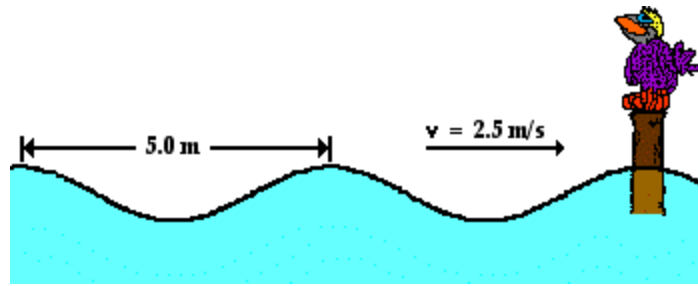
9. As the wavelength of a wave in a uniform medium increases, its speed will \_\_\_\_\_.

- a. decrease
- b. increase
- c. remain the same

10. As the wavelength of a wave in a uniform medium increases, its frequency will \_\_\_\_\_.

- a. decrease
- b. increase
- c. remain the same

11. The water waves below are traveling along the surface of the ocean at a speed of  $2.5 \text{ m/s}$  and splashing periodically against Wilbert's perch. Each adjacent crest is  $5 \text{ meters}$  apart. The crests splash Wilbert's feet upon reaching his perch. How much time passes between each successive drenching? Answer and explain using complete sentences.



12. Doubling the frequency of a wave source doubles the speed of the waves. **TRUE** or **FALSE**?

13. The speed of a wave depends upon (i.e., is causally affected by) ...

- a. the properties of the medium through which the wave travels
- b. the wavelength of the wave.
- c. the frequency of the wave.
- d. both the wavelength and the frequency of the wave.

14. Mac and Tosh stand 8 meters apart and demonstrate the motion of a transverse wave on a snakey. The wave can be described as having a vertical distance of 32 cm from a trough to a crest, a frequency of 2.4 Hz, and a horizontal distance of 48 cm from a crest to the nearest trough. Determine the amplitude, period, and wavelength and speed of such a wave.

15. Dawn and Aram have stretched a slinky between them and begin experimenting with waves. As the frequency of the waves is doubled,

- a. the wavelength is halved and the speed remains constant
- b. the wavelength remains constant and the speed is doubled
- c. both the wavelength and the speed are halved.
- d. both the wavelength and the speed remain constant.

16. A ruby-throated hummingbird beats its wings at a rate of about 70 wing beats per second.

a. What is the frequency in Hertz of the sound wave?

b. Assuming the sound wave moves with a velocity of 350 m/s, what is the wavelength of the wave?

17. Ocean waves are observed to travel along the water surface during a developing storm. A Coast Guard weather station observes that there is a vertical distance from high point to low point of 4.6 meters and a horizontal distance of 8.6 meters between adjacent crests. The waves splash into the station once every 6.2 seconds. Determine the frequency and the speed of these waves.

18. Two boats are anchored 4 meters apart. They bob up and down, returning to the same up position every 3 seconds. When one is up the other is down. There are never any wave crests between the boats. Calculate the speed of the waves.

