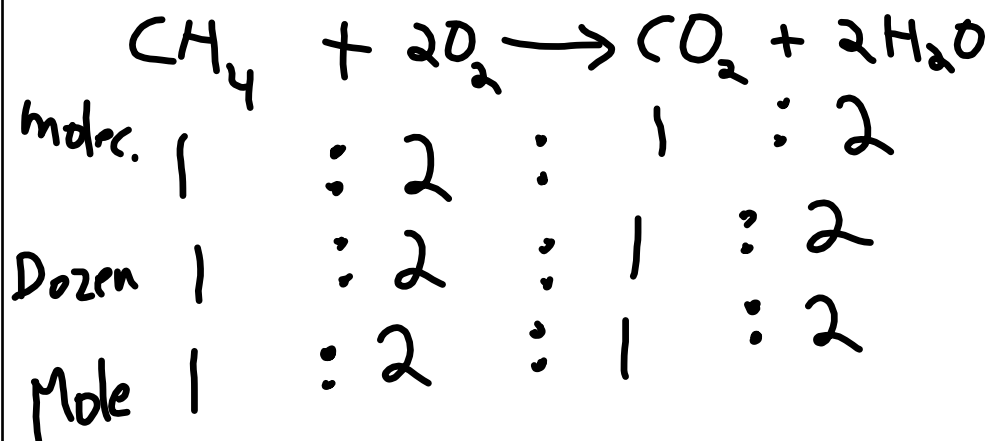


Mole to Mole Stoichiometry

Recall - Molecule Stoichiometry



Example - How many moles of water molecules are produced when 3.6 mol CH_4 react?

$$3.6 \text{ moles } \cancel{\text{CH}_4} \times \frac{2 \text{ mol H}_2\text{O}}{1 \cancel{\text{CH}_4}} = 7.2 \text{ mol H}_2\text{O}$$

Example - How many moles of CH_4 react with 0.53 moles O_2 ?

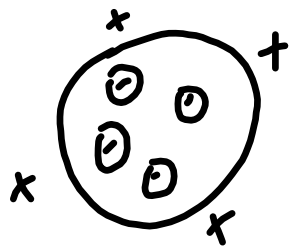
$$0.53 \cancel{\text{mol O}_2} \times \frac{1 \text{ mol CH}_4}{2 \cancel{\text{mol O}_2}} = 0.265 \text{ mol CH}_4$$

Questions - #4-6 p.115
(choose)

Models of the Atom

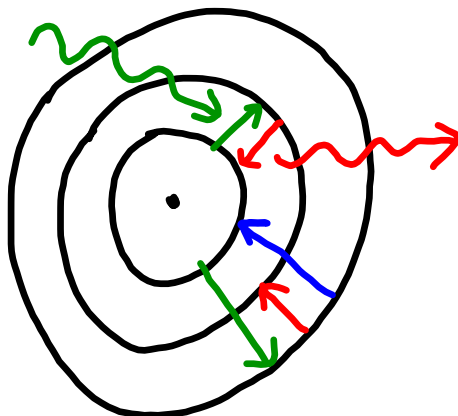
1. Greek - philosophers - atomos
(uncut)

2. Dalton/Thomson - plum pudding



3. Rutherford - Gold foil experim.
- Nucleus has most mass & charge
- Empty space

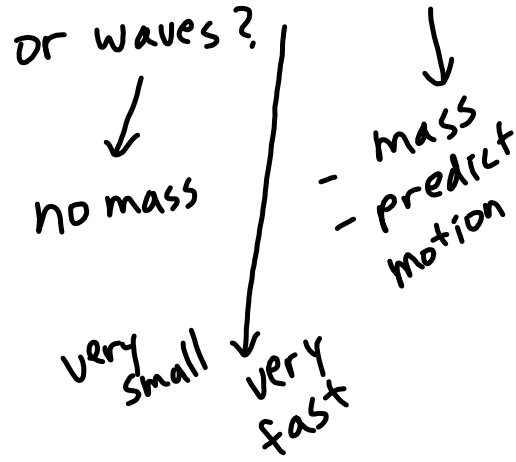
4. Bohr - Based on H atom model.
- e^- orbits nucleus
- Evidence - spectral lines



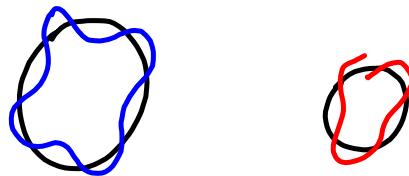
ROYGBIV
spectrum
(lines)

Quantum Mechanical Atom

De Broglie - Are electrons particles or waves?



Wave Mechanical Model -



Quantum mechanical Model

- electrons have certain amounts of energy.

Heisenberg Uncertainty principle

- You cannot know position and momentum of an electron.
- "Orbitals" - high probability of finding an electron (90%)

Read: p.127-129
 ↓
 notes p.137