

**A. Definitions**

Conservative Force (60b)	Input Work (58)
Collision Parameter (69)	Joule (57)
Dyne (57)	Kilowatt-hour (64)
Elastic Collision (63, 55)	Kinetic Energy (59, 61)
Elastic Potential Energy (60, 60b)	Mechanical Advantage (58, RSIV)
Elasticity (68)	Mechanical Energy (62)
Efficiency (67b)	Output Work (58)
Energy (59)	Potential Energy (60)
Gravitational Potential Energy (60, 60b)	Power (64, 65)
Heat Energy (59, 62)	Simple Machine (58)
Helical (6b, 60b)	Spring Constant (33,60b)
Horsepower (64)	Watt (64)
Inelastic Collision (63,55)	Work (47, 57, 60, 60b)

**B. Discoveries**

- How can work be calculated from a graph of Force vs. Displacement? (60)
- What modification is necessary in #1 if the force is not parallel to the displacement? (4d on 57)
- How can changes in gravitational potential energy be calculated where "g" is uniform? (57, 60)  
In reality, g is not uniform. Sketch a graph showing roughly how a planet's g depends on distance from the planet.
- How can elastic potential energy be calculated if the elastic restoring force is linear? (60, 60b)
- For ANY conservative force, how can we transform the force vs. displacement into a potential energy vs. displacement graph? (60, 60b)
- How can we transform a graph of potential energy vs. displacement into a graph of force vs. displacement? (60, 60b)
- How can the kinetic energy of any moving object be calculated? (formula from p. 59, 61)
- What is the "Work-Energy Theorem"? (62)
- What is the principle of energy conservation? (59, 62)  
-How can we use it to predict how high an object can coast?
- Under what circumstances is mechanical energy conserved?  
-How is a frictionless simple machine's input work related to its output work? (47, 58, RS IV)
- What is conserved in ALL collisions? (65, 66, RS IV)
- How can power be calculated from propelling force and speed?  $P = \underline{\hspace{2cm}}$  (64)  
-What restrictions does this formula have? (65)
- Present Energy Prices in Dollars per kiloWatt-hour (64)
 

a. Gasoline:	b. Electrical:	c. Horse:	d. Human:
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- One foot-pound = \_\_\_\_ Joule. One Joule = \_\_\_\_ ft-lb. (57) One kW-hr = \_\_\_\_ J. (64)
- How much energy can be obtained from one gallon of gasoline? (64)
- Two Trajectory Principles: (63)
  - Does the gravitational force on a projectile ever change the horizontal part of its velocity?
  - Does the horizontal motion of a projectile have any effect on its vertical acceleration?