Nuclear Structure:

For the following, use your periodic table and the information given about the following nuclei to complete the table. Assume the most common isotope.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Chemical Symbol | Nuclear symbol | Atomic Number (Charge Number) | Mass Number or Nucleon Number | Protons | Neutrons |
| Sodium | Na | $$$$ | 11 | 23 | 11 | 12 |
|  | Y | $$$$ |  | 90 | 39 | 51 |
| Zinc |  | $$$$ | 30 | 65 |  |  |
| Chlorine |  |  | 17 |  |  | 20 |
|  | Co | $$$$ | 27 | 59 |  |  |
|  | Al |  |  |  |  |  |
| Iron |  |  |  |  |  | 30 |
| Nitrogen |  |  |  |  |  |  |
|  | H |  |  |  |  |  |
|  |  |  | 50 |  |  | 70 |
| Bromine |  |  |  | 80 |  |  |
| Oxygen |  |  |  |  |  | 8 |

For the following, use the information given about the following nuclei to complete the table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Isotope | Isotope Symbol | Nuclear Symbol | Charge Number | Mass Number/ Nucleon Number | Protons | Neutrons |
| Sodium-22 | Na-22 |  |  |  | 11 | 11 |
| Hydrogen-2 |  |  | 1 |  |  |  |
|  |  |  | 9 | 20 |  |  |
|  |  |  |  |  | 5 | 6 |
|  | Ca-42 |  |  |  |  |  |
|  |  |  |  | 37 |  | 20 |
| Helium-3 |  | $$$$ |  |  |  |  |
|  | S-32 | $$$$ |  |  |  |  |
|  |  |  | 22 |  |  | 25 |
|  |  |  |  | 15 | 7 |  |
| Carbon-14 |  | $$$$ |  |  |  |  |
|  |  |  |  |  | 3 | 4 |
| Alpha | He-4 | $$$$ |  |  |  |  |
| Beta | — | $$$$ | -1 |  |  | 0 |
| Gamma | — | $$$$ | 0 |  | 0 |  |
| electron |  |  |  |  |  |  |
| proton |  |  |  |  |  |  |