Name _____ Hour _____

☺ Fun with 1-D Motion Equations Lab ☺

_____ **DUE** _____ **pts** **Please use the GUE format.**

Part 1: How quickly can you react? Using only a meter stick and physics calculate your reaction time. **Make sure everyone in your group does his/her own reaction time.** Have one person hold the meter stick and place your fingers by the 20 cm mark. They will let go (without telling you) and you will catch it. Record how far it falls in cm and then convert to meters.

___22.0____ cm _____ m

Calculate your **reaction time** (Δt):

Given:

Unknown:

Equation:

Δt = _____

Part 1 B: If you found your reaction time to be 0.29 sec, what was your Δy in **cm**?

Δy = _____ cm

Part 2: Foam Rocket:

1. Pop the rocket **straight up** into the air. It has to be **straight up** because we are using 1-D equations.
2. Time how long the rocket is in the air. ___6.22___ sec **Time just down** = _____
3. Determine **how fast** (v_f) it is going in both **m/sec and mph** as you catch it on its way back down.

Vf = _____ m/s = _____ mph

4. Calculate **how high** (Δy) it went. Make sure to use the GUE format.

Δy = _____

Name _____ Hour _____

***Part 3*: Toy car acceleration**

1. Measure a 2.5 meter track.
2. Starting from rest, record the time it takes your toy to travel across the track: _3.55____ sec
3. Calculate the **acceleration** of your toy using the GUE format.

a = _____

4. Calculate the **final velocity** of your toy in **m/s** using **2 different equations** (answers should be the same!) and then convert your answer to **mph**.

Equation 1: **Equation 2**:

Vf = _____ m/s = _____ mph

One last 1-D Motion Problem:

1. You drop a ball off the second story and it takes 3.50 sec to hit the ground. How far did it fall in both **meters** and **FEET**? (60 m) **Show your work**!

Δy = _____ m, _____ ft