

WAVES AND SOUND – WORKSHEET #1

Name: _____

Read chapter 7.1 and 7.2 up to page 340. **THEN** answer the following questions.

Figure 7.2 on page 329 shows two types of vibration. Fig A) shows a transverse vibration while B) shows a longitudinal vibration. Explain the difference between the two types. Where does the name come from?

In the space below, draw a diagram of a transverse and longitudinal vibration. Label the Amplitude (A), the rest position, the **axis of vibration**, and indicate the motion of the mass.

| | |
|---------------------------|------------------------------------|
| Transverse (eg, pendulum) | Longitudinal (eg, vertical spring) |
|---------------------------|------------------------------------|

Period and Frequency

Define Period. Use words, give the formula and the units.

Define Frequency. Again, use words as well as give the formula and units. What is 1 hertz?

Practice: Answer questions one through four from page 331 on an *attached* sheet of paper.

Now, using the formulas for period and frequency, or the answers to the questions from the text, **derive** a relationship between period and frequency. That is, find a formula for period with frequency in it or vice versa. Make sure you show how you got the formula.