

**AP CHEMISTRY**  
**UNIT IV TOPICS**

I. First Law of Thermodynamics

A. Definitions

pgs 229-232  
(up to First Law of Thermodynamics)  
**p. 267 #31, 33, 35**

1. Heats of reaction
2. Heat capacity
3. Enthalpy

B. Calculating Heats of Reactions

pgs 236-252; 330  
**p. 268 #41, 43, 45, 47, 51, 53, 55, 57, 65, 67a,b**

1. Using  $mC\Delta T$
2. Born-Haber Cycle
3. Hess= Law of Heat Summation
4. Bond energies

II. Second Law of Thermodynamics

A. Entropy

pgs 749-759; 762-766  
**p. 783 #19-41 odd, 26, 45a,c,47, 51-61 odd, 65**

1. Definitions
2. Calculations

B. Free Energy

pgs 759-762; 766-773

1. Definitions
2. Calculations

C. Predicting Reaction Tendencies

pgs 773-774

D. Energy Sources

pgs 252-263