Name: _____ Date: _____ Course: _____ Professor: _____

S1a Prelab: Hooke's Law & Simple Harmonic Motion

Read Lab instructions Before Answering Questions

1. Mr. Parker and Ms. Stacy have co-developed a new silk thread material that has an adhesive property that allows it to stick to any solid surface; it also has an elastic property allowing it to stretch and compress like a spring. They want to measure the material spring constant k. So they attach one end to the ceiling and suspend a 5 kg mass from the other end and measure a downward displacement of 27.00 mm. What is the spring constant k?

2. After calculating the spring constant of the new material, Mr. Parker decides to use the thread to calculate his weight. Mr. Parker grabs the free end of the thread and suspends himself from the ceiling. Ms. Stacy pulls down on his foot slightly and measures his period of oscillation T = 1.237 s. Using the spring constant from the previous problem and the given period calculate Mr. Parker's weight.
   Hint: mass and weight are two different quantities