**P Chem Lab #2: Review of Classical Methods: the Pendulum**

**Student A**

**Abstract \_4\_/5**

\_√\_\_g and error listed; mass independence result (best to include slope and r2 for M vs τ and not

 unequivocally assert mass independence)

\_~\_\_Unsubstantiated claims avoided.

\_√\_\_English mechanics flawless

\_\_x\_No unnecessary verbiage… brevity/succinctness a must

*There is no need to cite theoretical expectation or equation for τ. Just state the bare experimental conclusions without reference to differential equation results*

 No unnecessary or irrelevant information included

\_ok\_\_ format specified is met (11 pt font 3rd person past tense, Times New Roman or Calibria)

**Introduction \_5\_/6**

\_ok\_\_ goals summarized (test pendulum’s mass independence; verify that the predicted period from

2nd order analysis has form τ=2π(g/L)1/2 in radians, and estimation of g, the terrestrial gravitation constant.

\_x\_\_ reference and/or brief description of underlying theory leading to above equation

*The source of your equation 1 needs some brief mentioning here. Give Newton and his differential analysis credit.*

 \_ok\_\_ definition or clear graphical representation of relevant variables (L, M, θ,τ)

\_ok\_\_required format : (1.5 spacing, first or third person, font as in Abstract) ; English mechanics ok

**Experimental Method \_3\_/4**

\_ok\_\_ lab manual source referenced

\_ok\_\_ some specific details, e.g. how do you hold weight to pendulum arm ? What is arm ? (string)

*L magnitude, mass range ?*

\_ok\_\_ picture of pendulum is not necessary but usually a good idea

\_ok\_\_ format followed: single space, past tense ; English mechanics ok

**Results \_6\_/ 7**

\_\_!\_\_ Results are tabulated in labeled tables *It’s often good to include key data in tables for readers to verifn/a* Text explains origins of tabulations

\_\_ok\_\_ Where relevant, error estimates are provided in tabulations

\_\_x\_\_ sig figs are correct *Here’s where the tabulations would help…since I don’t have directr notion of how precise your data is, I can’t adjudge the sig figs…but yours are too high in count….*

\_ok\_\_\_ format followed; 1.5 or double spaced; present tense; all tables and figures well labeled .

English mechanics ok

**Discussion \_12\_\_/13**

\_\_~\_ Results are compared against expected values with relevant % errors listed

 Specifically: M vs τ plot remarked on; τ vs. (L)1/2 remarked on; gexp vs gexpected remarked on

*It is particularly important to emphasize that texp ~ (L)1/2 .This is common to Newtonian results…recall that the the distance d an object travels in free fall also has the relationship d=~t2 => t~(d)1/2*

\_ok\_\_ Sig figs correct

\_\_ok\_\_ rational and sober postulations on error sources provided *Not bad, kid, but the angle error was explicitly mentioned too.*

\_\_\_x\_ absence of unsubstantiated assertions

\_\_x\_\_ Format follows that in Results

**References quoted and done correctly \_2\_\_\_/2 \_\_32\_\_/37**