**Displacement/Velocity/Acceleration Graphs**

**Displacement vs. Time Graphs**

This graph describes the motion of an object. (Note: Displacement & Position mean the same thing)



The *instantaneous velocity* is the slope at a given point. If the point is curved, draw your best guess of a tangent line

The *average velocity* is the slope from the start, to the end of a time period.

Find instantaneous velocity at 10s.

Find the average velocity over the whole movement.

Using instantaneous velocity, we can construct a velocity graph from any position time graph



**Velocity vs. Time Graphs**



To find the displacement from a Velocity-Time Graph you would find the a*verage velocity* then multiply that by the amount of time it travels at that velocity.

Find the displacement travelled during the 2s to 4s time interval.

*Acceleration* is the rate of change of velocity. It is the slope of a Velocity Time Graph.

Describe the motion (moving forward/backward) and find the acceleration of the two graphs.

We can also make an acceleration time graph from any velocity time graph.



We can look how all the graphs are related



