What Questions Do you Have?

Kinetic Energy

graphs

gas theory

maxwell boltsman graphs

total pressure stuff

ex. of using molar mass + molarity in stoich

Calculate theoretical moles

gaseous stuff

IMFs

(LDF, dipole-d hydrog

Kinetic Molecular Theory

- all particles are in constant, random motion
- gases particles have zero volume
- elastic collisions
  - ↳ no loss of E during a collision

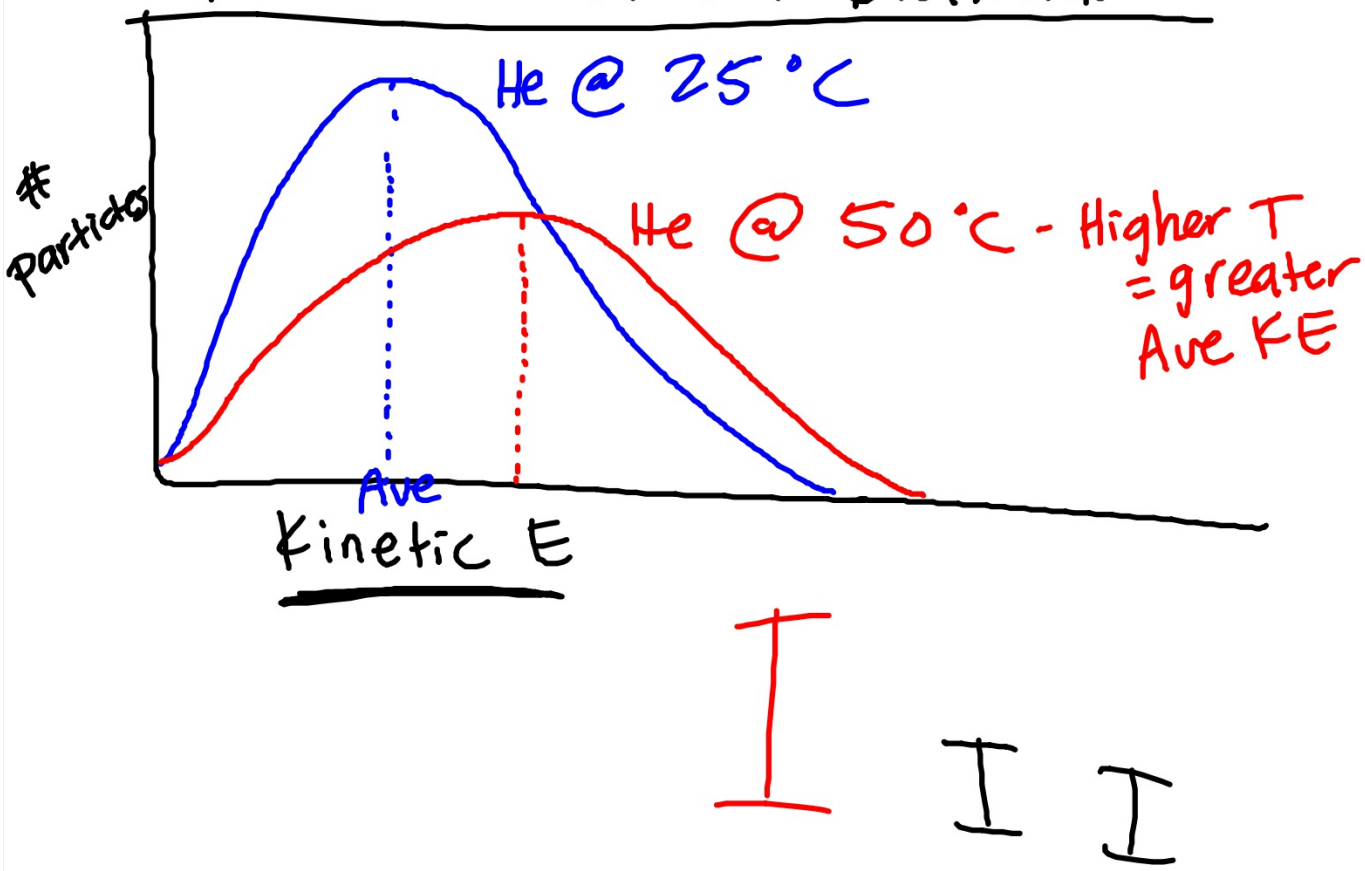
★ gases have zero IMF's
- High T
- Low P

> more ideal gas behavior

He Ne, Ar, Kr Same T/P

Most ideal gas = He

Maxwell-Boltzmann Distributions



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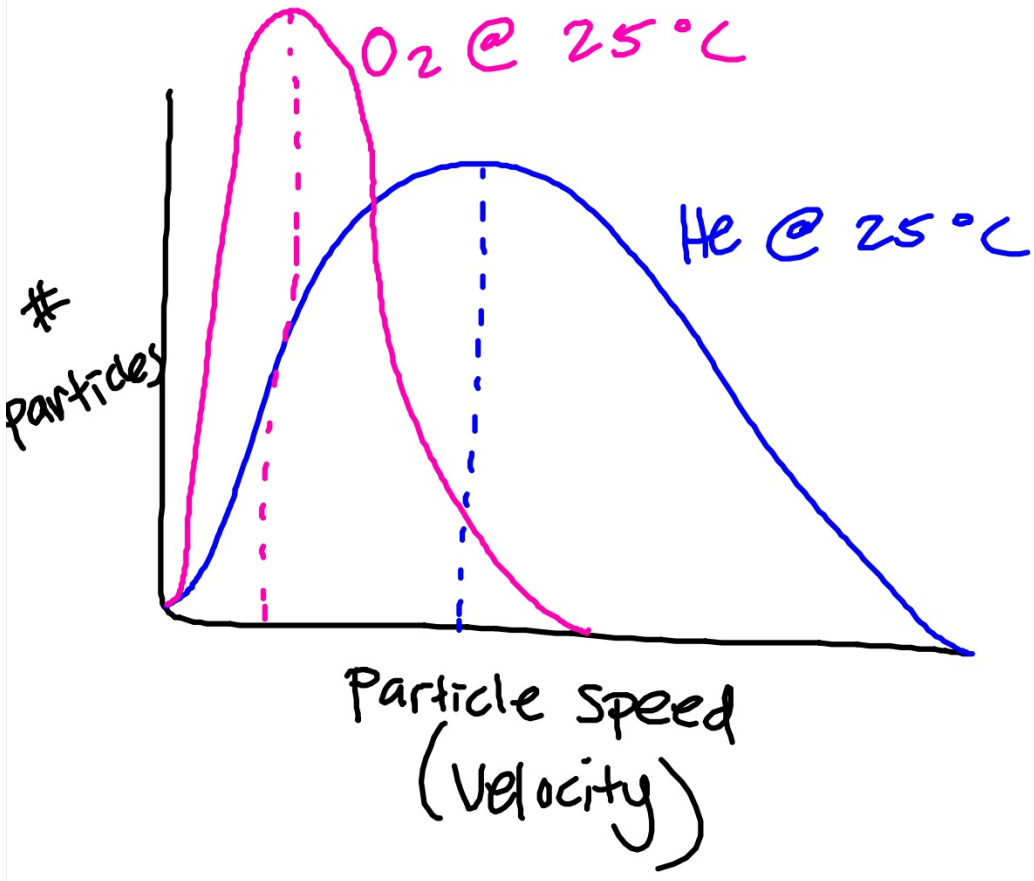
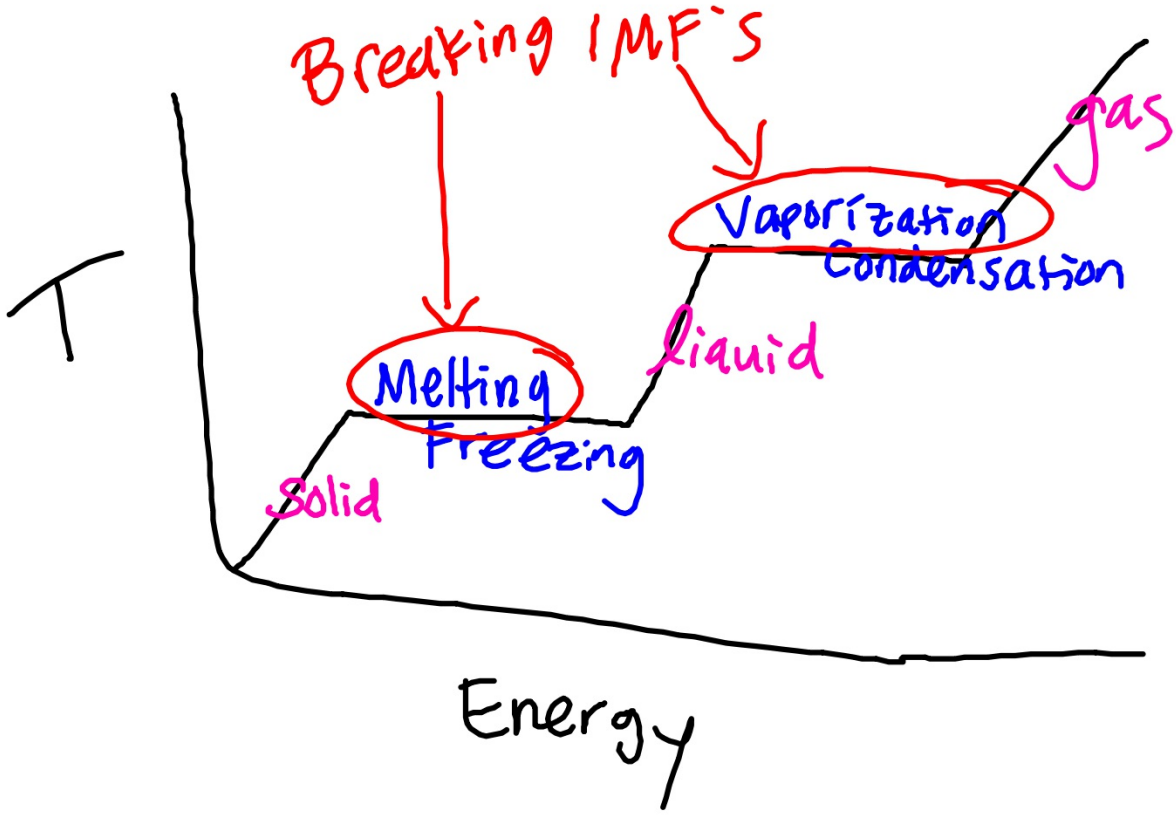
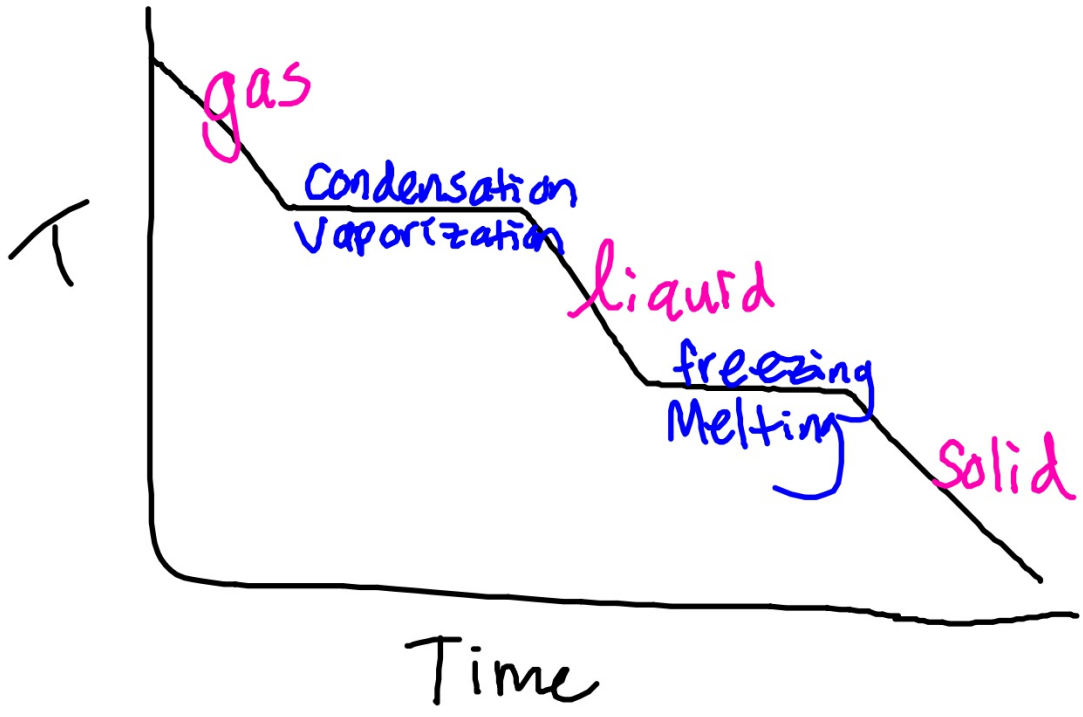
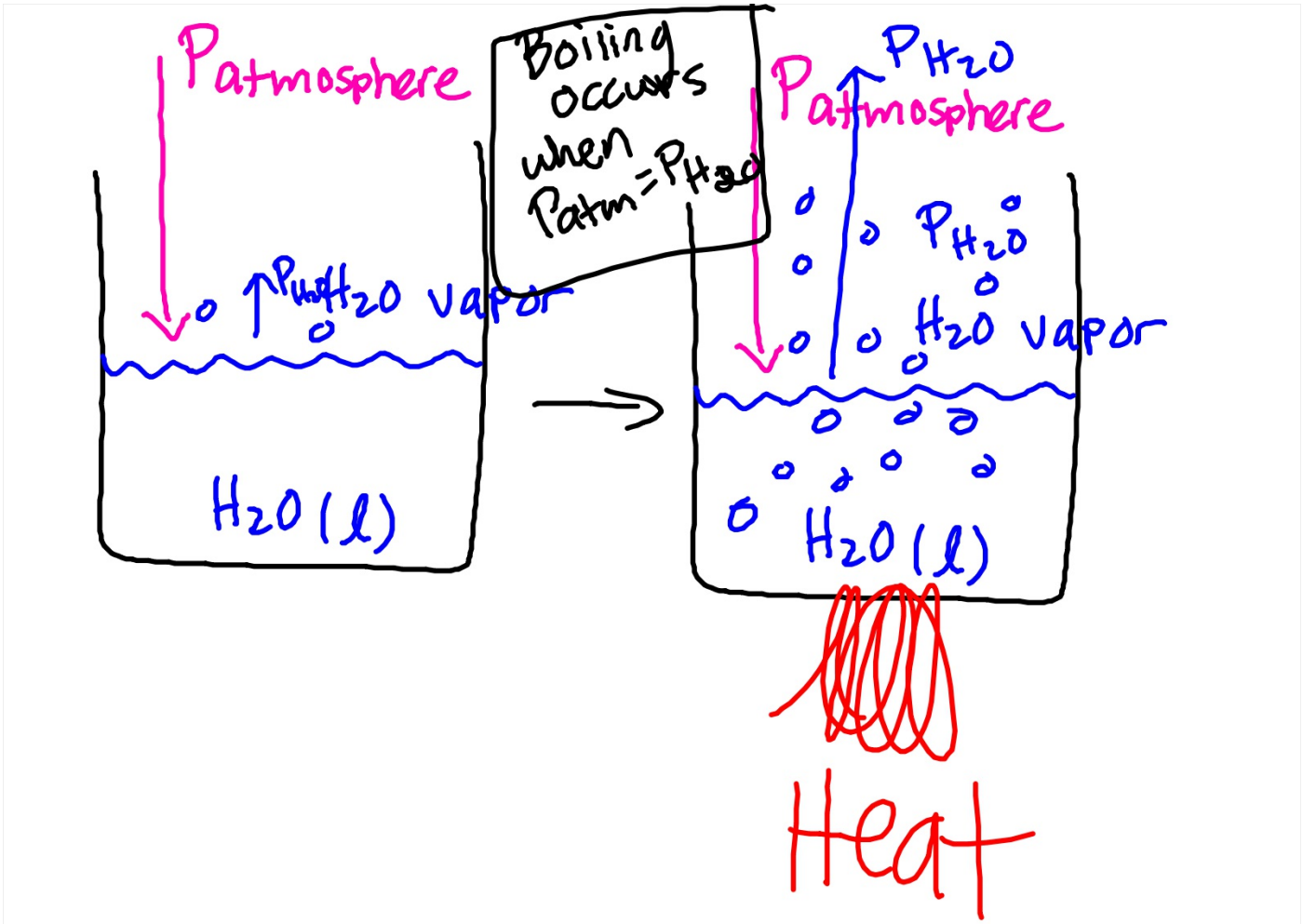
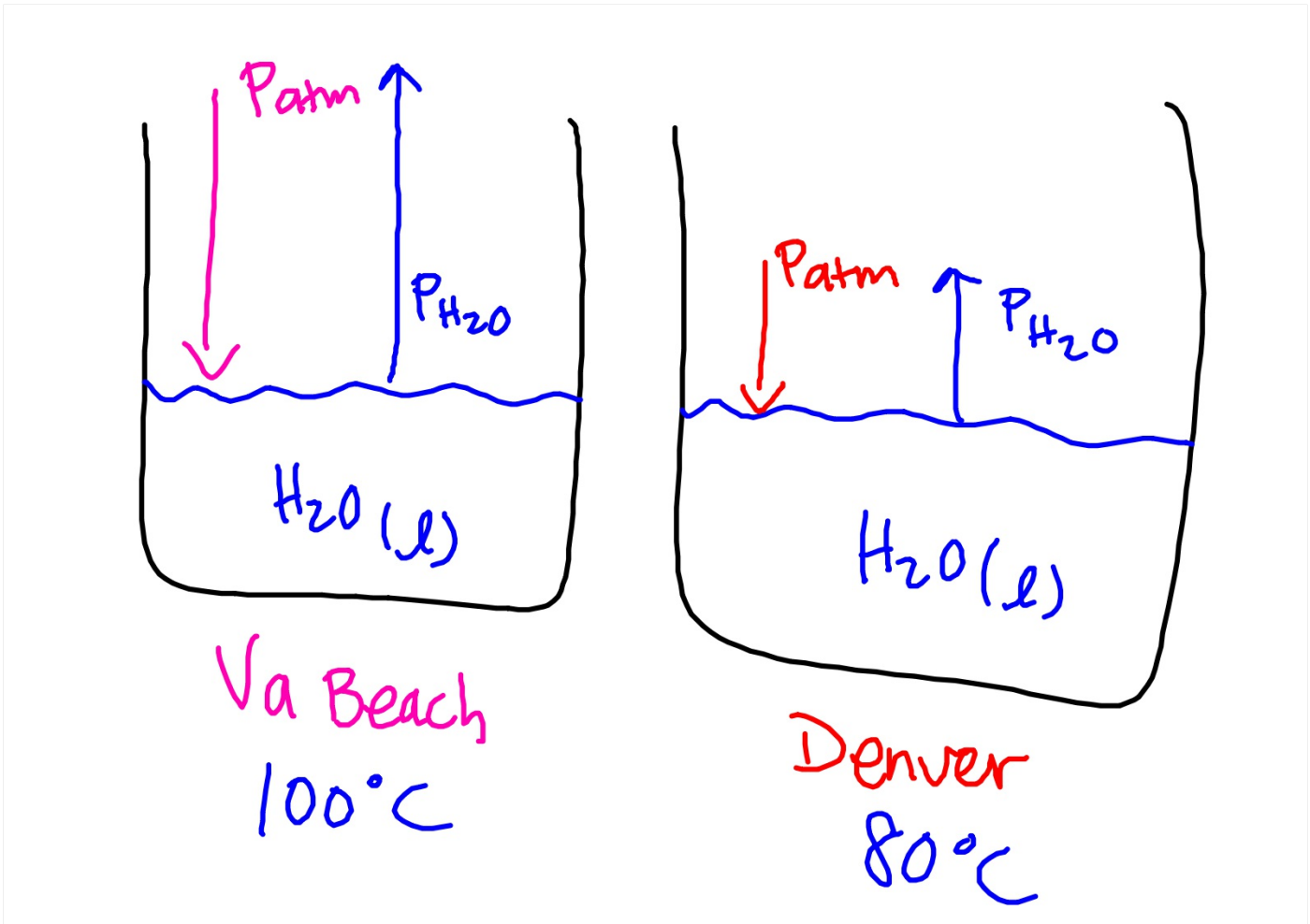
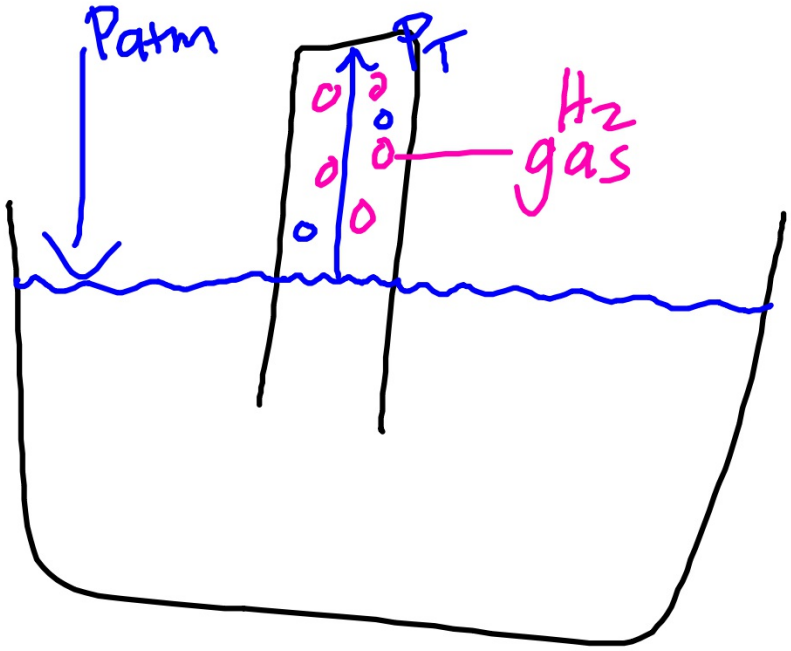



Breaking IMF's
gas
Vaporization
Condensation
liquid
Melting
Freezing
Solid
T
Energy

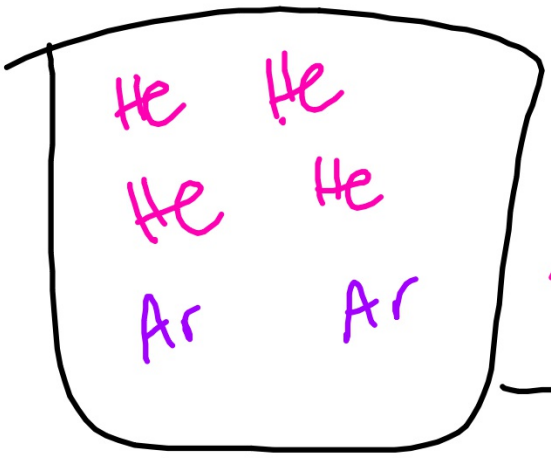

gas
Condensation
Vaporization
liquid
freezing
Melting
Solid
T
Time


Patmosphere
Boiling occurs when Patm = PH2O
PH2O
Patmosphere
PH2O vapor
H2O (l)
PH2O
H2O vapor
H2O (l)
Heat


Patm
PH2O
H2O (l)
Va Beach
100°C
Patm
PH2O
H2O (l)
Denver
80°C



$$P_{atm} = P_T = P_{H_2} + P_{H_2O}$$



$P_{Ar} = 2$ atm

$P_{He} = 4$ atm

$P_T = 6$ atm

Same T

Same V

$2KClO_{3(s)} \rightarrow 3O_{2(g)} + 2KCl_{(s)}$

10. g
Complete rxn

? L
T = 30. °C
P = 0.196 atm

n = ? mol = 0.1224 mol O_2

$(0.196\ atm)V = (0.1224\ mol)\left(0.0821 \frac{L \cdot atm}{mol \cdot K}\right)(303\ K)$

V = 15.5 L

16 L

$2KClO_{3(s)} \rightarrow 3O_{2(g)} + 2KCl_{(s)}$

? g

P = 1.5 atm
V = 5 L
T = 500. K

$PV = nRT$

n = 0.1827 mol O_2

$$0.1827\ mol\ O_2 \left| \frac{2\ mol\ KClO_3}{3\ mol\ O_2} \right| \frac{122.551\ g\ KClO_3}{1\ mol\ KClO_3}$$

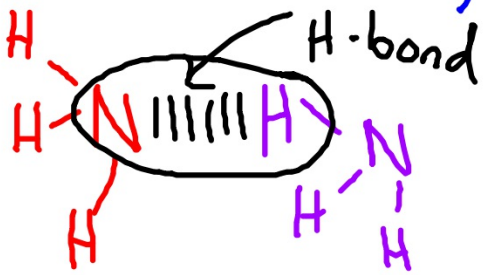
= 14.9 g $KClO_3$

IMF's - determine melting pt, boiling pt, & vapor pressure

① London - everybody b/c everybody has e⁻
more e⁻ = more polarizable = stronger LDF's (create temp. dipoles)

② Dipole - dipole
Polar molecules

③ H-bonding
H bonded to N, O, F



Stronger IMF's = Higher melting pt.
= Higher boiling pt.
= Lower vapor press.
= More E to break IMF's