PROJECTILE MOTION INVESTIGATION MARKING

Title Page:

* Lab
* Student Name
* Partners
* Date
* Teacher

Theory:

* Projectile Motion, including $a\_{x}=0 ^{m}/\_{s^{2}}$ and $a\_{y}=9.8 ^{m}/\_{s^{2}} [down]$
* Law of Conservation of Energy, including derivation and accepted $v\_{x}$
* d-t and v-t graphs

Purpose:

* Present, including accepted values if not in Theory

Materials:

* Refer to…

Procedure:

* Refer to…
* Diagram of set-up

Observations:

* Any additional observations
* Distance from landing point to bench ($d\_{x}$)
* Graphs

Error Analysis:

* Sources of error
* Ways to improve the lab
* $v\_{x}$ percent errors: experimental (projectile motion equations with average $d\_{x}$) vs. accepted (using Law of Conservation of Energy), graph (slope of $d\_{x}-t$ graph) vs. accepted (using Law of Conservation of Energy)
* Discussion of x-acceleration (graph vs. accepted)
* y-acceleration percent errors (using graph and accepted)

Conclusion:

* Summary of Procedure
* Did the projectile motion equations hold?
* $v\_{x}$ values for experimental and graph, including ±
* $a\_{x}$ values for graph, including ±
* $a\_{y}$ values for graph, including ±
* Percent Errors

Discussion:

* Prove that the horizontal acceleration of the projectile is zero: Many different solutions – slope of horizontal velocity-time graph, explanation,…
* Baseball’s acceleration at all points is $9.8 ^{m}/\_{s^{2}} \left[down\right]$, plus the influence of air resistance
* Mound would be higher, projectile motion calculations to prove it

References:

* Include the handout
* APA format

Book:

* + Finney, J. (1970). *Time and again*. New York, NY: Simon and Schuster.

Website with Author:

* + Simmons, B. (2015, January 9). The tale of two Flaccos. Retrieved from http://grantland.com/the-triangle/the-tale-of-two-flaccos/

Website without Author:

* + Teen posed as doctor at West Palm Beach hospital: police. (2015, January 16). Retrieved from http://www.nbcmiami.com/news/local/Teen-Posed-as-Doctor-at-West-Palm-Beach-Hospital-Police-288810831.html

Print Journal:

* + Nevin, A. (1990). The changing of teacher education special education. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *13*(3-4), 147-148.

On-line Journal:

* + Jameson, J. (2013). E-Leadership in higher education: The fifth “age” of educational technology research.*British Journal of Educational Technology*, *44*(6), 889-915. doi: 10.1111/bjet.12103

Appendices:

* $v\_{x} $accepted value + error
* Average $d\_{x}$ value
* Projectile motion calculation of $v\_{x}$ + error
* Percent error calculations