**Chapter 2 – Summary of Terms**

**Inertia** - The property of things to resist changes at rest or in motion.

**Scalar** – Quantities that can be completely specified by only magnitude, e.g., time, speed

**Vector** – Quantities that can be completely specified by both magnitude and direction, e.g. force

**Speed** – How fast something moves. The distance an object travels per unit of time. Scalar

**Velocity** – Speed of an object and its direction of motion. Vector

**Force** – Push or pull. It is a vector, with units N (newton) or pounds. (9N = 2 pounds)

**Net force** – The vector sum of all forces that act on an object (Fig. 2.6)

**Newton’s first law of motion (NFLM)** – Every object **continues** in a state of rest (Fig. 2.4) or of uniform speed in a straight line unless acted on by a nonzero net force.

**Equilibrium** – A state of balance

**Mechanical Equilibrium** – The state of an objects or a system of objects for which there are no changes in motion. In accordance with NFLM, if at rest, the state of rest persists. If moving along a straight path, motion continues without change.

**Equilibrium Rule** – For any object or systems of objects in equilibrium, the vector sum of the forces acting equals zero. (Equation pg. 26) It is a state of no change.

**Support Force** - Upward force that balances the weight of an object on a surface; (Fig. 2.10) Q1 pg. 28 and spring sofa

**NFLM for Equilibrium** – An object under the influence of only one force cannot be in equilibrium. Only when 2 or more forces act on it, then only object can be in equilibrium.

**Static Equilibrium –** Object is at rest. All acting forces always balance to zero.

**Dynamic Equilibrium –** Objects move steadily, not speeding up, slowing down, or changing direction. All acting forces balance to zero.