Honors Chemistry/Challenge

Balance the following reactions by adding coefficients where necessary.

Reminders: begin by balancing elements that occur only once on each side

 balance one element at a time

treat intact polyatomic ions as you do single elements

odd/even rule (i.e. multiply by 2 🡪 even number)

H + OH = H2O

combustion – see notes

1. \_\_\_\_\_\_\_Ca3(PO4)2 + \_\_\_\_\_\_H2SO4 🡪 \_\_\_\_\_\_CaSO4 + \_\_\_\_\_\_H3PO4

2. \_\_\_\_\_\_\_Na3PO4 + \_\_\_\_\_\_\_\_CaCl2 🡪 \_\_\_\_\_\_\_\_\_Ca3(PO4)2 + \_\_\_\_\_\_\_\_\_NaCl

3. \_\_\_\_\_\_\_Al2(SO4)3 + \_\_\_\_\_\_\_\_\_Ba(NO3)2 🡪 \_\_\_\_\_\_\_\_\_BaSO4 + \_\_\_\_\_\_\_\_\_Al(NO3)3

4. \_\_\_\_\_\_\_Na2SO3 + \_\_\_\_\_\_\_\_\_O2 🡪 \_\_\_\_\_\_\_\_\_\_Na2SO4

5. \_\_\_\_\_\_\_\_Al2O3 + \_\_\_\_\_\_ HNO3 🡪 \_\_\_\_\_\_ Al(NO3)3 + \_\_\_\_\_\_\_H2O

6. \_\_\_\_\_\_\_Cl2O7 + \_\_\_\_\_\_H2O 🡪 \_\_\_\_\_\_ HClO4

7. \_\_\_\_\_\_\_\_Al2S3 + \_\_\_\_\_\_ H2O 🡪 \_\_\_\_\_\_ Al(OH)3 + \_\_\_\_\_\_ H2S

8. \_\_\_\_\_\_\_\_Fe + \_\_\_\_\_\_ H2O 🡪 \_\_\_\_\_\_ Fe3O4 + \_\_\_\_\_\_ H2

9. \_\_\_\_\_\_\_\_Hg + \_\_\_\_\_\_ NH4I 🡪 \_\_\_\_\_\_ HgI2 + \_\_\_\_\_\_ H2 + \_\_\_\_\_\_ NH3

10. \_\_\_\_\_\_\_C + \_\_\_\_\_\_ SO2 🡪 \_\_\_\_\_\_\_\_\_\_\_CS2 + \_\_\_\_\_\_\_\_\_\_\_CO

11. \_\_\_\_\_\_\_NH3 + \_\_\_\_\_\_\_\_O2 🡪 \_\_\_\_\_\_\_\_NO + \_\_\_\_\_\_\_\_ H2O

12. \_\_\_\_\_\_\_FeS2 + \_\_\_\_\_\_O2 🡪 \_\_\_\_\_\_Fe2O3 + \_\_\_\_\_\_SO2

13. \_\_\_\_\_\_P2O5 + \_\_\_\_\_ H2O 🡪 \_\_\_\_\_ H3PO4

14. \_\_\_\_\_\_C2H2 + \_\_\_\_\_\_ O2 🡪 \_\_\_\_\_\_ CO2 + \_\_\_\_\_ H2O (combustion)

15. \_\_\_\_\_\_ C3H7OH + \_\_\_\_\_ O2 🡪 \_\_\_\_\_ CO2 + \_\_\_\_\_ H2O (combustion)