CLASSIFICATION OF CHEMICAL REACTIONS

Name _____

Classify the reactions below as synthesis, decomposition, single replacement (cationic o anionic) or double replacement.

1. $2H_2 + O_2 \rightarrow 2H_2O$ _____
2. $2H_2O \rightarrow 2H_2 + O_2$ _____
3. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ _____
4. $2CO + O_2 \rightarrow 2CO_2$ _____
5. $2HgO \rightarrow 2Hg + O_2$ _____
6. $2KBr + Cl_2 \rightarrow 2KCl + Br_2$ _____
7. $CaO + H_2O \rightarrow Ca(OH)_2$ _____
8. $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$ _____
9. $2H_2O_2 \rightarrow 2H_2O + O_2$ _____
10. $Ca(OH)_2 + H_2SO_4 \rightarrow CaSO_4 + 2H_2O$ _____

BALANCING CHEMICAL EQUATIONS

Name _____

Rewrite and balance the equations below.

1. $N_2 + H_2 \rightarrow NH_3$ _____
2. $KClO_3 \rightarrow KCl + O_2$ _____
3. $NaCl + F_2 \rightarrow NaF + Cl_2$ _____
4. $H_2 + O_2 \rightarrow H_2O$ _____
5. $AgNO_3 + MgCl_2 \rightarrow AgCl + Mg(NO_3)_2$ _____
6. $AlBr_3 + K_2SO_4 \rightarrow KBr + Al_2(SO_4)_3$ _____
7. $CH_4 + O_2 \rightarrow CO_2 + H_2O$ _____
8. $C_3H_8 + O_2 \rightarrow CO_2 + H_2O$ _____
9. $C_8H_{18} + O_2 \rightarrow CO_2 + H_2O$ _____
10. $FeCl_3 + NaOH \rightarrow Fe(OH)_3 + NaCl$ _____
11. $P + O_2 \rightarrow P_2O_5$ _____
12. $Na + H_2O \rightarrow NaOH + H_2$ _____
13. $Ag_2O \rightarrow Ag + O_2$ _____
14. $S_8 + O_2 \rightarrow SO_3$ _____
15. $CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$ _____
16. $K + MgBr_2 \rightarrow KBr + Mg$ _____
17. $HCl + CaCO_3 \rightarrow CaCl_2 + H_2O + CO_2$ _____

Mixed Review: First, **identify the type of rxn,** then **predict the products** and **balance** the equation.

_____ 1. _____$C_6H_6(l)$ + _____O_2 →

_____ 2. _____$Cl_2(g)$ + _____$AlBr_3(aq)$ →

_____ 3. _____$Ca(s)$ + _____$HCl(aq)$ →

_____ 4. _____$NH_4Cl(aq)$ + _____$Pb(NO_3)_2(aq)$ →

_____ 5. _____ $AgNO_3(aq)$ + _____ $Mg(s)$ →

_____ 6. _____$C_7H_{14}(l)$ + _____$O_2(g)$ →

_____ 7. _____$Mg_3(PO_4)_2(aq)$ + _____$BaCl_2(aq)$ →

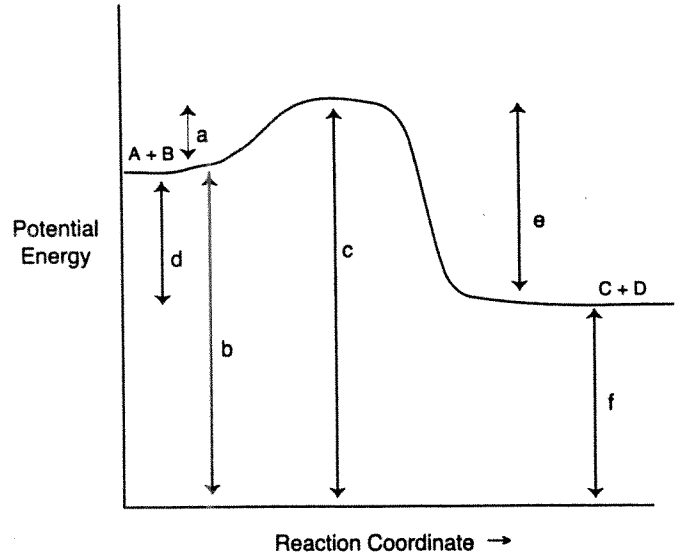
_____ 8. _____$Zn(s)$ + _____$Pb(NO_3)_2(aq)$ →

_____ 9. _____$CaCl_2(aq)$ + _____$Na_2CO_3(aq)$ →

_____ 10. _____ $FeO\ (aq)$ + _____ $Cu\ (s)$ →

POTENTIAL ENERGY DIAGRAM

Name _____



A + B ↔ C + D + energy

Answer the questions using the graph above.

1. Is the above reaction endothermic or exothermic? _____
2. What letter represents the potential energy of the reactants? _____
3. What letter represents the potential energy of the products? _____
4. What letter represents the heat of reaction (ΔH)? _____
5. What letter represents the activation energy of the forward reaction? _____
6. What letter represents the activation energy of the reverse reaction? _____
7. What letter represents the potential energy of the activated complex? _____
8. Is the reverse reaction endothermic or exothermic? _____
9. If a catalyst were added, what letter(s) would change? _____