Thermal Gas laws

pV = nRT = NkT

p = presser

V = volume

N = no. or moles

R = molar gas constant

T = temperature in k

N = number of particles

K = Bolterman constant

pV = nRT

pV = constant

p 1/V



p1V1 = p2V2

volume – particles don’t have a volume

attraction – particles do not have attraction

V1/T1 = V2/T2

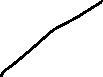
Duration – duration inbetween collision is greater than collisions

Elastic – KE is reserved in collision

P1/T1 = P2/T2

Number – assume large numbers

Everything that happens is random



BoyWs Law: 
Statement: 
Assumptions: 
Charles's Law. 
Statement: 
Assumptions: 
The Pressure Law: 
Statement: 
Assumptions: 
The Ideal Gas Equation 
Since the number of moles of gas is always the same for 
these to be valid, then it implies that 
This is more generally known as the ideal gas equation: 
While the gas laws do not specifically come up in your exam, it will be very handy to know theml 
There are 3 gas laws, which together provide empirical evidence for the Ideal Gas Equation. 
PV = nRT 
p 
where R is the molar gas constant, R 
= 8.31 JK-1mol-1 
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