

AP PHYSICS: UNIT 3 - Work, Energy, Power and Momentum

MR. DARLINGTON

Topic (Percent of AP Exam)	Reading	HW Problems	
6. WORK, ENERGY AND POWER (5%)		<i>Chapter 6</i>	
6.1 Work Done by a Constant Force	6.1	<u>page 162</u>	2 WEEKS
*Definition of work done by a constant force		8	
6.2 Work Done by a Varying Force	6.2	12	
*Graphical method of estimating the work done by a varying force		14	
6.3 Kinetic Energy and the Work-Energy Theorem	6.3	20	
*Definition of energy as the ability to do work		<u>page 163</u>	
*Definition of kinetic energy and the derivation of its equation		22	
*Statement of the work-energy theorem		31	
6.4 Potential Energy	6.4	39	
*Definition of potential energy and gravitational potential energy		41	
*Equation for the change in gravitational potential energy		42	
*General relationship between the change in potential energy and the force producing that change.		<u>page 164</u>	
*Equation for the change in elastic potential energy		43	
6.5 Conservative and Nonconservative Forces	6.5	53	
*Distinguish between conservative and nonconservative forces		59	
*General form of the work-energy theorem		62	
6.6 Mechanical Energy and its Conservation	6.6	66	
*Statement of the law of conservation of energy			
6.10 Power	6.10		
*Definition of power			
7. LINEAR MOMENTUM (4%)		<i>Chapter 7</i>	
7.1 Momentum and its Relation to Force	7.1	<u>page 188</u> <u>page 190</u>	1 WEEK
*Definition of linear momentum		5 35	
*Restatement of Newton's second law of motion in terms of momentum		7 40	
7.2 Conservation of Momentum	7.2	11 48	
*Derivation of the conservation of momentum theorem for a one dimensional collision.		12	
7.3 Collisions and Impulse	7.3	15	
*Definition of impulse		17	
7.4 - 7.6 Conservation of Energy and Momentum in Collisions	7.4	<u>page 189</u>	
*Definition of elastic and inelastic collisions and problems involving both types of collisions	7.5	20	
	7.6	22	
7.7 Collisions in Two Dimensions		24	
*Problem solving for collisions in two dimensions	7.7	26	
7.8 Center of Mass		27	
*Determination of the center of mass	7.8	33	

WORK, ENERGY, POWER AND MOMENTUM EXAM AND PROBLEM SET DUE DATE: FRIDAY, NOVEMBER 2, 2007