Reminders:

1. In a neutral atom the number of protons equals the number of electrons.
2. An atom can NEVER gain or lose protons
3. The number of protons equals the atomic number
$\qquad$

## Ion Practice Set

1. What is an ion?
2. What does the number next to the ions signify?

Complete the following table, using the periodic table in the back of your book.

|  | ELEMENT NAME | ION SYMBOL | NUMBER OF PROTONS | NUMBER OF ELECTRONS | NUMBER OF ELECTRONS LOST OR GAINED |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ex | Fluorine | F- | 9 | 10 | gained one |
| 1 |  |  | 53 | 54 |  |
| 2 |  |  | 16 |  | gained two |
| 3 | potassium |  |  |  | lost one |
| 4 |  | $\mathrm{Ca}^{+2}$ |  |  |  |
| 5 |  |  | 35 | 36 |  |
| 6 |  | $\mathrm{Sr}^{+2}$ |  |  |  |
| 7 |  | $\mathrm{H}^{+}$ |  |  |  |
| 8 |  |  | 8 |  | gained two |
| 9 |  |  | 12 |  | lost two |
| 10 | aluminum |  |  | 10 |  |
| 11 |  |  | 34 | 36 |  |
| 12 |  | $\mathrm{H}^{-}$ |  |  |  |
| 13 | lithium |  |  |  | lost one |
| 14 |  | $R b^{+}$ |  |  |  |
| 15 |  |  | 17 | 18 |  |

$\qquad$

## Isotopes Practice Set

1. What is an isotope?
2. What does the number next to isotopes signify?
3. How can you tell isotopes apart?

For each of the following isotopes, write the number of protons, neutrons, and electrons.

|  | Chromium-58 | Chromium-63 |
| :--- | :--- | :--- |
| \# of protons |  |  |
| \# of neutrons |  |  |
| \# of electrons |  |  |


|  | Carbon-12 | Carbon-16 |
| :--- | :--- | :--- |
| \# of protons |  |  |
| \# of neutrons |  |  |
| \# of electrons |  |  |


|  | Nitrogen-15 | Nitrogen-20 |
| :--- | :--- | :--- |
| \# of protons |  |  |
| \# of neutrons |  |  |
| \# of electrons |  |  |


|  | Sulfur-23 | Sulfur-25 |
| :--- | :--- | :--- |
| \# of protons |  |  |
| \# of neutrons |  |  |
| \# of electrons |  |  |

Fill in the isotope names and any missing information, including isotope numbers from the chart. Use your periodic table and the information provided.

|  | lodine- | lodine- |
| :--- | :---: | :--- |
| \# of protons |  |  |
| \# of neutrons | 32 | 35 |
| \# of electrons |  |  |


|  | Iron- | Iron- |
| :--- | :--- | :--- |
| \# of protons |  |  |
| \# of neutrons | 27 | 30 |
| \# of electrons |  |  |


|  |  |  |
| :--- | :---: | :---: |
| \# of protons |  |  |
| \# of neutrons | 113 | 111 |
| \# of electrons | 55 |  |


|  |  |  |
| :--- | :---: | :---: |
| \# of protons | 32 |  |
| \# of neutrons | 30 | 32 |
| \# of electrons |  |  |

