

- Piazza (ask, answer questions actively) \*BONUS\*

- Taking notes for class. \*BONUS\*

- LM due 1/17 9 a.m.

- Class participation \*BONUS\*

(1) +10 points (poll)

(2) +10 points (poll)

- why do different phases have diff enthalpies?

- Liquid - close together

- IM forces are attractive

- lower enthalpy (energy) (H) (more stable)

- Gas - far apart

- no IM forces

- higher energy (H)

\* To break bonds / forces, put in energy \*

\* stronger the IMFs, bigger the diff between liquid and gas

$$\Delta H_{\text{vap}} = H_{\text{gas}} - H_{\text{liq}} > 0 \quad "+"$$

+ change in energy is energy into the system

(3) +10 points (poll)

### Entropy

↑ w/ inc volume

↑ w/ inc temp

↑ w/ inc # of molec

↑ from solid → liquid → gas

UNIVERSE TENDS toward higher entropy

(4) +10 points (poll)

(5) +10 points (poll)

Gases have higher entropy than liquids  
- For almost every compound, liquid  $\rightarrow$  gas, entropy  
is same

(6) + 10 points (poll)