Name _____ Date _____ Period _____

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Ions

Chemistry

Use a periodic table. Show your work. Use the word bank and sentence frames where they are given.

1. What changes when a neutral atom becomes an ion? What stays the same?

Sentence frame: *When an atom becomes an ion, the number of _____ changes, but the number of _____ stays the same.*

2. A magnesium atom loses two electrons. Write the symbol for the ion. Is it a cation or an anion?

Word bank: cation, anion

3. An ion has 17 protons and 18 electrons. Identify the element, find the charge, and write the symbol for the ion.

The first step is done for you: charge = protons − electrons = 17 − 18 = ____

4. How many protons and electrons are in Ca^{2+}? Explain why this ion is positive.

5. A neutral sulfur atom gains two electrons. Name the ion and write its symbol.

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6. An aluminum ion has mass number 27 and a charge of 3+. Find its protons, neutrons, and electrons.

7. An ion has 8 protons and 10 electrons. Find its charge, then write its symbol and name.

8. Compare how Na^{+} and Cl^{-} form. Use the words *gain* and *lose*.

9. An ion has 15 protons, 16 neutrons, and 18 electrons. Write its symbol and find its mass number.

10. A student wrote Mg+2 for a magnesium ion. Write it correctly and explain where the charge goes.

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