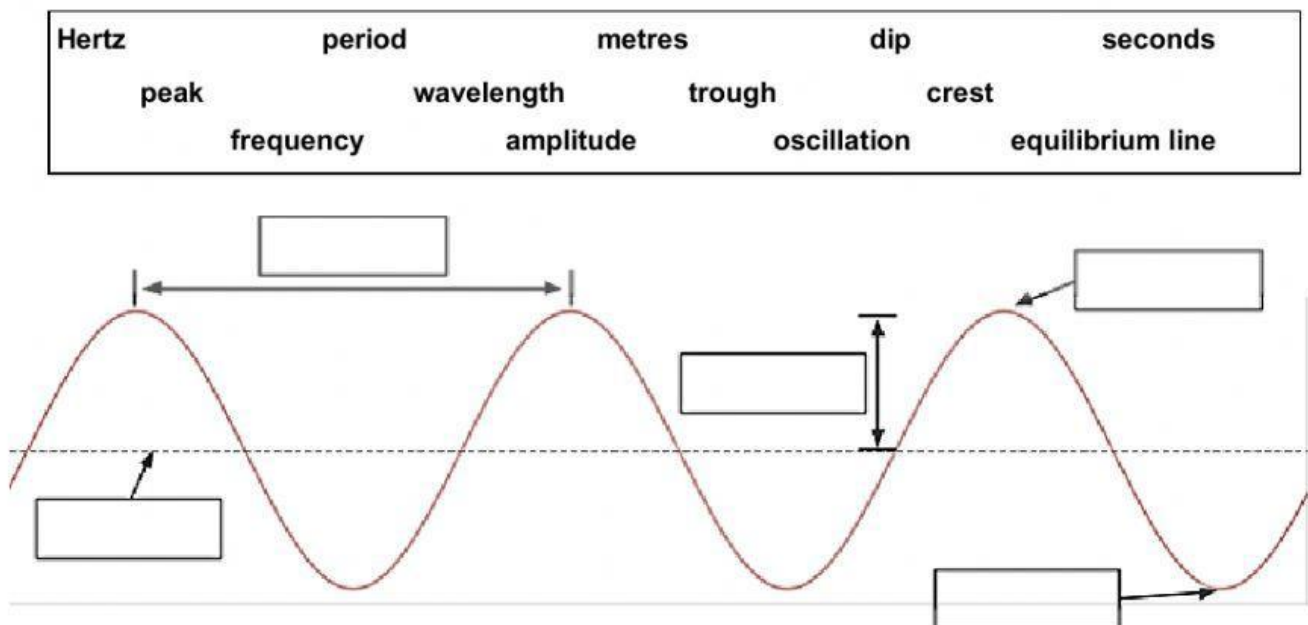


Properties of Waves

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.

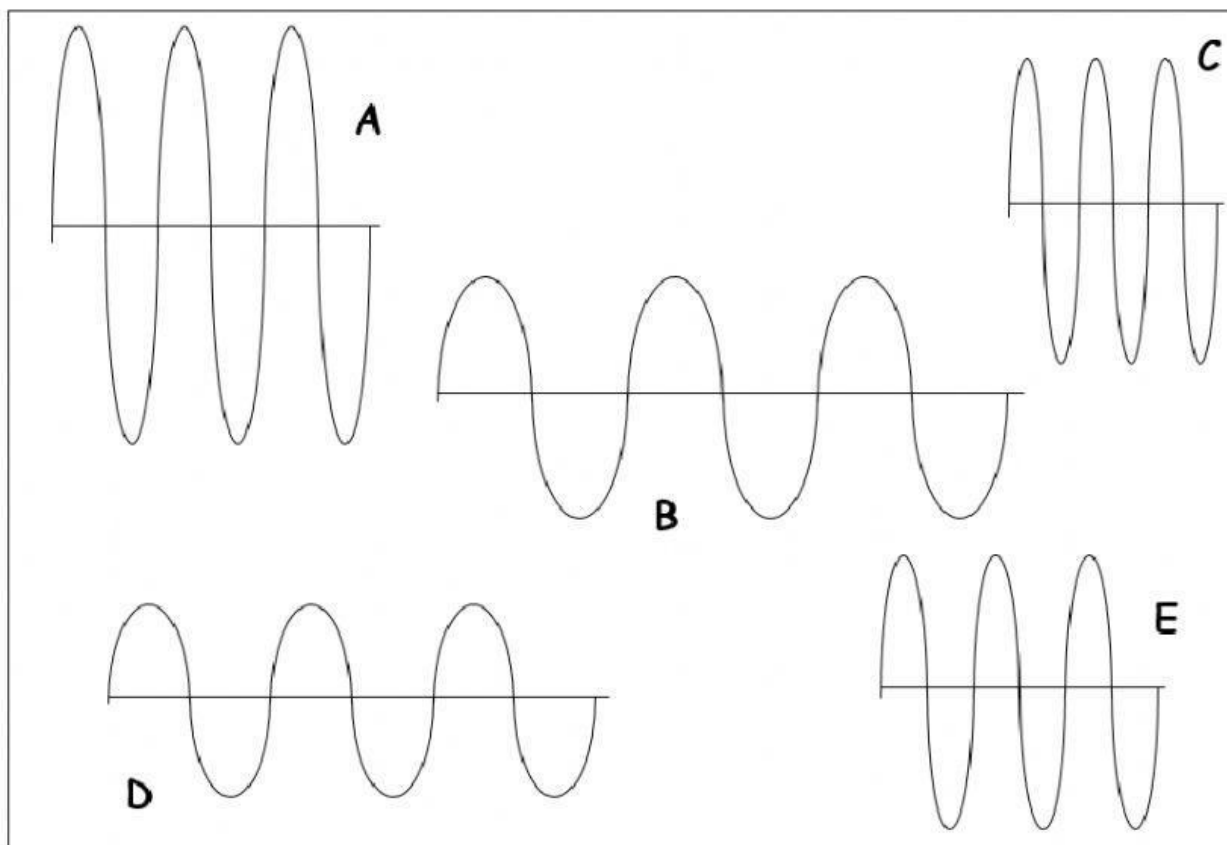
2. Use words in the box to complete the diagram.



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!

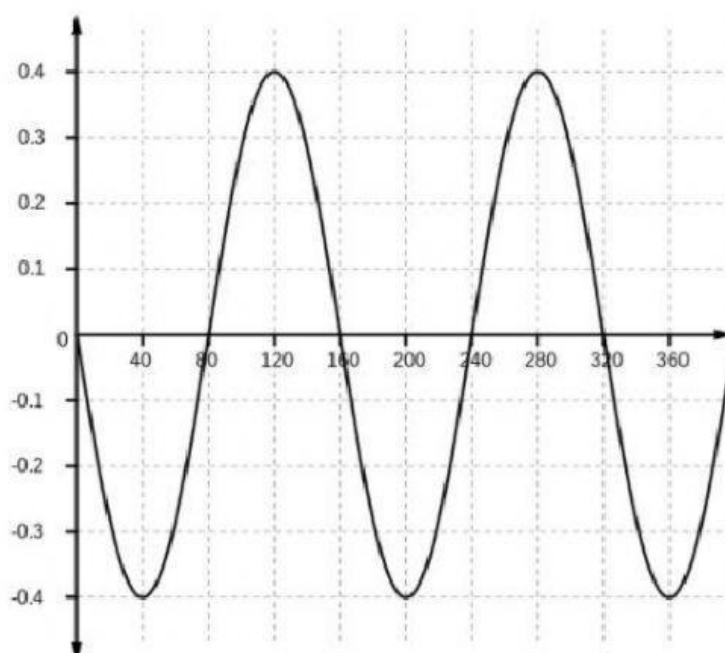


- Which wave has the highest crest?
- Which wave has the lowest crest?
- Which wave has the highest trough?
- Which wave has the lowest trough?
- Which wave has the shortest wavelength?
- Which wave has the longest wavelength?
- Which wave has the highest frequency?
- Which wave has the lowest frequency?

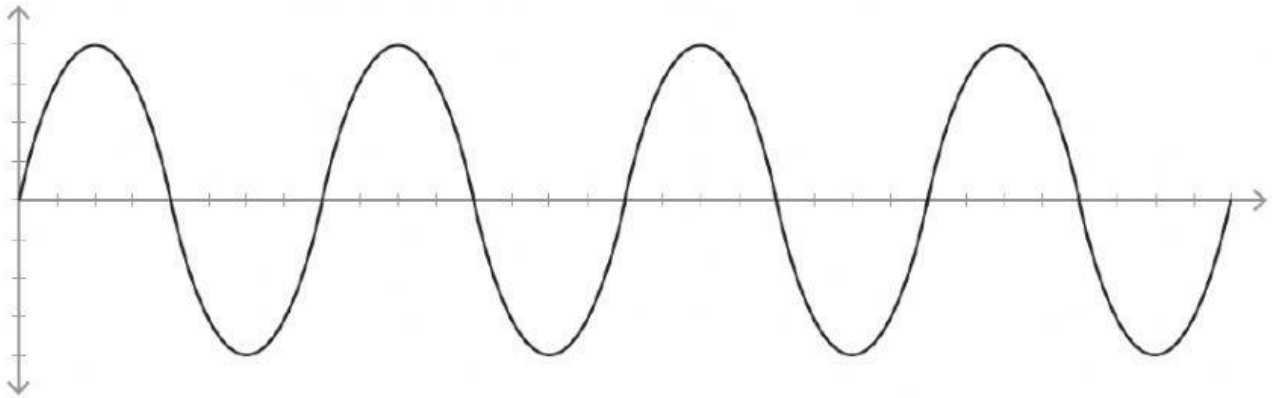
5. For the wave pictured on the right. Determine the magnitude of the:

- Wavelength:
- Amplitude:
- Frequency:

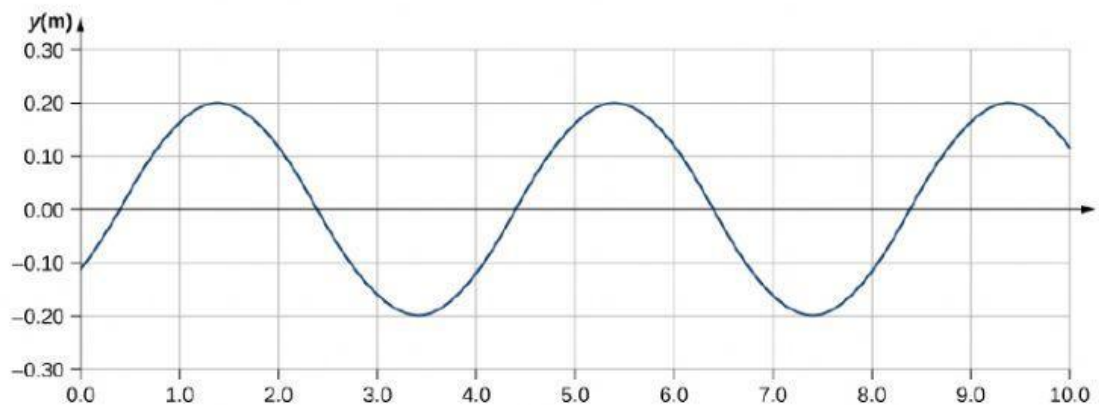
6. If the wavelength of a wave decreased in size, the frequency would ...



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



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



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