**PH1140 Mass-Spring Oscillator (Day 2) - Data Sheet**

**Use the following space to record spring constants complete with uncertainty (report all digits).**

**Spring 1: k1 ± σ1 = 33.21±0.06463**

**4-Spring Combination:: k2 ± σ2 = 32.82±0.1462**

**Use the following space to record times and number of full oscillations from the Part 2 measurements.**

**Spring 1: N1 = 16**

**t1 = N1T1 = 9.614 s**

**s) T1 = .601**

**Calculated K = 32.9 This value is within 1% of the value found in part 1 of this lab.**

**4-Spring Combination: N2 = 11**

**t2 = N2T2 = 9.339**

**T2 = .849 s**

**Calculated K = 32.86 This value is exactly 1% away from our calculated value found in part one of this lab.**

**Values from curve fits with a sine wave.**

**Omega for four springs: 7.423±0.0007063**

**Omega for one spring: 10.45±0.0004665**

**Force and acceleration peak at the same time**

**Velocity is zero when acceleration is maximum. Velocity is a phase shifted acceleration**

**Distance is zero when velocity is at a maximum.**