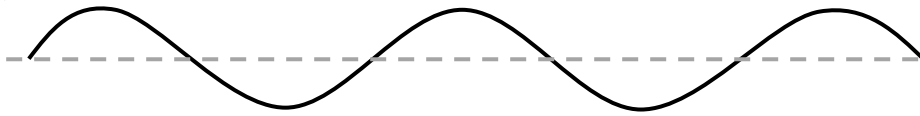


# Measuring Ocean Waves

**Part I:** Measure and record the wavelength, amplitude, and height of each wave in meters. (1 cm = 1 m)  
(round to the nearest 10<sup>th</sup>)

1)

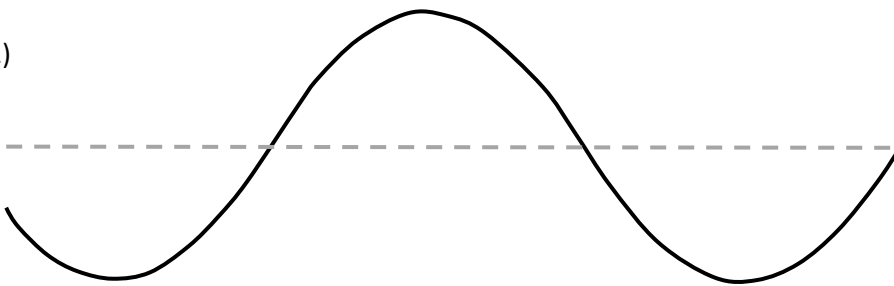


Wavelength = \_\_\_\_\_

Amplitude = \_\_\_\_\_

Height = \_\_\_\_\_

2)

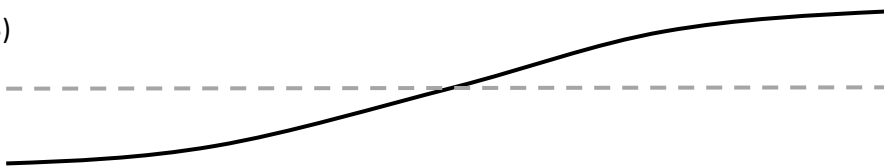


Wavelength = \_\_\_\_\_

Amplitude = \_\_\_\_\_

Height = \_\_\_\_\_

3)



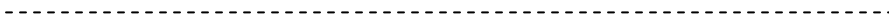
Wavelength = \_\_\_\_\_

Amplitude = \_\_\_\_\_

Height = \_\_\_\_\_

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

4)

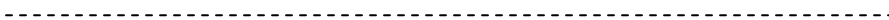


Wavelength = **5.3 m**

Amplitude = **2.0 m**

Height = **4.0 m**

5)



Wavelength = **11.0 m**

Amplitude = **1.2 m**

Height = **2.4 m**

**Part III:** Look at Figure 10.12 on p. 257. Answer the following questions based on what you have read.

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

7) The diagram on p. 257 shows that a wave starts to slow down when it reaches water that is  $\frac{1}{2}$  the wavelength. At what depth will each of the waves from the front of this sheet “feel bottom” and start to break?

(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