Preliminary Physics

Week 1	Name:
Summary Notes	Class:
	Tutor:

1. Describe uniform straight-line (rectilinear) motion and uniformly accelerated motion through:

- The use of scalar and vector quantities

– A scalar is a quantity, such as mass, length, or speed, that is completely specified by its …….. and has no…….

– A vector is any quantity that has a ……and ……..

[Insert a graph]

Distance (m) and Displacement ($m + direction$)

– Distance is a **……** quantity. It refers to the length of the entire path travelled

– Displacement is a **……** quantity. It refers to the ……. relative to the ……..

– Displacement can be ……. if the particle return to the original position

– Distance and Displacement are equal only if the particle travel in the ……... direction

Speed (ms^{-1}) and **Velocity ($ms^{-1} + direction$)**

– Speed is a ……. quantity which measures how fast or slow an object is moving

– Velocity is an example of a …… quantity that has both size and direction

The common unit of speed is $km\ h^{-1}$ where as the SI unit is $m\ s^{-1}$. It follows that:

Average Speed is the rate at which …… changes during a ……. of time.

$$Average\ Speed = \frac{\text{change in distance}}{\text{time}} = \frac{s}{t}$$

Average velocity is the rate at which ……changes during a period of time.

$$Average\ velocity = \frac{\text{change in displacement (m)}}{\text{time (s)}} = \frac{\vec{s}}{t}$$

Instantaneous speed

Instantaneous speed describes the speed at a particular ……

$$v = \frac{\Delta s}{\Delta t}$$

Where Δ(delta) means 'a change in…' that is, the instantaneous speed is equal to the change in distance divide by the corresponding small change in time

Instantaneous velocity

Not surprisingly, the velocity at any particular instant of time is called the instantaneous velocity

$$\vec{v} = \frac{\Delta \vec{s}}{\Delta t}$$

[Insert a graph]