# W1 -Mechanical Waves

1. The illustration below shows a series of transverse waves. Label each part in the space provided.

a.

b.

c

e

f

a

b

d

g

c.

d.

e.

f.

g.

2. Waves carry from one place to another.

3. The highest point on a transverse wave is the while the lowest part is the .

4. The is the height of the wave.

5. The distance from one crest to the next is the .

6. Below are a series of waves. Underneath each diagram write the numbers of waves in the series.

C.

B.

A.

D.

a. Which of the above has the biggest amplitude?

b. Which of the above has the shortest wavelength?

c. Which of the above has the longest wavelength?

7. Express in words and mathematically the relationship between

a. period and frequency

b. wavelength and frequency

c. wavelength and period

8. Consider a wave generator that produces 10 oscillations per second. The speed of the waves is 300. cm/s.

1. What is the period of the oscillation?
2. What is the frequency of the oscillation?
3. What is the wavelength of the waves?
4. What happens to the wavelength if the frequency of pulses is increased?

9. A wave on Lake Galena passes by two docks that are 40.0 m apart.

a. If there is a crest at each dock and another three crests between the two docks, determine the wavelength.

b. If 10 waves pass one dock every 16.0 seconds, determine the period and frequency of the wave.

c. What is the speed of the wave?

10. The wavelength of a sound wave in this room is 1.13 m and the frequency is 301 Hz.

a. What is the speed of the wave in the room?

b. If you double the frequency of the sound wave, determine its speed. How do you know?

c. What happens to the wavelength if you cut the frequency in half? How do you know?