Name: _____

1. Define simple harmonic motion. What conditions must be met? (20 pts)

2. What physical phenomenon does the relationship $T = 2\pi\sqrt{\frac{m}{k}}$ describe? (20 pts)

3. What physical phenomenon does the relationship $T = 2\pi\sqrt{\frac{L}{g}}$ describe? (20 pts)

4. The following data were collected for Part 1 of the lab procedure. Complete the table. The force is due to the gravitational force. All distances are measured from the *bottom of the hanger to the top of the stool*. You should ignore the initial weight of the hanger. *Note* that Δx is the change from initial position, $x_f - x_0$, not the change from the previous position, $x_2 - x_1$. (40 pts)

Mass (g)	**Height (cm)**	Δx **(m)**	**Force (N)**
0	**57.5**	**0**	**0**
100	**46.5**		
200	**36.5**		
300	**25.5**		
400	**15.5**		
500	**4.5**		