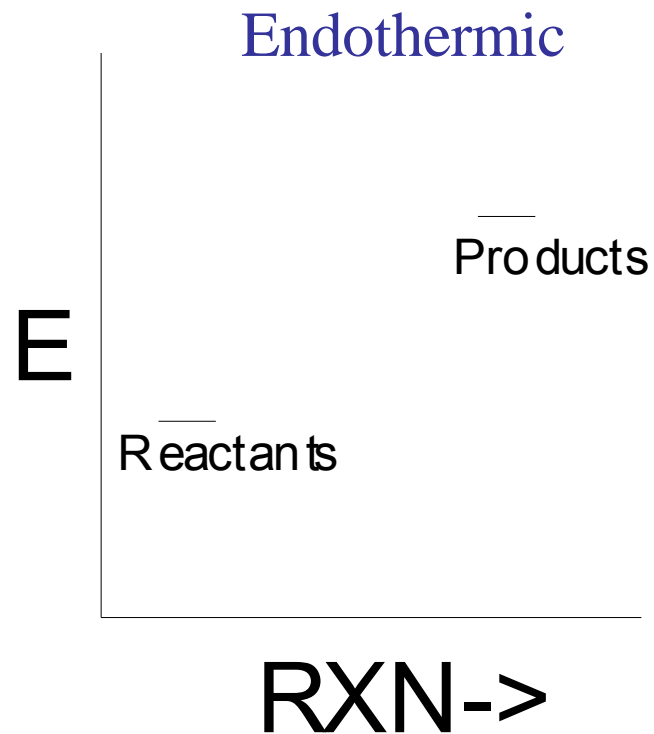
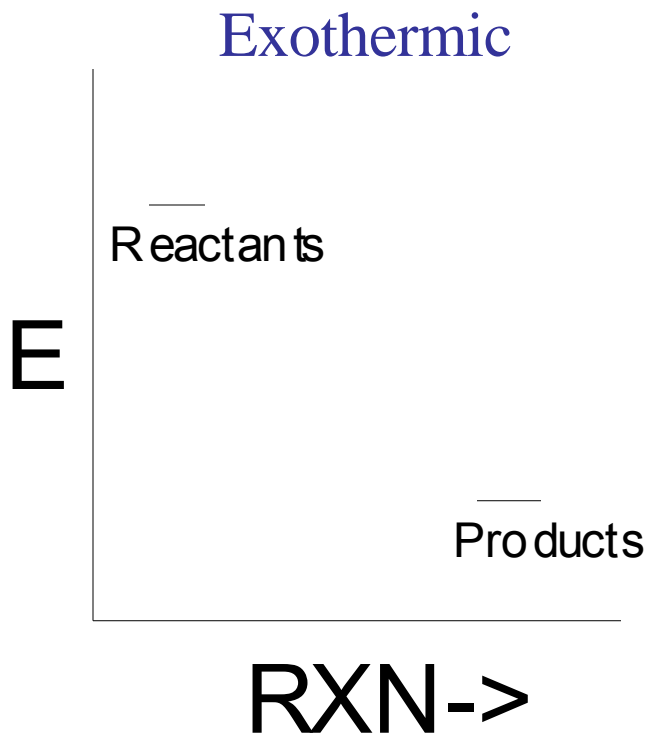


# Energy

- Capacity to do work = Force • distance or  $E = F \cdot d$  (Units:  $N \cdot m = J$ )
- Law of conservation of energy: Energy cannot be created or destroyed. It can only be converted from one form to another.
- Types of Energy:
  - Kinetic Energy = energy of motion
  - Potential Energy = energy of position (also chemical)
  - Electromagnetic Energy (light)
- Thermochemistry = study of energy in chemical reactions

# Potential Energy Reaction Pathway Diagrams



# Naming “Normal” Alkanes (1-4)

# C	# H	Formula	Name
1	4	$\text{CH}_4$	Methane
2	6	$\text{H}_3\text{CCH}_3$ ( $\text{C}_2\text{H}_6$ )	Ethane
3	8	$\text{H}_3\text{CCH}_2\text{CH}_3$	Propane
4	10	$\text{H}_3\text{CCH}_2\text{CH}_2\text{CH}_3$	Butane

# Naming “Normal” Alkanes (>4 )

Named systematically using Greek prefixes:

Greek Prefix for # of C + -ane

# C	Prefix
5	Penta-
6	Hexa-
7	Hepta-
8	Octa-
9	Nona-
10	Deca-

Example:  $\text{H}_3\text{CCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3 = \text{heptane}$

# Alkane Subunits & General Formula

- Subunits:
  - $-\text{CH}_2-$  : methylene group
  - $-\text{CH}_3$  : methyl group
- General Formula:  $\text{C}_n\text{H}_{2n+2}$