




Assess your learning – Newton's Laws Rate your understanding of this chapter (<i>be honest!</i>)	 No	 Kinda	 Yes	Revised for Week 20 Exam	Revised for Week 30 Exam
I can use Newton's second law to solve problems ($F = ma$). E.g. A particle of mass 50 grams is shot horizontally into a block of wood at a speed of 200 m/s. If the resistance of the wood is uniform and of magnitude 800 N, what distance does the particle travel into the wood?					
I can solve problems involving friction on horizontal ground. E.g. A boy pushes a box of mass 40 kg across a horizontal surface using a force of 200 N. If the coefficient of friction between the box and the ground is 0.4, find the acceleration of the box.					
I can solve problems involving friction on inclined planes. E.g. A particle of mass 3 kg is allowed to slip down a smooth hill which is inclined at an angle α to the horizontal, where $\sin \alpha = \frac{1}{5}$. Find the acceleration and the normal reaction of the particle in terms of g .					
I can solve problems involving fixed pulleys and weights. E.g. A fixed smooth pulley has masses of 5 kg and 3 kg hanging from either side by means of a light inextensible string. The system is released from rest. (i) Find the common acceleration of the two masses. (ii) After 2 seconds the 5 kg mass is held. How much further will the 3 kg mass rise?					
I can solve problems involving movable pulleys and weights. E.g. A light inextensible string has one end attached to a ceiling. It then passes under a smooth movable pulley of mass 15 kg, then over a smooth, light, fixed pulley. A second particle of mass 18 kg hangs freely from the other end of the string. Find the acceleration of the system when it's released from rest and the tension in the string.					
I can solve problems involving pulleys and weights on an inclined plane. E.g. Find the common acceleration of the two particles below, if $\tan A = \frac{3}{4}$. 