Noteset 7B (Part 1) - In Class Noteset
Fundimental Gas Laws

Gas Law: Known relationship between different measured values related to the gas state of matter.

Volume (V) Size mL/L/cm^3	**Pressure** (P) # collisions atm/kPa/mmHg
Temperature (T) Speed °C/K	**Amount** (n) # particles g/mol

Fundimetal gas laws

Boyle's Law

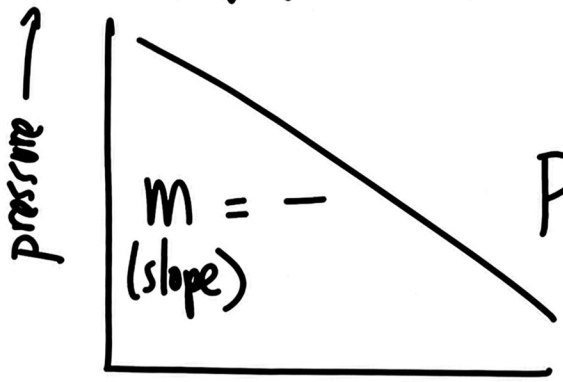
V is a indirect relationship to P in an ideal gas (normal behavior)
T is constant

$P\uparrow V\downarrow$ $P\downarrow V\uparrow$ k = constant

$$P \cdot V = k$$

$$P_1 V_1 = P_2 V_2$$

1 = state 1 (start)
2 = state 2 (end)



Indirect: Both variables go in diff. directions

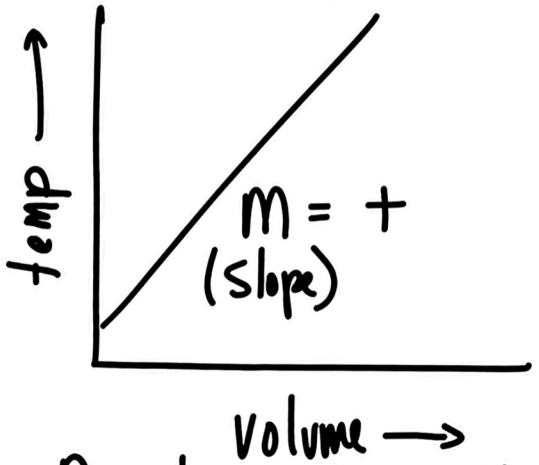
Fundimetal gas laws

K = constant

Charles' Law

V is a direct relationship to T in an ideal gas (normal behavior)
P is constant

V ↑ T ↑ V ↓ T ↓



$$\frac{V}{T} = k$$

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

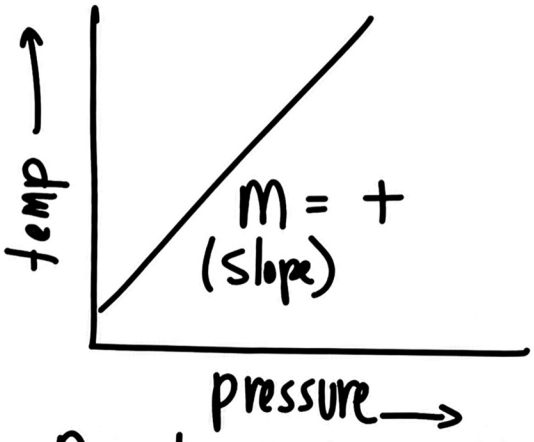
Direct : Both variables go in the same direction

K = constant

Gay-Lussac's Law

P is a direct relationship to T in an ideal gas (normal behavior)
V is constant

P ↑ T ↑ P ↓ T ↓



$$\frac{P}{T} = k$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

Direct : Both variables go in the same direction