

Name _____

Number _____

PERIOD 8

$P = \frac{1}{f}$ $v = \lambda \cdot f$ speed of sound = 343 m/s *Show work for credit!*

1) You are standing on a cliff and watching ocean waves come toward the shore. You count 10 waves pass a rock in 50 seconds. (12 points)

a) What is the frequency of the wave in Hertz? _____ (4 pts)

b) What is the period of the wave? _____ (4 pts)

c) If the wave crests are about 15 m apart, what is the speed of the wave?

_____ (4 pts)

2) A certain sound wave has a frequency of 100 Hz. What is the wavelength of the sound wave? (4 pts)

3) **List** and **explain** 2 behaviors of light “waves” that are similar to water waves we have studied in class. (3 points each)

A)

B)

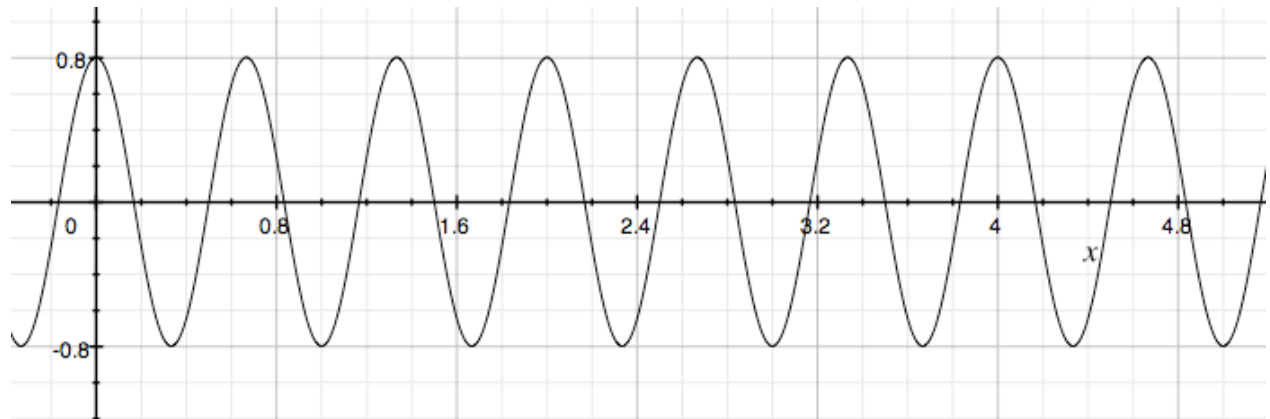
4) A water wave makes 6 complete oscillations in a length of 4 meters, as shown in the graph below. The units on both the x and y-axis are meters. The speed of the water wave is 10 m/s. (10 points)

From the figure and information given, determine the wave's

(a) amplitude

(b) wavelength

(c) frequency



(the units are meters on each axis)

5) Pendulum Problem (10 points)

A pendulum with a length of 1 meter is shown in lab to have a period of 2 seconds when pulled back 20 degrees.

a) Explain what would happen to the **frequency** if the length of the pendulum were decreased. (would it change? If so, up or down?)

b) Explain what would happen to the **period** if the angles was changed to 10 degrees. (would it change? If so, up or down?)