

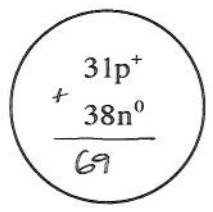
Sub-Atomic Review #2

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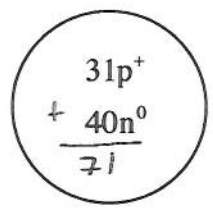
1) Complete the table below.

Atomic #	Mass #	Number of Protons	Number of Neutrons	Number of Electrons	Symbol of Element
55	134	55	79	55	Cs
83	209	83	126	81	<del>Bi</del> Bi +2

2) Gallium has two isotopes, as seen below with their percent abundance. Determine the average atomic mass of Gallium.



60.108%



39.892%

$$69 \text{ amu} \times .60108 = 41.47452$$

$$71 \text{ amu} \times .39892 = 28.32332$$

$$\frac{41.47452 + 28.32332}{69.79784} \rightarrow \boxed{69.80 \text{ amu}}$$

3) Calculate the energy in Joules of a quantum of radiant energy (energy of a photon) whose frequency is  $3.78 \times 10^{13} \text{ s}^{-1}$ .

$6.626 \times 10^{-34} \text{ J}\cdot\text{s}$  ( $\frac{\text{Hz}}{\text{s}}$ ,  $\frac{1}{\text{s}}$ , cycle per second)

$E = h\nu$  (with arrows pointing from 'h' to 'p.c.' and from 'v' to 'frequency')

$$E = (6.626 \times 10^{-34} \text{ J}\cdot\text{s}) (3.78 \times 10^{13} \frac{1}{\text{s}})$$

$$\boxed{E = 2.50 \times 10^{-20} \text{ J}}$$

4) Electron Configuration for ...

a) N  
 $1s^2 2s^2 2p^3$  [He]  $2s^2 2p^3$

b) K  
 $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$   
 [Ar]  $4s^1$