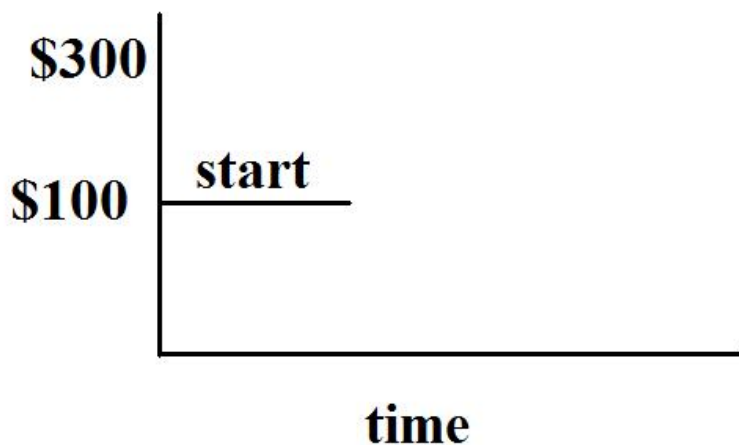


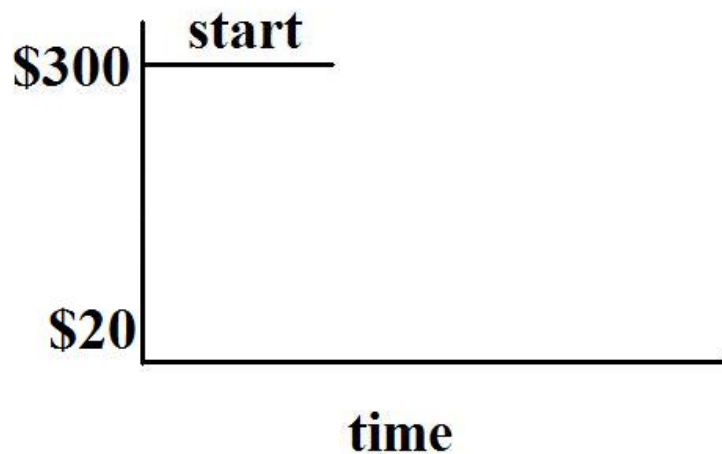
Think of energy as Money. Let's look at the graph of depositing \$200 into an account that held \$100.

Money Flow

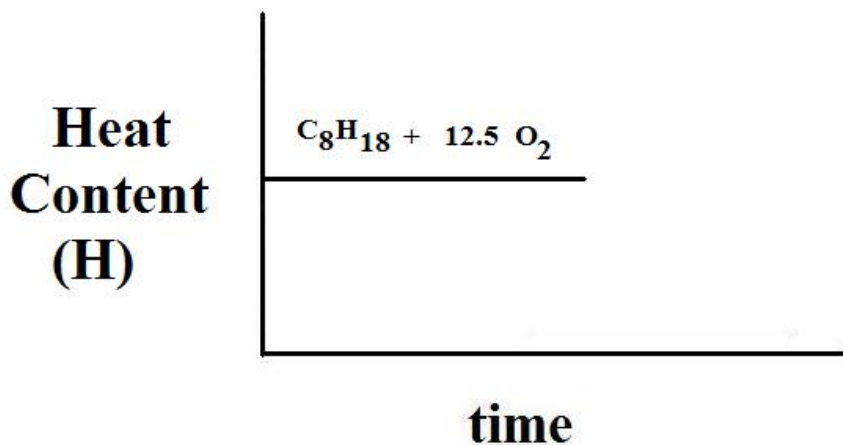


Now, Let's imagine that you bought something and your statement shows that you now have only \$20.

Money Flow



Okay – Now, Let's look at Energy instead of Money





Processes

Endothermic

$\Delta H =$

Exothermic

$\Delta H =$

Let's Try Some:

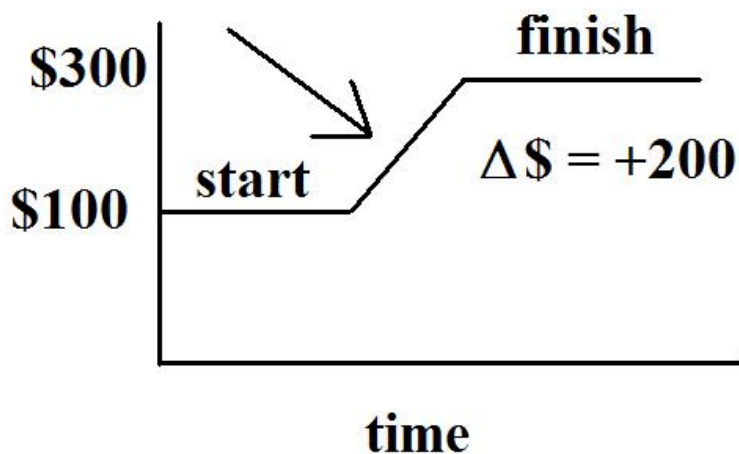
Equation	Type	Exo / Endo
$\text{CH}_4 + 1.5 \text{ O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$	_____	_____
$\text{X}_{(g)} \rightarrow \text{X}_{(l)}$	_____	_____
$2 \text{ V} + 1 \text{ Y}_2 \rightarrow 2 \text{ VY}$	_____	_____
$\text{D}_{(l)} \rightarrow \text{D}_{(s)}$	_____	_____
$\text{A}_{(s)} \rightarrow \text{A}_{(l)}$	_____	_____
$2 \text{ ST} \rightarrow 2 \text{ S} + 1 \text{ T}_2$	_____	_____
$\text{T}_{(l)} \rightarrow \text{T}_{(g)}$	_____	_____

Think of energy as Money. Let's look at the graph of depositing \$200 into an account that held \$100.

Money Flow

ENDOS
[Money In]

$$\Delta \$ = +200$$

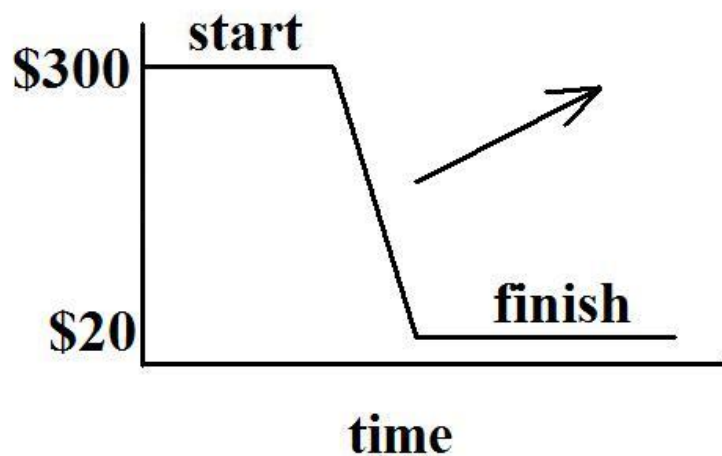


Now, Let's imagine that you bought something and your statement shows that you now have only \$20.

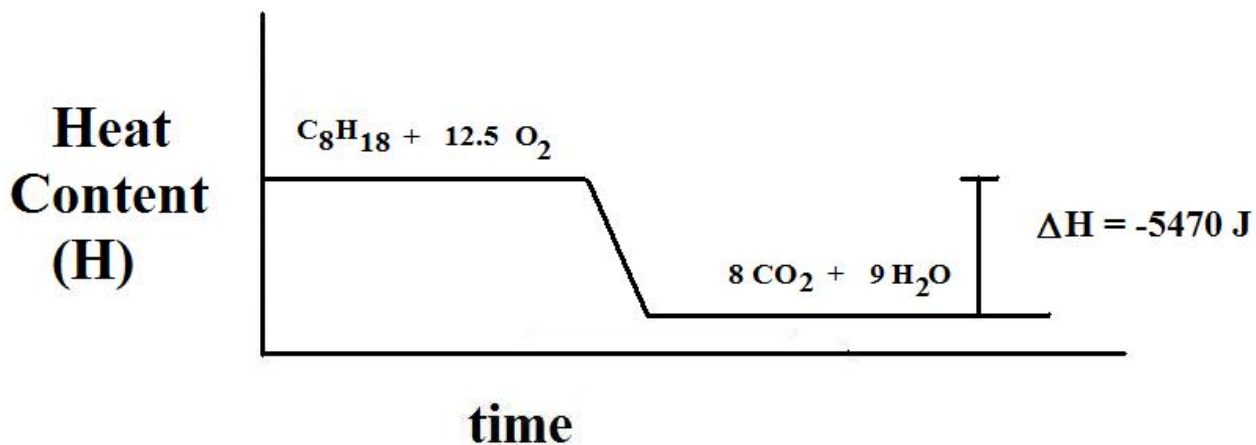
Money Flow

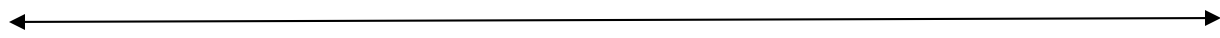
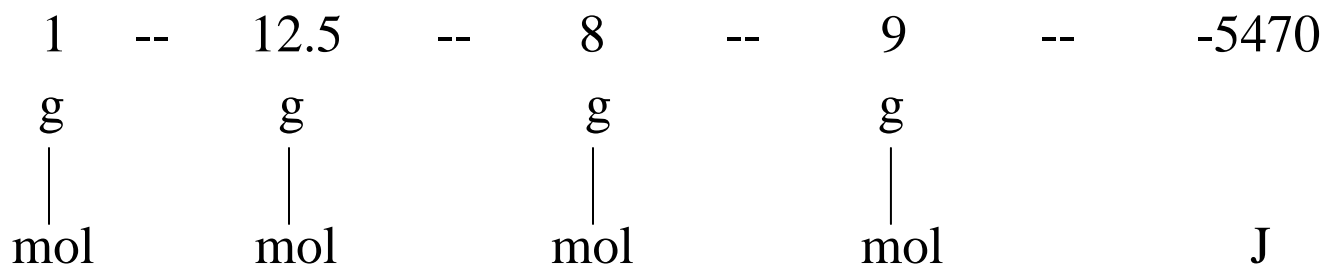
[Money Out]

$$\Delta \$ = -280$$



Okay – Now, Let's look at Energy instead of Money





NIF NIF NIF NIF NIF NIF NIF NIF NIF NIF
Processes

Endothermic

$\Delta H = [+]$

Heating

Melting $s \rightarrow l$

Boiling $l \rightarrow g$

Decomposition $\text{XXXXX} \rightarrow \text{XX} + \text{XX}$

Exothermic

$\Delta H = [-]$

Cooling

Freezing $l \rightarrow s$

Condensing $g \rightarrow l$

Formation $\text{XX} + \text{XXXX} \rightarrow \text{XXXXXX}$

Combustion $\text{CHO} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$

Let's Try Some:

Equation	Type	Exo / Endo
$\text{CH}_4 + 1.5 \text{ O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$	Combustion	Exothermic
$\text{X}_{(g)} \rightarrow \text{X}_{(l)}$	Condensation	Exothermic
$2 \text{ V} + 1 \text{ Y}_2 \rightarrow 2 \text{ VY}$	Formation	Exothermic
$\text{D}_{(l)} \rightarrow \text{D}_{(s)}$	Freezing	Exothermic
$\text{A}_{(s)} \rightarrow \text{A}_{(l)}$	Melting	Endothermic
$2 \text{ ST} \rightarrow 2 \text{ S} + 1 \text{ T}_2$	Decomposition	Endothermic
$\text{T}_{(l)} \rightarrow \text{T}_{(g)}$	Boiling	Endothermic