Physics: Pendulum Problems 1 Name:_____

**Objectives: P4.3e,P4.4A,P4.4d**

Directions: Show all of your work for full credit.

1. A geologist's simple pendulum, whose length is 37.1cm, has a frequency of .819hz at a certain location. What is the acceleration due to gravity?

_____ m/s2

2. A pendulum makes 44 vibrations in 60s. What is its period and frequency?

_____ s _____ hz

3. How long must a simple pendulum be if it is to make exactly one complete vibration per second?

_____ m

4. What is the period of a pendulum 80cm long on earth? And when it is falling in a free falling elevator?

_____ s earth _____ s elevator

5. A pendulum is timed as it swings back and forth. The clock is started when the bob is at the left end of its swing. When the bob returns to the left end for the $90^{th}$ return, the clock reads 60s. What is the period and frequency

_____ s _____HZ

6. A seconds pendulum beats seconds; that is, it takes 1s for half a cycle. Find length at a place where g= 9.8m/s2. Where g = 3.8m/s2

_____ m 9.8 _____-m 3.8