Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Wavelength, Amplitude and Frequency

1. Which of the following waves has the largest wavelength?
	1. 
	2.
	3. 
	4.
	5.

A.

1. What determines the energy in a wave?



B.

1. Which of the waves to the right carries the most energy?

C.

1. Which of the waves to the right carries the least energy?
2. Measure the wavelength of each wave:



* 1.



* 1.



1. Determine the frequency of each wave:



* 1.

1

0



3

2

* 1.

4

5

0

* 1. 

1

2

3

2

1

0

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Frequency, Wavelength, Period and Wave Speed

Equations: v = λ\**f* ­*f* = 1/p p = 1/*f*

1. The Sears Tower sways back and forth with a period of 0.10 seconds. What is its frequency of vibration?
2. An ocean wave has a length of 10.0 m. A wave passes a fixed location every 2.0 s. What is the speed of the wave?
3. Water waves in a shallow dish are 6.0 cm long. At one point, the water oscillates up and down at a rate of 4.8 oscillations per second.
	1. What is the speed of the water waves?
	2. What is the period of the water waves?
4. Water waves in a lake travel 4.4 m in 1.8 seconds. Their period of oscillation is 1.2 s.
	1. What is the speed of the water waves?
	2. What is their wavelength?
5. A group of swimmers is resting comfortably in the sun on an offshore raft. They estimate that 3.0 meters separates a trough and an adjacent crest of the surface waves. They count 14 crests that pass by the raft in 20 seconds. How fast are the waves moving?
6. A sonar signal of frequency 1.00 x 106 Hz has a wavelength of 1.50 mm in water.
	1. What is the speed of the signal in water?
	2. What is the period in water?
7. A sound wave of wavelength 0.70 m and velocity 330 m/s produces waves with what frequency?
8. If bats emit a chirp at 60.0 kHz (1 kHz = 1000 Hz) and the speed of sound in air is 340 m/s, what is the wavelength of that sound.
9. The distance between two crests of a certain transverse wave is 1.20 m. Eight crests pass a given point every 12.0 seconds. Find the wave speed.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parts of a Wave

Write the name of each labeled part of the wave below:

D

G

F

H

B

C

E

A



A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ E = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ F = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ G = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ H = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of wave is shown in the diagram above? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the name of each labeled part of the wave below:

B

A



C

A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of wave is shown in the diagram above? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_