

# Concept Review

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## Section: Exploring the Periodic Table

1. **State** two characteristics shared by elements of the same group in the periodic table.

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2. **Understanding Systems** Why do atoms of Group 1 elements lose electrons to form cations, whereas atoms of Group 17 elements gain electrons to form anions?

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3. **Predict** which of the following ions would be likely to form:

\_\_\_\_\_ a.  $\text{Na}^{2+}$

\_\_\_\_\_ b.  $\text{Cl}^+$

\_\_\_\_\_ c.  $\text{Ca}^{2+}$

\_\_\_\_\_ d.  $\text{Br}^-$

\_\_\_\_\_ e.  $\text{Ne}^-$

\_\_\_\_\_ f.  $\text{Ne}^+$

4. **Determine** whether elements in the following groups are most likely to be metals, nonmetals, or semiconductors.

\_\_\_\_\_ a. Group 1

\_\_\_\_\_ b. Group 17

\_\_\_\_\_ c. Group 5

\_\_\_\_\_ d. Group 16

\_\_\_\_\_ e. Group 18

5. **Compare** semiconductors with both metals and nonmetals in terms of their ability to conduct electricity, and state where semiconductors are located on the periodic table.

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