Report Sheet

Vibrational Motion

Data:

Basic parameters

Maximum amplitude _____

Period

Counting frequency

Natural frequency

Force Constant and Natural Frequency

Force constant (from graph) _____

Natural frequency

Counting frequency

Period

Velocity Graph

Maximum velocity (from graph) _____

Maximum velocity (by calculation)

Acceleration Graph

Maximum acceleration (from graph) _____

Maximum acceleration (by calculation)

Force Graph

Constant mass (from graph) _____

Data Comparison

Time (sec)	Position (m)	Velocity (m/s)	Acceleration ($m/s^{2)}$
	0.0		
	0.0		

Question and Conclusions

1) Compare the theoretical values of the period, counting frequency and natural frequency, to the values determined from the graphs of motion. Were they close to each other? Explain.

2) Compare the mass determined from the force-acceleration graph to the measured value. Were they close to each other? Explain.

3) How would the graphs and calculated values be different if a 200-gram mass was used instead of a 100-gram mass? *Be specific.* Answers such as 'twice as much' or 'one-third the value' are encouraged.