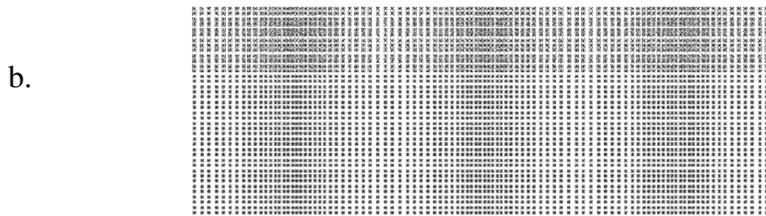
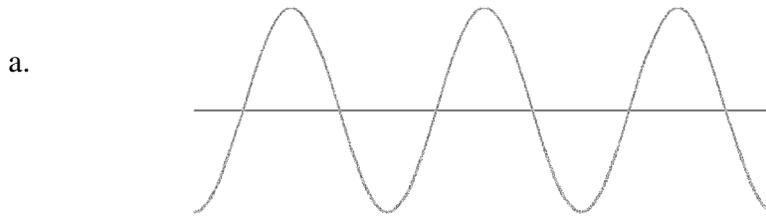


1. As a wave passes through a medium, the particles vibrate. The particles always vibrate back and forth, returning to the starting position after the wave passes, but they can vibrate back and forth along the direction of travel, or at right angles to the direction of travel.

- a. Which way do the particles move in transverse waves?
  
- b. Which way do the particles move in longitudinal (compression) waves?

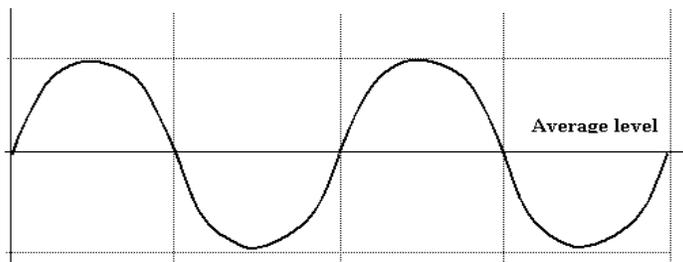
2. Identify these wave forms as representing compression waves or transverse waves by writing the appropriate identifier below the diagram.



3. Label a compression and a rarefaction in the following wave.



4. Label the wavelength, amplitude, rest, crest, trough on the wave below.



5. Define what a wave is:

6. Identify the **medium** for these waves: (*The medium is what they travel through.*)
- a. Waves on a pond.
  - b. Waves on a rope.
  - c. Sound waves from people talking.
  - d. Earthquake waves.
  - e. Sound waves on train track
7. A characteristic of waves is that after the wave has passed through a medium, the medium is:

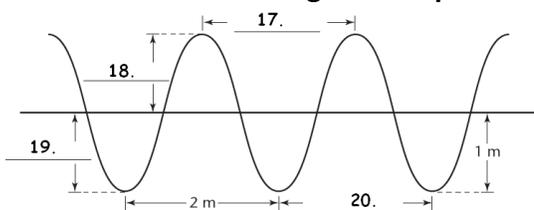
(disturbed or undisturbed).

8. A cork is floating in the water 20 meters from the shore of a lake. No wind is blowing, but waves from a passing boat are moving directly toward the shore. After the waves pass, where will the cork be relative to the shore? Will it be less than 20 meters, more than 20 meters, about 20 meters, or is it impossible to tell. Explain your answer.
9. What is period (T) related to waves?
10. What is the frequency (f) related to waves?
11. When a wave travels through a medium, what happens to the medium after the wave has moved on?

**Circle the correct answer in parenthesis in each sentence.**

12. The amplitude of a wave can be measured from the (medium, crest) or the (trough, wavelength) to the rest position of the wave's medium.
13. Waves with greater amplitudes carry (more, less) energy than waves with smaller amplitudes.
14. The wavelength of a transverse wave is often measured from (crest to crest, crest to trough).
15. The number of waves that pass a point in one (second, minute) is the wave's (amplitude, frequency).
16. Waves with longer wavelengths have a (lower, higher) frequency and waves with shorter wave-lengths have a (lower, higher) frequency.

**Label 17-20 as wavelength or amplitude.**



17. \_\_\_\_\_
18. \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_