

PHYSICS 11

FINAL EXAM REVIEW CHART

I can	Examples, textbook pages, notes.	I got this 😊	I need to review this !!!
... round numerical answers to a justified number of significant digits.	Math for Physics		
... convert units.			
... express numerical answers using scientific notation.			
... decompose a vector into its vector components.			
... write a vector in vector notation given its magnitude and direction.			
... calculate the magnitude and direction of a vector given a vector in vector notation.			
... draw a diagram of a vector given a vector in vector notation or magnitude and direction of a vector.			
... determine whether a quantity is a scalar or a vector.			
... give 6 examples of scalar quantities and 6 examples of vector quantities.			
... name all the base units used in the course			

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	Kinematics		
... describe motion of an object given a displacement versus time graph.			
... describe motion of an object given a velocity versus time graph.			
... describe motion of an object given an acceleration versus time graph.			
... sketch a possible velocity-time graph given a displacement-time graph.			
... sketch a possible displacement-time graph given a velocity-time graph.			
... sketch a possible acceleration-time graph given a position-time graph.			
...sketch a possible acceleration-time graph given a velocity-time graph.			
... distinguish between average velocity and instantaneous velocity.			
... explain the difference between uniform and non-uniform motion.			
... explain the difference between speed and velocity and between displacement and distance.			

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... isolate for any variable for every kinematics equation given on the formula sheet.			
... use the GRASS method to solve kinematics problems.			
... solve projectile motion problems: <ul style="list-style-type: none"> • vector components of initial velocity • time needed to reach maximum height • time to free fall • time in the air for various scenarios • maximum height • final velocity before reaching the ground • range 			
... define free fall and solve problems involving free fall.			
... describe acceleration due to gravity on Earth.			
... define velocity.			
... define acceleration.			

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	Dynamics		
... state and explain N1L			
... state and explain N2L			
... state and explain N3L			
... apply Hooke's Law			
... define net force.			
... define and describe force of friction.			
... define and describe normal force.			
... explain the difference between mass and weight.			
... define inertia.			

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... explain translational equilibrium and determine through calculations whether an object is in a translational equilibrium given information about all the forces acting upon it.			
... determine whether and how an object will accelerate when on an inclined plane.			
... determine whether and how an object will accelerate when on a horizontal surface.			
... determine whether and how an object will accelerate when suspended on a rope or a cable.			
... describe and calculate the force of tension.			
... describe the difference between a contact force and a field force.			
... describe three distinct scenarios when normal force does not have the same magnitude as the force of gravity.			

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... define one Newton.			
... explain why an object that is not accelerating is not necessarily at rest.			
... explain why an object that is accelerating may be moving at unchanging speed.			
... identify action-reaction pairs of forces.			
... isolate for any variable from every dynamics equation given on the formula sheet.			
... explain what a coefficient of friction describes.			
... explain the force of static and kinetic friction.			
... draw a free-body diagram given a scenario.			
... determine F_g parallel and F_g perpendicular.			

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	ENERGY		
... calculate kinetic energy given object's mass and speed.			
... calculate object's mass given its kinetic energy and speed.			
... calculate object's speed given its kinetic energy and mass.			
... calculate work done to change object's kinetic energy.			
... calculate work done to change object's potential energy.			
... calculate work done given force and displacement.			
... determine force needed to have work done over a given displacement.			
... determine displacement of an object given work done and force applied to do the work.			
... explain negative work.			
... give scenarios when zero work is done.			

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... calculate potential energy given mass and height of an object.			
... determine object's mass given its potential energy and height above the reference level.			
... determine object's height given its potential energy and mass.			
... apply the law of conservation of mechanical energy.			
... define power.			
... calculate power given enough information to determine work done and the length of the time interval.			
... explain why $kw \cdot h$ is a unit of energy not power.			
... define one Watt.			
... define the specific heat capacity.			
... convert between Kelvins and degrees Celsius.			

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<p>... answer all questions on the energy unit test.</p> <p>... determine the amount of heat needed to change temperature of an object of known mass and specific heat capacity.</p>			
<p>... explain thermal equilibrium.</p>			
<p>... apply the principle of thermal equilibrium to solve for final temperature or initial temperature given enough information about the objects (mass, initial or final temperature, material they are made of).</p>			

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	CIRCUIT ELECTRICITY		
... apply Ohm's law			
... explain what electric current is.			
... determine the number of electrons given total electric charge on an object.			
... determine electric current given the amount of charge and the length of the time interval.			
... determine the equivalent resistance in a circuit with resistors in series.			
... determine the equivalent resistance in a circuit with resistors in parallel.			
... explain and apply the junction rule.			
... explain and apply the loop rule.			
... calculate the net resistance in a complex circuit that contains both, resistors in parallel and resistors in series.			

I can	Examples, textbook pages, notes.	I got this ☺	I need to review this !!
... analyze complex circuits and determine missing information about electric current, voltage, resistance, and power.			
... calculate terminal voltage given information about a circuit, and internal resistance in a battery.			
... calculate the emf given the terminal voltage, internal resistance and some additional piece of information about a circuit.			
... draw an electric circuit using appropriate symbols given the circuit's description in words.			
... determine the amount of power dissipated across a resistor.			
	In conclusion		
... answer all example questions and practice questions with confidence.			
... answer textbook questions assigned throughout the course.			
... honestly say that I tried my best to learn all required material and took responsibility for my learning.			