

**AP Physics Lab #11 — Spring Constant**

Name \_\_\_\_\_

Grade \_\_\_\_\_

**Objective:** To perform two experiments to calculate the spring constant for a given spring and compare the results.

**Experiment 1: Hooke's Law**

$$F = -kx$$

Mass (g)	x (m)	k (N/M)
50		
100		
150		
200		
250		
Average k value		

**Experiment 2: SHM**

$$x(t) = A \cos(\omega t + \phi)$$

Mass (g)	$\omega$ (rads/s)	k (N/M)
50		
100		
150		
200		
250		
Average k value		

**Calculation:**

Calculate the percent difference of the result from Experiment 1 compared to the result from Experiment 2.