Name & # \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Properties of Waves**

**Study the figure below, do the math, then circle the correct answer for each question.**



1. In the diagram above, **four** complete waves pass the duck in one second. The **frequency** of
this wave is . (no math – just answer the question)

 a. 8s b. 4cm

 c. 4Hz d. ¼ Hz

2. If this wave travels at 16cm/s, its wavelength would be (do the math)

 **(use your answer from #1 and show your work/math)**

a. 2cm b. 16cm

 c. 64cm d. 4cm

3. If the wavelength of the above wave is 2cm, its speed would be (do the math)

 **(use your answer from #1 and show your work/math)**

a. 16cm/s b. 14cm/s

 c. 2cm/s d. 8cm/s

**Building Vocabulary**

*Fill in the blank to complete each statement*

**4.** The letter A in the figure above represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wave.

**5.** The letter B in the figure above represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wave.

**6.** The letter C in the figure above represents a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wave.

**7.** The letter D in the figure above represents a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wave.

1. Write out the equation for what you are solving for:

S = W x F W = S F = S

 F W

1. Plug in the numbers with units
2. Do the math
3. Write out the answers with the units

Speed units would be m/s, cm/s, m/s

Wavelength units would be m, cm, m S

Frequency units is always Hz

1. Fill in the triangle to help you solve the following problems.
2. A wave on a lake has a wavelength of .80m and a frequency of 2Hz. What is the speed of the wave?
3. 3.

1. 4.
2. The speed of a wave on a rope is 75cm/s and its wavelength is 5cm. What is the frequency?
3. 3.

1. 4.
2. A wave has a wavelength of 25mm and frequency of 7Hz. At what speed does the wave travel?
3. 3.

1. 4.
2. The speed of a wave on a guitar string is 160m/s and the frequency is 8,000Hz. What is the wavelength of the wave?
3. 3.
4. 4.

1. The speed of a wave in the ocean is 200m/s and the wavelength is 200,000m. What is the frequency?
2. 3.

1. 4.

1. A wave on a guitar has a frequency of 12Hz and a wavelength of 50m. What is its speed?
2. 3.

1. 4.