Ch 3 note page

*Speed = distance / time   (meters/ seconds)
                                    meters per second   mph (miles per hour) is also common speed unit
Speed is a **Scalar** quantity: it has only magnitude (how much of something on a scale). There is no direction associated with it.

*Velocity = distance / time   in a direction such as N, E, S, W or up and down.
Velocity is a **Vector** quantity: it has direction associated with it. A vector is a directional arrow →

*Acceleration = Final velocity – initial velocity / time   (m/sec/ sec) or (m/sec^2) Think of it as a rate of a rate.
This means acceleration is also a vector quantity because velocity is a vector quantity.

*Acceleration due to gravity = 9.8m/sec^2 (this easily rounds to 10m/sec^2) Consider this: A falling object at the 1st second will have a velocity of about 10m/sec. At the 2nd second a velocity of 20m/sec. At the 3rd second a velocity of 30m/sec. The farther an object has to fall or the more time in the air, the faster it will go until it reaches terminal velocity, when the upward force of air resistance equals the downward force of gravity. At that point the velocity will remain the same until it hits something.

*momentum = mass x velocity (also a vector quantity)
Consider this: Could a big elephant and a tiny golf ball have the same momentum? If the elephant and the golf ball were moving, they could have the same momentum since a small mass x a large velocity can equal a large mass x a small velocity.

*Potential energy is energy of position (an object that is higher in the air has more potential energy than an object that has a lower position)

* Kinetic energy is energy related to motion. The faster something is going the more kinetic energy it has.