**Newton’s Laws Quiz**

**Principles of Physics – Mr. Rita**

**Fill in the proper terms for Newton’s 3 laws. (9 points)**

First Law:

Unless acted upon by

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A body in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

}

A body at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Second Law:

\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Third Law:

For every \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

There is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For each situation, explain what law is being demonstrated (1 pt.)and also give an explanation of how it demonstrates that law(4 pts) . Don’t just restate the law, give an explanation.**

1. A piece of toast is given a generous layer of jelly on one side. When the toast is dropped from a height of 1 meter, it lands “toast side down” 4 out of 5 times. How is this an example of one of Newton’s Laws?
2. A small car is pushed along a level parking lot. A force of 50N is used to push the car, and that force is maintained for 20 meters. After 20 meters the pusher is accelerating at too fast of a pace to keep up with the car. How is this an example of one of Newton’s Laws?

[](http://images.google.com/imgres?imgurl=http://www.planet-science.com/about_sy/news/ps_176-200/196/egg.jpg&imgrefurl=http://www.planet-science.com/about_sy/news/ps_176-200/ps_issue196.html&h=196&w=227&sz=5&hl=en&start=63&usg=__auxIJdOpO8k2uC_B1yGTB1Fp5gM=&tbnid=gsUB6EIaBZzFqM:&tbnh=93&tbnw=108&prev=/images?q=spinning+egg&start=60&gbv=2&ndsp=20&hl=en&safe=active&sa=N)

1. A raw and a hard boiled egg are spun on their side. After a

few seconds, both eggs are stopped from spinning. The hard

boiled egg remains motionless, but the raw egg starts to spin

again. How is this an example of one of Newton’s Laws?

[](http://images.google.com/imgres?imgurl=http://media.rei.com/media/o/1252604.jpg&imgrefurl=http://www.rei.com/product/760904&h=440&w=440&sz=45&hl=en&start=9&usg=__F-66ksqKpgDct3pcS-Eo4Nas56o=&tbnid=c8sVP4yjKXLCJM:&tbnh=127&tbnw=127&prev=/images?q=x-zylo&gbv=2&hl=en&safe=active&sa=G)

1. A Xylo is a flying device that can be thrown over

100 yards. Although scientists are unclear why this

thing actually works, It has been proven to work in

a great science class. How can one of Newton’s laws

explain the motion of this aeronautical wonder?

1. If you add the breath freshener Mentos to a 2l bottle of Diet Cola, a violent reaction occurs and the soda erupts out of the mouth of the bottle to heights of up to 4 meters. How is this an example of one of Newton’s Laws?

[](http://images.google.com/imgres?imgurl=http://magnetnerd.com/Neodymium%20Magnets/Newtons%20Cradle.jpg&imgrefurl=http://magnetnerd.com/Neodymium%20Magnets/gauss_rifle.htm&h=400&w=400&sz=18&hl=en&start=9&usg=__FsLNJ4zAEPrulkWkHR7JVRzqMM0=&tbnid=rOdpYyeT5s0F2M:&tbnh=124&tbnw=124&prev=/images?q=Newton%27s+cradle&gbv=2&hl=en&safe=active&sa=G)

1. A Newton’s Cradle is a device that has 6 balls

suspended from strings. A single ball is pulled

back and allowed to collide with the remaining

5 balls. After the initial collision, a single ball

Opposite of the remaining balls swings upward.

How is this an example of one of Newton’s Laws?

1. A person on a skateboard is holding a cement block. The person throws the block (like you would pass a basketball). The block goes forward and the skateboarder rolls backward. How is this an example of one of Newton’s Laws?