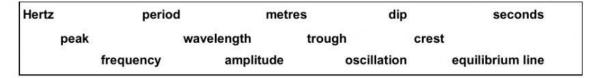
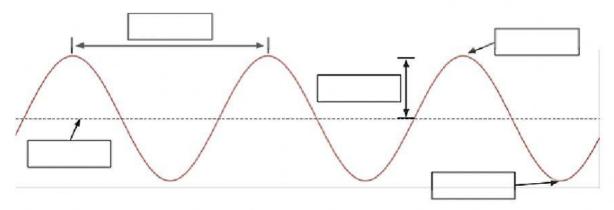
## **Properties of Waves**

- 1. Complete the following statements:
  - Waves transfer \_\_\_\_\_ without transferring \_\_\_\_\_.
  - Mechanical waves \_\_\_\_\_ travel through empty space.
  - Electromagnetic waves \_\_\_\_\_ travel through empty space.
  - Transverse waves move \_\_\_\_\_\_\_ to the direction of the wave.
  - Longitudinal waves move \_\_\_\_\_\_ to the direction of the wave.
- 2. Use words in the box to complete the diagram.





3. Select which property of a wave is being described in each statement.

\_\_\_\_\_ The top of a wave.

The bottom of a wave.

The number of waves that pass in 1 second.

The time it takes for one wave to pass or complete a cycle.

The maximum height of a wave from the equilibrium line (rest position).

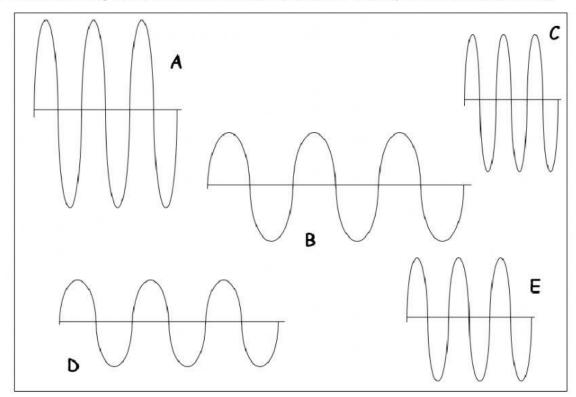
The distance between two consecutive troughs.

Waves that travel perpendicular to the energy movement.

Waves that require a medium to travel through.



4. Use the following waves to answer the next set of questions. You may need to use a ruler to help!

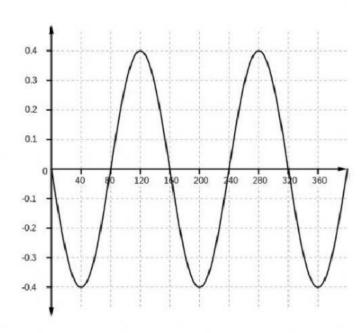


- a) Which wave has the highest crest?
- b) Which wave has the lowest crest?
- c) Which wave has the highest trough?
- d) Which wave has the lowest trough?
- 5. For the wave pictured on the right.

Determine the magnitude of the:

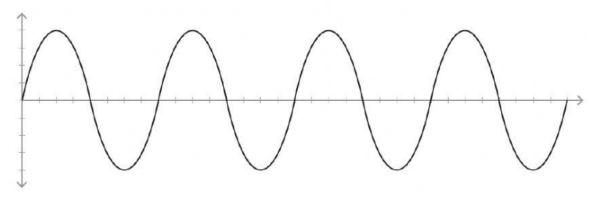
- a) Wavelength:
- b) Amplitude:
- c) Frequency:
- If the wavelength of a wave decreased in size, the frequency would ...

- e) Which wave has the shortest wavelength?
- f) Which wave has the longest wavelength?
- g) Which wave has the highest frequency?
- h) Which wave has the lowest frequency?

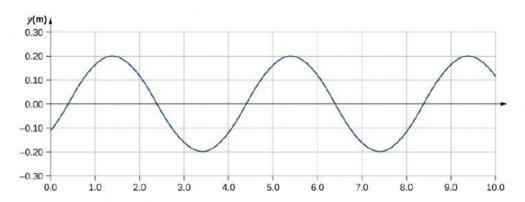




7. Use the diagram below to answer the following questions. Assume that the scale on both axes is going up by 2.



- a) What is the magnitude of the amplitude of this wave?
- b) What is the magnitude of one wavelength of this wave?
- c) How many complete wave cycles are shown in the diagram?
- d) Would a wave with a wavelength of 8 have a higher or lower frequency?
- e) Would a wave with an amplitude of 4 have a higher or lower trough?
- 8. Use the diagram below to answer the following questions.



- a) What is the magnitude of the amplitude of this wave?
- b) What is the magnitude of one wavelength of this wave?
- c) How many complete wave cycles are shown in the diagram?