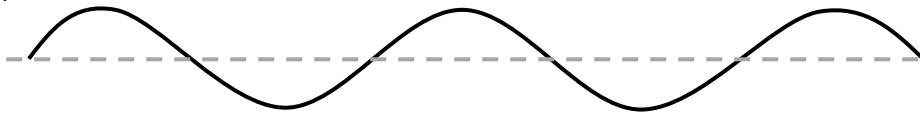


Name: _____ Period: _____ Date: _____

Measuring Ocean Waves

Part I: Measure and record the wavelength, amplitude, and height of each wave in meters. (1 cm = 1 m)
(Please round to the nearest 10th; for example, if your measurement is exactly 3, write 3.0)

1)

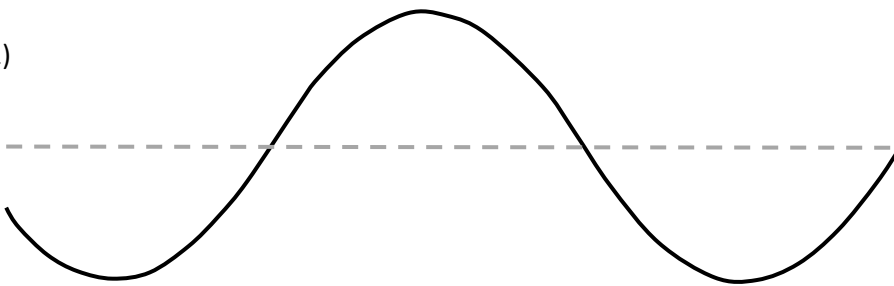


Wavelength = _____

Amplitude = _____

Height = _____

2)

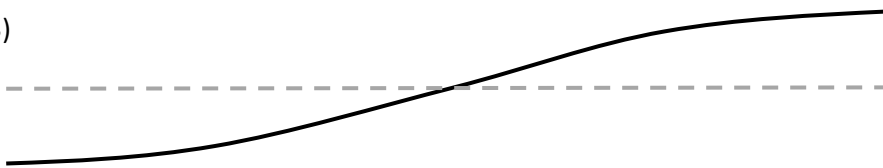


Wavelength = _____

Amplitude = _____

Height = _____

3)



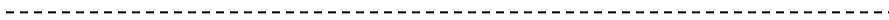
Wavelength = _____

Amplitude = _____

Height = _____

Part II: Draw your own wave diagram according to the data given.

4)

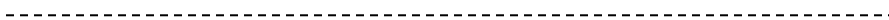


Wavelength = **5.3 m**

Amplitude = **2.0 m**

Height = **4.0 m**

5)



Wavelength = **11.0 m**

Amplitude = **1.2 m**

Height = **2.4 m**

Part III: Answer the following questions based on what you have read about waves.

6) Look at *Figure 12* on p. 457. When an ocean wave reaches shallower water, it “feels bottom” and begins to change. Draw your own diagram to show what happens at this point, and write a caption to explain your diagram.

7) At what depth will each of the waves from the front of this sheet “feel bottom” and start to break?
HINT → Remember that waves start to break when they reach a depth that is $\frac{1}{2}$ of their wavelength.

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

8) The speed of a wave can be determined by the following formula:

$\text{speed} = \frac{\text{wavelength}}{\text{period}}$

Use this formula to calculate the following data.

For each problem, write out the equation and show your work.

A. Wavelength = 17 meters

Period = 4 seconds

Speed = _____

B. Wavelength = 36 m

Period = 1.4 s

Speed = _____

C. Wavelength = 8.5 m

Period = 2.6 s

Speed = _____

D. Wavelength = _____

Period = 4.2 s

Speed = 20 m/s

E. Wavelength = 46 meters

Period = _____

Speed = 5.6 m/s