

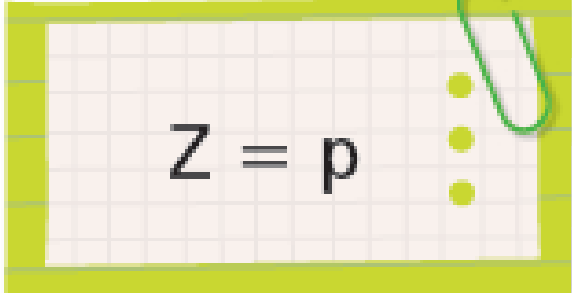
Propriedades interatômicas

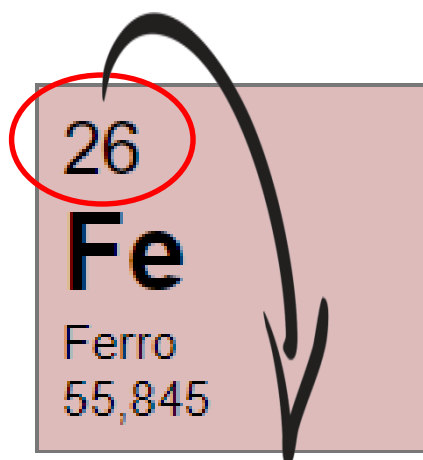
Prof. Alexandre
Química

CONSTITUIÇÃO DO ÁTOMO

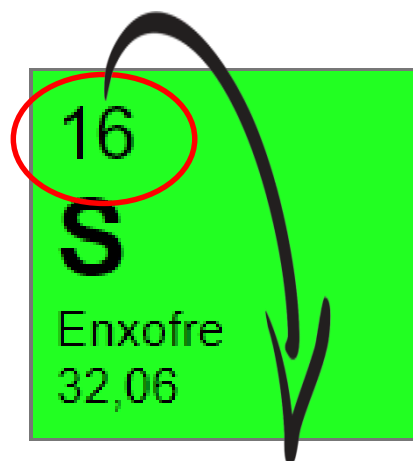
Número Atômico (Z)

- É a identidade de um elemento químico.
- Igual ao número de prótons.

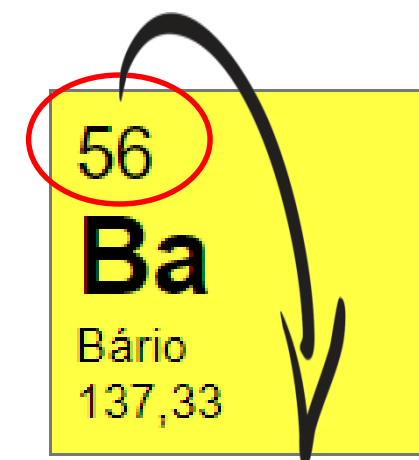

$$Z = p$$



MENOR = Z



MENOR = Z



MENOR = Z

CONSTITUIÇÃO DO ÁTOMO

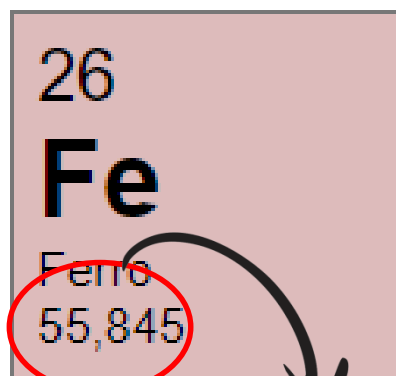
Número de Massa (**A**)

- A massa concentra-se basicamente no núcleo.
- Igual a soma do número de prótons com o número de nêutrons.

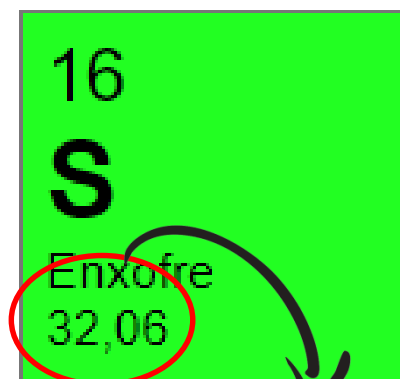
$$A = Z + n$$

$$A = p + n$$

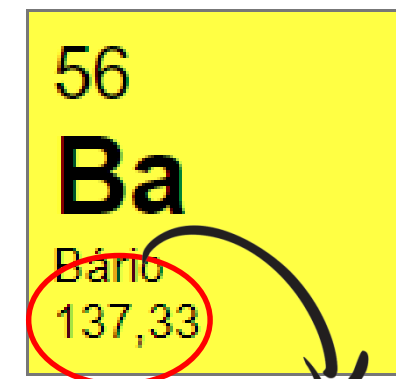
$$Z = p$$



MAIOR = **A**



MAIOR = **A**

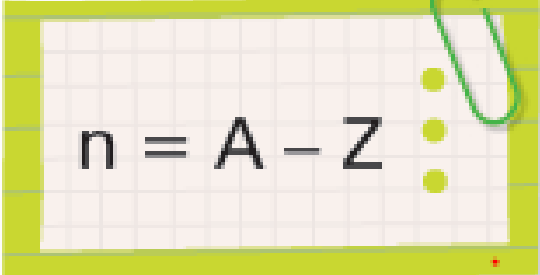


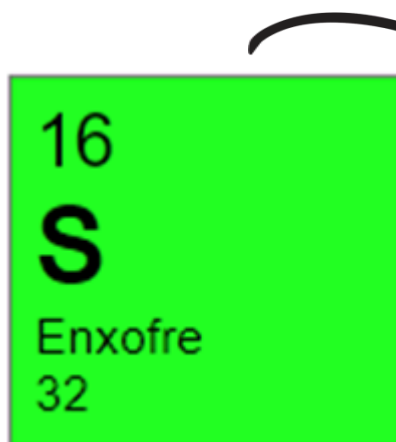
MAIOR = **A**


CONSTITUIÇÃO DO ÁTOMO

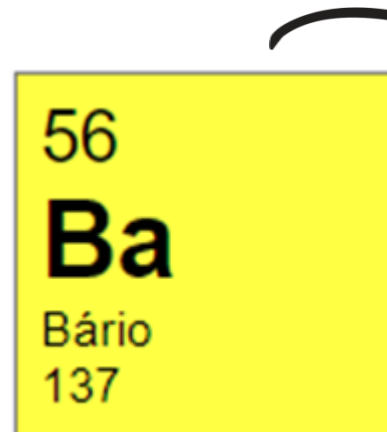
Número de Nêutrons (n)


- Igual a subtração do número de massa com o número de prótons (atômico).


$$n = A - Z$$




$$n = A - Z$$
$$n = 32 - 16$$
$$n = 16$$

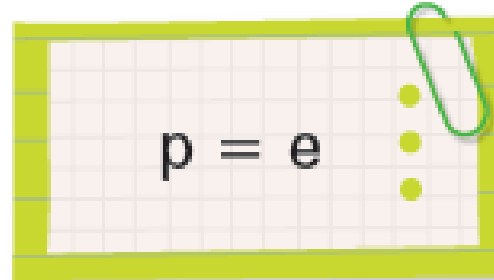



$$n = A - Z$$
$$n = 137 - 56$$
$$n = 81$$

CONSTITUIÇÃO DO ÁTOMO

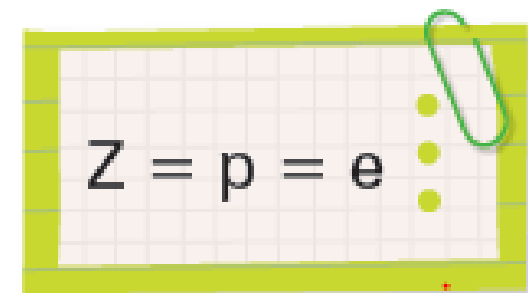
Átomo sem carga

- Átomo neutro.



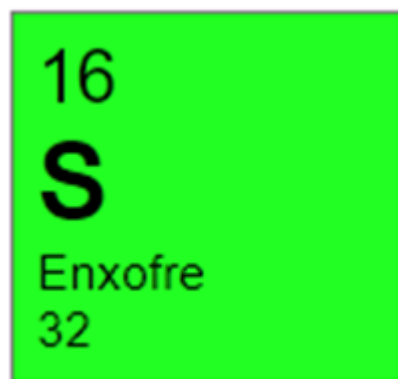
$p = e$

A notepad with a green border and a paperclip, containing the equation $p = e$ and three dots to its right.

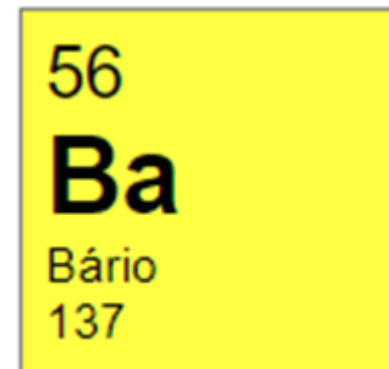


$Z = p = e$

A notepad with a green border and a paperclip, containing the equation $Z = p = e$ and three dots to its right.



16 elétrons

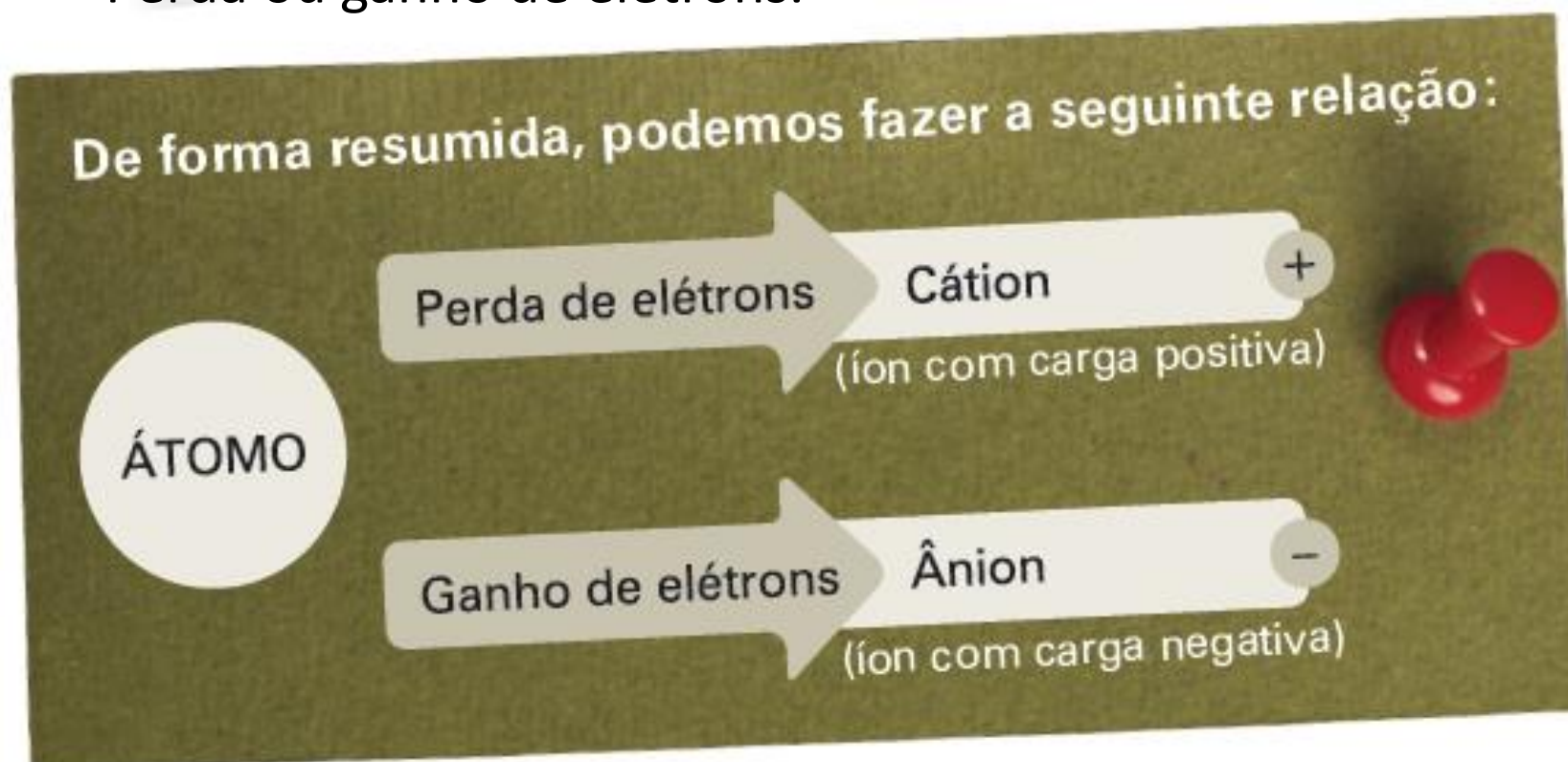
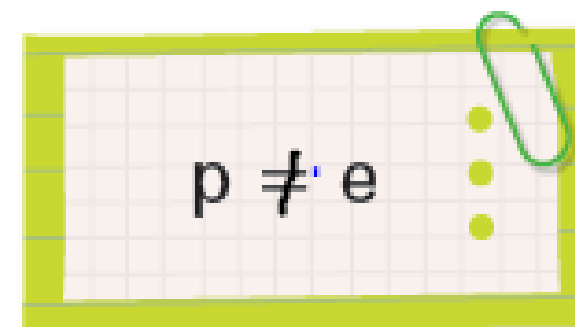


56 elétrons

CONSTITUIÇÃO DO ÁTOMO

Átomo com carga

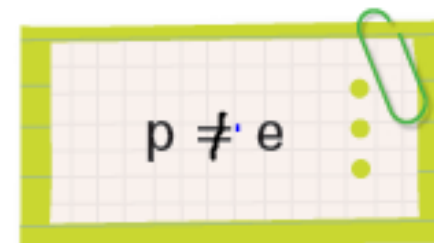
- Íon.
- Perda ou ganho de elétrons.



CONSTITUIÇÃO DO ÁTOMO

Átomo com carga

- Íon.
- Perda ou ganho de elétrons.



Átomo neutro	Cátion
${}_{13}^{27}\text{Al}$	${}_{13}^{27}\text{Al}^{3+}$
13 prótons	13 prótons
14 nêutrons	14 nêutrons
13 elétrons	10 elétrons

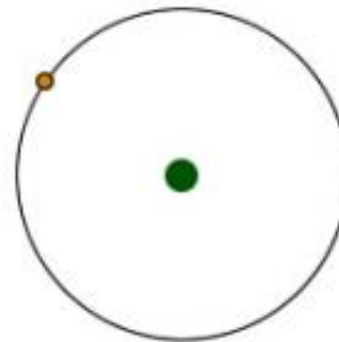
Átomo neutro	Ânion
${}_{8}^{16}\text{O}$	${}_{8}^{16}\text{O}^{2-}$
8 prótons	8 prótons
8 nêutrons	8 nêutrons
8 elétrons	10 elétrons

SEMELHANÇAS ATÔMICAS

Isótopos

- Mesmo número de prótons.
- Mesmo elemento químico.

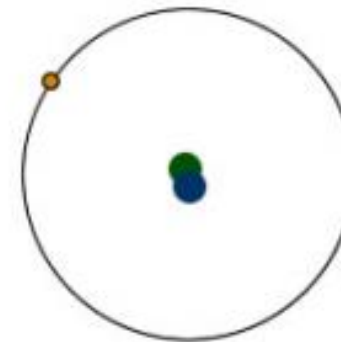
1	← atomic number
H	← element symbol
Hydrogen	← element name
1.008	← atomic weight



Prótio

1 próton

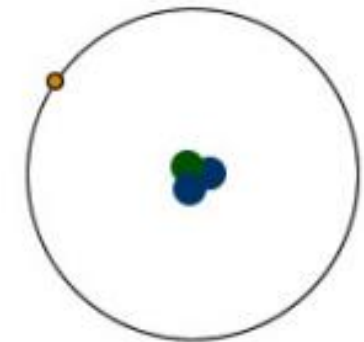
99,98%



Deutério

1 próton
1 nêutron

0,0184%



Tritio

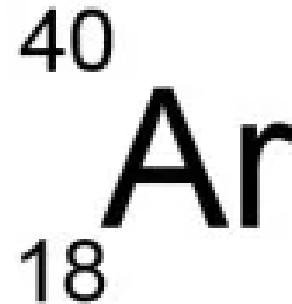
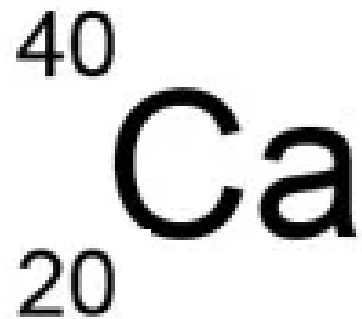
1 próton
2 nêutrons

0,0016%



Isóbaros

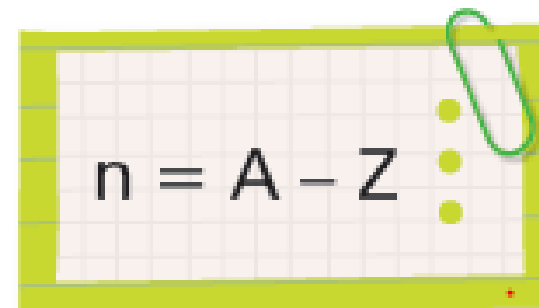
- Mesmo número de massa.
- Elementos químicos diferentes.

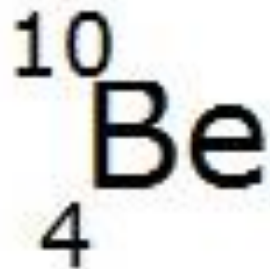


SEMELHANÇAS ATÔMICAS

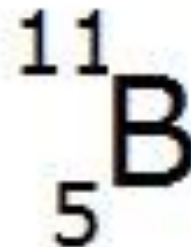
IsótoNos

- Mesmo número de nêutrons.
- Elementos químicos diferentes.


$$n = A - Z$$



$$6n$$

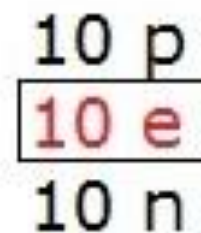
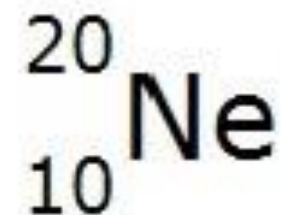
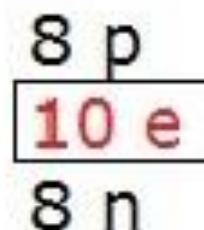
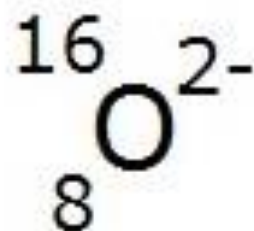
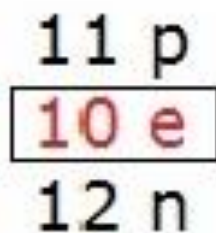
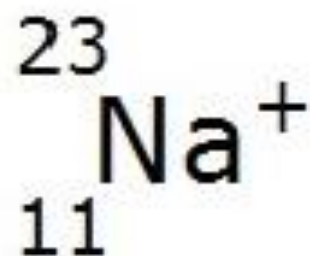
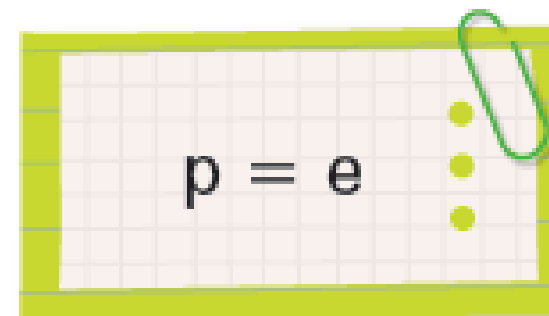


$$6n$$

SEMELHANÇAS ATÔMICAS

Isoeletrônicos

- Mesmo número de elétrons.



OBRIGADO!