There are two separate sets of data here. The first is associated with a spring system in which the spring is not particularly stiff (i.e., small *k*) and the second is associated with a spring system in which the spring *is* stiff (i.e., large *k*). Assuming you have been given permission to use this data, use the data that most closely approximates the system you actually tried to use during lab. If you did neither and are doing this as a "dry lab," use the *small k* data.

DATA FOR OSCILLATORY MOTION FOR *SMALL* "k" SPRING

Part A: How initial displacement affects period:

Bob mass m = .15 kg

Displacement (meters)	10 oscillation time (sec)	Period (sec)
.10 meters	14.4 seconds	
.15 meters	14.3 seconds	
.20 meters	14.3 seconds	
.25 meters	14.4 seconds	
.30 meters	14.3 seconds	

Part B: Determine spring constant:

Bob Mass (kg)	Force mg on spring (nts)	Displacement (meters)
.05 kg		.113 meters
.10 kg		.230 meters
.15 kg		.355 meters
.20 kg		.475 meters
.25 kg		.595 meters
.30 kg		.715 meters
.35 kg		.833 meters

Part C: How mass affects period of oscillation:

Bob Mass (kg)	10 oscillation time (sec)	Period (sec)
.05 kg	8.0 seconds	
.10 kg	10.6 seconds	
.15 kg	12.6 seconds	
.20 kg	14.2 seconds	
.30 kg	17.4 seconds	
.40 kg	20.0 seconds	

DATA FOR OSCILLATORY MOTION FOR LARGE “k” SPRING

Part A: How initial displacement affects period:

Bob mass m = 2.0 kg

Displacement (meters)	10 oscillation time (sec)	Period (sec)
.10 meters	14.6 seconds	
.15 meters	14.7 seconds	
.20 meters	14.7 seconds	
.25 meters	14.6 seconds	
.30 meters	14.7 seconds	

Part B: Determine spring constant:

Bob Mass (kg)	Force mg on spring (nts)	Displacement (meters)
.20 kg		.050 meters
.30 kg		.078 meters
.50 kg		.135 meters
.60 kg		.163 meters
.80 kg		.222 meters
1.00 kg		.270 meters

Part C: How mass affects period of oscillation:

Bob Mass (kg)	10 oscillation time (sec)	Period (sec)
.20 kg	4.7 seconds	
.30 kg	5.8 seconds	
.50 kg	7.4 seconds	
.60 kg	8.1 seconds	
.80 kg	9.4 seconds	
1.00 kg	10.5 seconds	