NAME: _____ **BLOCK:**_____
DATE: _____

P CHEMISTRY: BALANCING CHEMICAL EQUATIONS WORKSHEET #7.1.7P

RULES FOR WRITING AND BALANCING CHEMICAL EQUATIONS:

A) If you are given a word equation, ***translate the word equation into an unbalanced formula equation. Only formula equations can be balanced and NOT word equations!***

B) Write the formulas for ***all reactants to the left*** of an arrow and ***all products to the right.*** Be sure that the formulas correct represent the compound or molecule of the free element ***(Remember the diatomic free elements: H_2 , N_2 , O_2 and the halogen group ~ F_2 , Cl_2 , Br_2 , I_2)***

C) Once the formulas are correctly written, ***DO NOT CHANGE THEM. USE COEFFICIENTS IN FRONT OF THE FORMULAS TO BALANCE THE EQUATION. BE SURE TO REDUCE ALL COEFFICIENTS WHEN POSSIBLE!***

D) Begin balancing with an element that ***occurs only once*** on each side of the arrow.

E) To determine the number of atoms of a given element in a formula of the equation, ***MULTIPLY THE COEFFICIENT TIMES A SUBSCRIPT OF THE ELEMENT.***

1. Iron + nitrogen –> iron(II) nitride
   _____ + _____ –> _____

2. Ammonia + oxygen –> water + nitrogen monoxide
   ____NH_3 + _____ –> _____ + _____

3. Aluminum + hydrogen nitrate –> water + nitrogen dioxide + aluminum oxide
   2Al + 6HNO_3 –> _____+ _____ + _____

4. Propane (C_3H_8) + oxygen –> carbon dioxide + water
   ____C_3H_8 + _____ –> _____ + _____

5. Phosphine (PH_3) + oxygen –> water + tetraphosphorus decoxide
   ____PH_3 + _____ –> _____ + _____

6. Iron (II) sulfide + oxygen –> iron (III) oxide + sulfur dioxide
   _____ + _____ –> _____ + _____

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