1-Dimensional motion study sheet

Look at powerpoint notes and example problems and homework from class

* Definitions:
	+ Distance- total length of path taken (scalar)
	+ Displacement- straight line length from start to finish with a direction (vector)
	+ Speed- distance traveled divided by time taken (scalar)
		- Equation for both speed and velocity: v = s / t (not on reference table)
	+ Velocity- change in displacement per time taken (vector)
	+ Acceleration- change in velocity per time (vector)
		- Equation: a = v / t (not on reference table)
		- Acceleration due to gravity 9.81 m/s2 down
* Equations on reference table ( s = distance or displacement, u = initial speed or velocity, v = final speed or velocity, t = time, a = acceleration)
	+ s = (v + u ) t / 2
	+ v = u + at
	+ s = ut + ½ at2
	+ v2 = u2 + 2as
	+ acceleration must be uniform (constant) when using these equations
	+ When dropping an object, u = 0 and a = 9.81 m/s2
	+ When throwing an object upwards, v = 0 and a = - 9.81 m/s2
* Graphs
	+ Displacement vs Time graphs
		- Slope = velocity of object
			* Positive slope-moving in + direction
			* Negative slope-moving in - direction
			* Constant slope- constant velocity
			* Changing slope- changing velocity (acceleration)
			* Zero slope (horizontal line)- zero velocity
		- Positive displacement- graph is above zero
		- Negative displacement- graph is below zero
	+ Velocity vs Time graphs
		- Slope = acceleration of object
			* Positive slope - positive acceleration
			* Negative slope - negative acceleration
			* Constant slope - constant acceleration (velocity is changing!)
			* Changing slope - changing velocity (acceleration)
			* Zero slope- can mean
				+ constant velocity
				+ No velocity- horizontal line on time axis
		- Area bound by graph (between graph and time axis)
			* Positive displacement- area bound by graph is above zero
			* Negative displacement- area bound by graph is below zero
	+ Acceleration vs Time graphs
		- Slope = change in acceleration of object
			* Positive slope - positive change in acceleration
			* Negative slope - negative change in acceleration
			* Constant slope - constant acceleration (velocity is changing!)
			* Changing slope - changing velocity (acceleration)
			* Zero slope- can mean
				+ constant acceleration (velocity is changing!)
				+ No acceleration (constant velocity)- horizontal line on time axis
		- Area bound by graph (between graph and time axis)
			* Positive change in velocity- area bound by graph is above zero
			* Negative change in velocity- area bound by graph is below zero