QUESTIONS TO HAND IN – EXPERIMENT 19

NAME_____

LAB INSTRUCTOR_____ **LAB DAY/TIME**_____

1. A spring which hangs vertically is 20 cm long with no weight added to its end. Putting a 0.5 kg mass on the end of the spring causes it to stretch until its new length is 25 cm. What is the spring constant, *k*?

A spring has a spring constant *k* of 47.3 N/m. A mass *m* of 300 g is added to the end of the spring. Answer questions 2-5 about this spring-mass system.

2. The mass-spring system is hanging at rest. The mass is pulled down an additional 5 cm and released. What mathematical expression (i.e., position as a function of time) can be used to describe the motion of the mass? Express the answer using the parameters given above.

3. What is the potential energy *PE* stored in the spring at the time of release?

4. After it is released, what is the period *T* of its motion?

5. What is the frequency *f* of its motion?