

Chapter 8 Practice

Potential Energy = mgh

Kinetic energy = $\frac{1}{2}mv^2$ or $Fd = \frac{1}{2}mv^2$ Gravity 10 m/s^2

Force = mg

Work = Fd

Power = w/t

Momentum = mv

Read and outline CH 8 You will get to use your CH 8 outline notes on the CH 8 test

Chapter 8 end of chapter problems

Review Questions 1-20,

Plug and Chug 1-10

Think and Solve 1-5

Review Questions 1. work; objects energy 2. three 3. Same 200J 4. 100J 5. 200W 6. PE and KE 7. a.100J b. 200J 8. 200J 9. 8000J 18,000J 10. 50J 11. Energy is conserved 12. Material that forms coal was produced by the sun's energy 13. It is less than the energy in gasoline 14. Can change its magnitude and/or direction 15. Work out can not exceed work in; no 16. It can multiply force by a certain amount 17. Type 3 - always, type 1 - maybe 18. 35% 19. TMA - no friction, AMA - with friction, if a machine was 100% efficient they would be the same because there would be no loss of energy due to friction. 20. 10%

Plug and Chug 1. 70J 2. 1100J 3. 550W 4. a. 270J b. 270J; same 5. 4000MJ or 4,000,000,000J or $4.0 \times 10^9 \text{ J}$ 6. 4000MW or 4,000,000,000W or $4.0 \times 10^9 \text{ W}$ 7. 24J 8. 300N 9. 1000N 10. 35.6 mi/gal

Think and Solve 1. 4 x higher, 4 x PE, 4 x KE, 2 x speed, 2. Half the time, 5s 3. $Fd = \text{change in KE}$ so 2 times the speed is 4 times the KE and F is constant; so $d = 4 \times 20\text{m}$ so $d=80\text{m}$ 4. Work / Liter = $0.25 \times 40 \text{ MJ} = 10\text{MJ}$ $d = W / F = 10\text{MJ} / 1000\text{N}$ 10km 5. mechanical advantage is 2, see figure 8.12 b, rope tension is half.