

M1 SUMMARY SHEET

	<i>Symbols used</i>	<i>Units</i>	<i>Vector or scalar</i>	<i>Formulae</i>	<i>Other properties</i>
FORCE					What are Newton's 3 laws? 1. 2. 3.
FRICTION					Does this formula ALWAYS work to give you the correct friction?
WEIGHT					N/A
VELOCITY				(2 formulae)	What is the difference between velocity and speed?
SPEED					N/A
DISPLACEMENT				(2 formulae)	How do you get this from a velocity/time graph?
DISTANCE					What's the difference between how you get displacement and how you get distance from a velocity/time graph?
MOMENTUM					What do you know about total momentum?
ACCELERATION					How do you get this from a velocity/time graph?

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	<i>Symbols used</i>	<i>Units</i>	<i>Vector or scalar</i>	<i>Formulae</i>	<i>Other properties</i>
FORCE	F, W, R, N	N	vector	$F = ma$	<p>What are Newton's 3 laws?</p> <ol style="list-style-type: none"> 1. Objects remain stationary or moving at constant speed unless acted upon by external force 2. The resultant force is proportional to the mass of the object and the acceleration produced 3. Every action has an equal and opposite reaction
FRICTION	F	N	vector	$F = \mu R$	<p>Does this formula ALWAYS work to give you the correct friction?</p> <p>No, only if the object is moving or is in limiting equilibrium</p>
WEIGHT	W	N	vector	$W = mg$	N/A
VELOCITY	u, v	ms^{-1}	vector	$v = u + at$ $v^2 = u^2 + 2as$	<p>What is the difference between velocity and speed?</p> <p>Velocity is a vector so has direction as well as magnitude</p>
SPEED	-	ms^{-1}	scalar	speed = $\frac{\text{distance}}{\text{time}}$	N/A
DISPLACEMENT	s	m	vector	$s = ut + \frac{1}{2}at^2$ $s = \left(\frac{u+v}{2}\right)t$	<p>How do you get this from a velocity/time graph?</p> <p>The area under the graph counting areas below the x-axis as negative</p>
DISTANCE	d	m	scalar	distance = speed × time	<p>What's the difference between how you get displacement and how you get distance from a velocity/time graph?</p> <p>For distance get the total area under the curve, with areas below the x-axis counted as positive</p>
MOMENTUM	-	Ns	vector	$Momentum = mv$	<p>What do you know about total momentum?</p> <p>It is conserved in any collision</p>
ACCELERATION	a	ms^{-2}	vector	$a = \frac{v-u}{t}$	<p>How do you get this from a velocity/time graph?</p> <p>The gradient of the curve</p>