

Worksheet 3

| Isotope | Symbol | Mass #, A | Atomic #, Z | # p ⁺ | # e ⁻ | # n ⁰ |
|---------|--------------------------|-----------|-------------|------------------|------------------|------------------|
| H-1 | | | | | | |
| H-2 | | | | | | |
| H-3 | | | | | | |
| | ${}_{29}\text{Cu}^{64}$ | | | | | |
| | ${}_{12}\text{Mg}^{22}$ | | | | | |
| | | | | 33 | | 40 |
| | ${}_{80}\text{Hg}^{201}$ | | | | | |

Calculate the number of protons, electrons and neutrons of an O-17 atom that has a -2 charge.










| | |
|----------------|--|
| p ⁺ | |
| n ⁰ | |
| e ⁻ | |

How many subatomic particles does this ion have?

Calculate the number of protons, electrons and neutrons of an Cl-35 atom that has a neutral charge.

| | |
|----------------|--|
| p ⁺ | |
| n ⁰ | |
| e ⁻ | |

Draw the atomic diagrams showing all of the protons and neutrons in the nucleus and electrons in the correct shells for the following :

| | | |
|--|--|---|
| ${}_{2}\text{He}^4$  | ${}_{7}\text{N}^{14}$  | ${}_{13}\text{Al}^{28}$  |
| ${}_{11}\text{Na}^{24}$  | ${}_{18}\text{Ar}^{41}$  | ${}_{34}\text{Se}^{80}$  |
| ${}_{6}\text{C}^{14}$  | ${}_{26}\text{Fe}^{57}$  | ${}_{48}\text{Cd}^{113}$  |

How many valence electrons in the following?

| | |
|------------------|--|
| Na | |
| Ca ²⁺ | |
| O | |
| S ²⁻ | |
| Ne | |
| F ⁻ | |
| Si | |

Draw the Lewis electron dot structures for the following:

| | |
|------------------|--|
| Aluminum | |
| Carbon | |
| Oxygen | |
| Silicon | |
| Potassium | |
| NH ₃ | |
| H ₂ O | |
| Cl ₂ | |
| H ₂ | |
| Xenon (Xe) | |