

Thomson's math

③

$$\frac{mE}{Br} = Bq$$

$$\frac{E}{B^2 r} = \frac{q}{m}$$

Charge: mass ratio

①

$$\frac{mv^2}{r} = Bq \times \cancel{v}$$

②

$$E = Bv$$

$$v = \frac{E}{B}$$

Sep 21-7:03 AM

Ernest Rutherford

$\alpha = \text{alpha} = {}^4_2\text{He}$

most go through \rightarrow small
 few bounce back \rightarrow massive
nucleus (positive)

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Robert Millikan

drops steel

OIL

e^- from

E_g

mg

mass of drop?

$mg = E_g$

charge on some e^-

Turn off plates - drop fall @ Term. velocity

measure T.V. volume density mass drop

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from T.V. $mg = E_g$

solve for q (charge on some e^-)

$\times 1000s$

$G.C.F = \text{charge of } e^-$

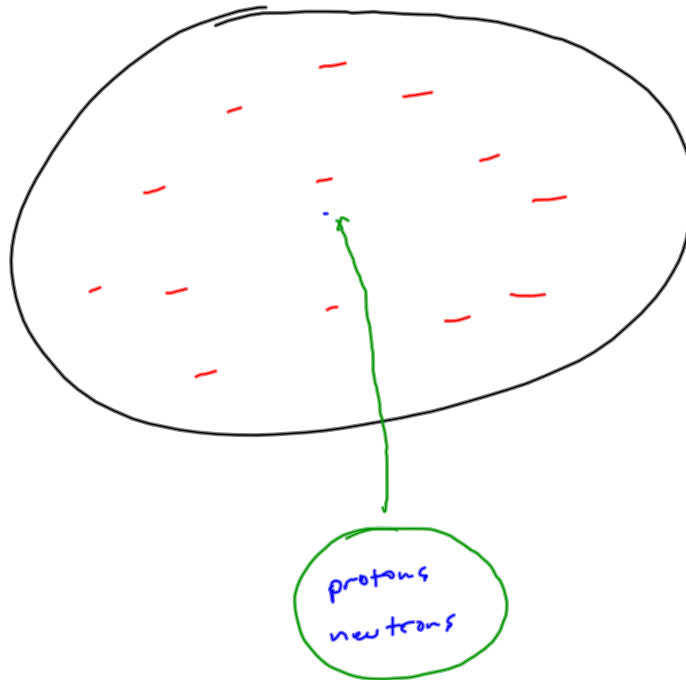
use T's ratio

mass e^-

$e^- = 1.6 \times 10^{-19} \text{ Coulombs}$

Sep 29-8:14 AM

Atomic Structure: The pieces



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Atomic structure: The numbers

protons (Z) = atomic number
↳ identity

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