1. A. SrF\(_2\) is an ionic compound with the metal having a fixed charge.
2. B. SCl\(_4\) is a molecular compound, so a prefix is required for the number of Cl atoms.
3. D. Cobalt(III) implies that cobalt has a plus three charge. Sulfide is the S\(^{-2}\) ion. Thus, for a +3 and -2 charge combination requires that we have 2 Co\(^{3+}\) and 3 S\(^{-2}\) to get the charges to balance.
4. C. This is an ionic compound with the metal having a fixed charge. The PO\(_4\)\(^{3-}\) group is the polyatomic ion known as the phosphate ion.
5. B. The compound has 1 Al + 3 Cl + 9 O atoms in the formula. 
6. C. You need the molar mass of Na\(_2\)CO\(_3\) first. 
7. B. The molar mass is: 2(14.0g) + 4(1.0g) + 3(16.0g) = 80.0g. 
8. A. The molar mass of Na\(_2\)CO\(_3\) first. 
9. E. Co: 55.1g 1 mol = 0.939 mol and S: 44.9g 1 mol = 1.399 mol; Divide each by 0.939 yields a ratio of about 1 : 1.49. Since this is very close to 1.5, multiply both by two to get Co\(_2\)S\(_3\).
10. D. The correct coefficients are: 4, 1, 2 = 7. (Don’t forget the implied “1” in your total!) 
11. C. The correct coefficients are: 1, 7, 5, 4.
12. C.
13. B. The ratio is 1P\(_4\) to 3 O\(_2\), so 0.0360 mol P\(_4\) 3 mol O\(_2\) = 0.108 mol O\(_2\)
14. E. 0.459g Mg 1 mol Mg = 1 mol Mg\(_2\)N\(_2\) 100.9g Mg\(_2\)N\(_2\) = 0.635g
15. Oops! None of these is correct!
16. Since only 60 molecules of PF\(_3\) could be made from the starting amount of F\(_2\), this is our limiting reactant and thus the correct answer.