Name

Instructor

Course

Date

Newton’s first law of motion observes that an object under no net external force continues to remain in its primary state (Ferrie 12). This propensity to resist changes in a state of motion is known as inertia. When all the external forces cancel one another out, then there is no net force acting on the object. When there is no force acting on an item, that items keeps a constant velocity. Therefore there must be a change for any velocity to happen. An object under the force of inertia can be slowed down by friction which acts as an external force. There is a tendency to realize equilibrium when the external forces are balanced which means that the output net force will be equal to zero. In this case the object will be at rest or moving with constant velocity or simply not accelerating.

This can best be illustrated by a bus carrying passengers and the driver applies brakes suddenly. The passengers at this point will fell a sudden pull in the forward direction. The passengers bodies continue maintaining a state of motion even when the bus stops therefore pushing them forward when the brakes are applied. The passengers maintain a constant magnitude and direction until another force is applied which changes the state of motion

**Works Cited**

Bortz Fred. *Laws of Motion and Isaac Newton*. 1st ed 1st ed. Rosen Publishing 2014.

Ferrie Chris. *Let's Get Moving! : Speeding into the Science of Motion with Newtonian Physics*. Sourcebooks Explore 2020.