52 Draw three resonance structures for the chlorate ion, ClO$_3^-$.

57 Why does the octet rule not hold for many compounds containing elements in the third period of the periodic table and beyond?

61 The AlI$_3$ molecule has an incomplete octet around Al. Draw three resonance structures of the molecule in which the octet rule is satisfied for both the Al and the I atoms. Show formal charges.

62 In the vapor phase, beryllium chloride consists of discrete BeCl$_2$ molecules. Is the octet rule satisfied for Be in this compound? If not, can you form an octet around Be by drawing another resonance structure? How plausible is this structure?
Of the noble gases, only Kr, Xe and Rn are known to form a few compounds with O and/or F. Write Lewis structures for the following molecules: (a) XeF₂, (b) XeF₄, (c) XeF₆, (d) XeOF₄, (e) XeO₂F₄. In each case Xe is the central atom.

Write a Lewis structure for SbCl₅. Does this molecule obey the octet rule?

Write Lewis structures for SeF₄ and SeF₆. Is the Octet rule satisfied for Se?