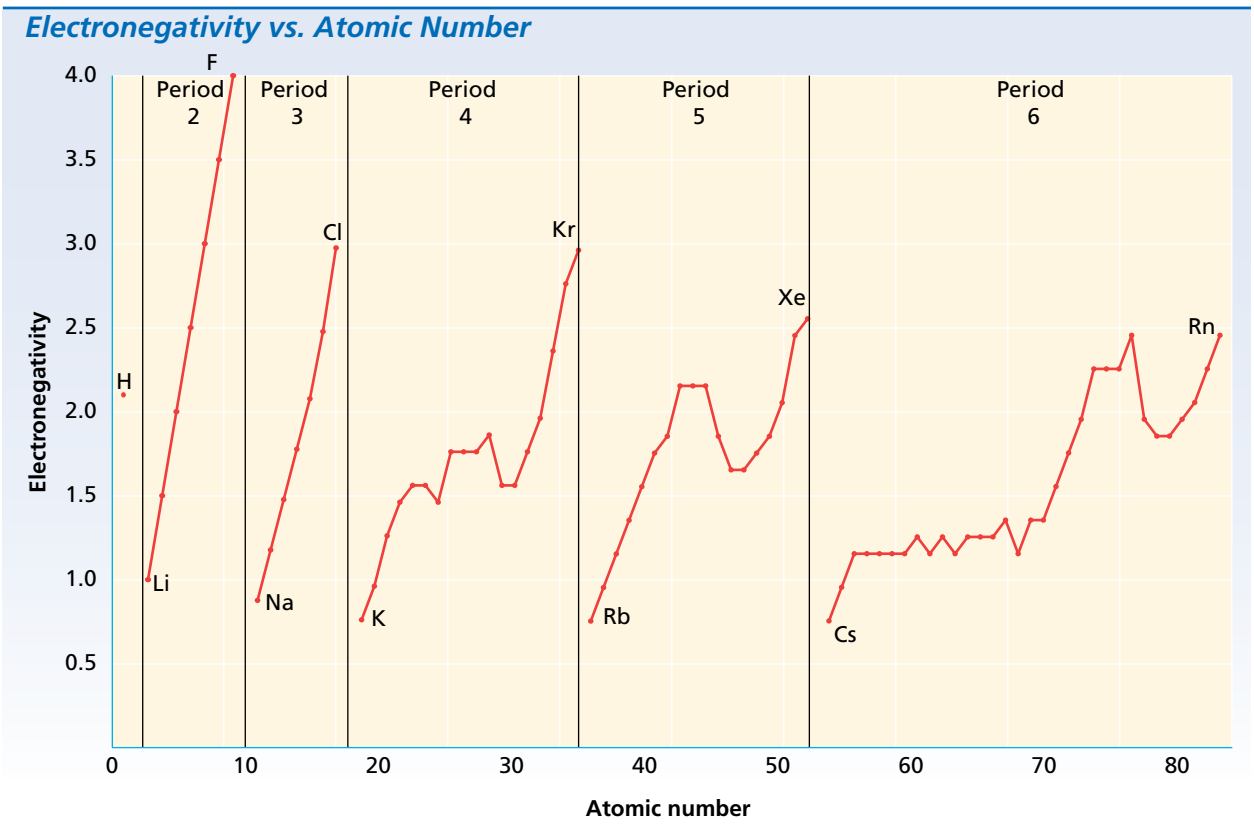

FIGURE 21 The plot shows electronegativity versus atomic number for Periods 1–6.

do not form compounds and therefore cannot be assigned electronegativities. When a noble gas does form a compound, its electronegativity is rather high, similar to the values for the halogens. The combination of the period and group trends in electronegativity results in the highest values belonging to the elements in the upper right of the periodic table. The lowest values belong to the elements in the lower left of the table. These trends are shown graphically in **Figure 21.**

SAMPLE PROBLEM G

Of the elements gallium, Ga, bromine, Br, and calcium, Ca, which has the highest electronegativity? Explain your answer in terms of periodic trends.

SOLUTION All of these elements are in the fourth period. Bromine has the highest atomic number and is farthest to the right in the period. Therefore, bromine should have the highest electronegativity because electronegativity increases across the periods.

PRACTICE *Answers in Appendix E*

1. Consider five hypothetical main-group elements, E, G, J, L, and M, that have the outer electron configurations shown at the top of the next page.