Name:_____

Time and Periodic Motion

Read pages 12-13 of green booklet

1. What would a periodic motion be?

2. What is meant by the term vibration?

3. What is Period?

4. What are the two formulas for period?

5. What is frequency?

6. What is a Hertz?

7. What are the two formulas for frequency?

Exercises: Frequency and Period

1. Determine the frequency for each of the following.

a) A bouncing spring completes 10 vibrations in 7.6 seconds.

b) A South African bird, the horned sungem, has the fastest wing beat of any bird, at 1800 beats in 20 seconds.

c) Most butterflies beat their wings between 460 and 640 times per minute. (In this case, find the range for the answer.)

d) A pendulum completes 8 cycles in a time of 5 seconds.

2. A hawk flaps it's wings 10 times in 15 seconds. Calculate

a) the period of its wing beat.

b) the frequency of its wing beat.

3. A series of 16 waves pass a certain point in 8 seconds. Calculate the frequency and the period of the waves.

4. Calculate the period of vibration in seconds if the frequency is
a) 0.17 Hz
b) 0.55 Hz
c) 60 Hz
c) 25 Hz

5. Calculate the frequency in hertz of an object that vibrates with a period of
a) 0.010 s
b) 0.25 s
c) 2.5 s
c) 12 s

6. A pendulum completes 5 cycles in 15 seconds. Determine

a) the period of the pendulum.

b) the frequency of the pendulum.