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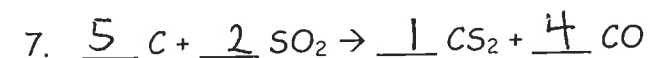
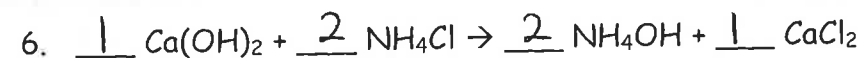
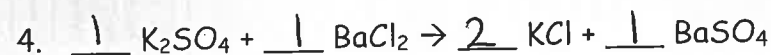
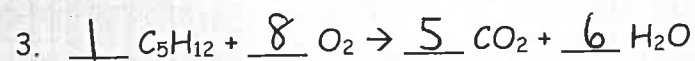
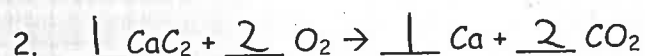
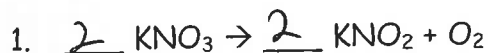
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Chemistry 11

Balancing Worksheet #1

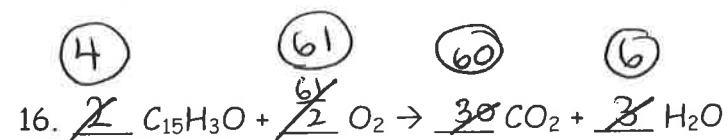
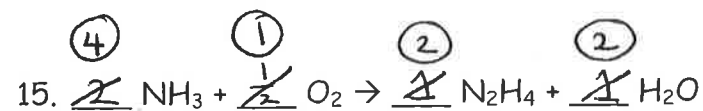
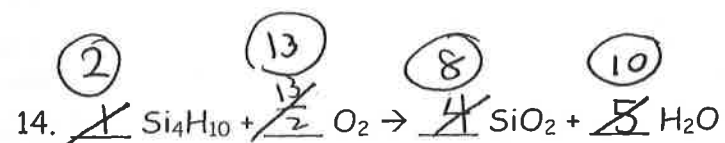
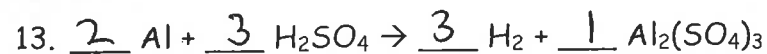
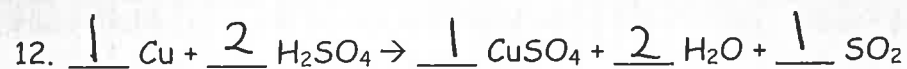
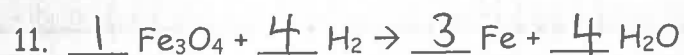
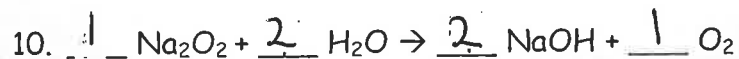
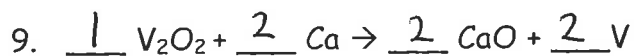
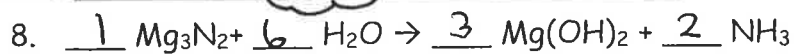
Directions: Balance the following equations in the space provided. SHOW ALL YOUR WORK!!!!



Name: _____

KEY

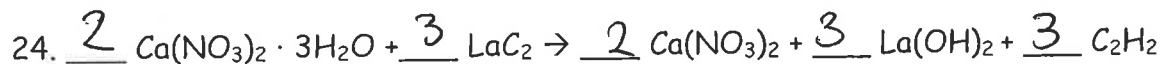
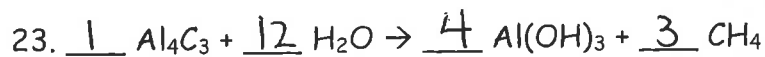
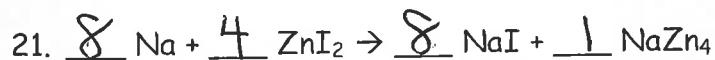
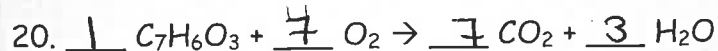
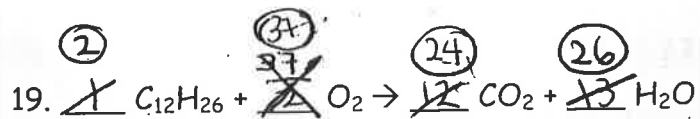
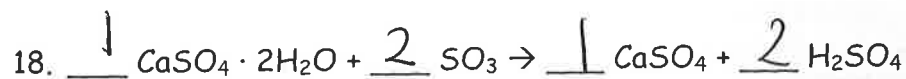
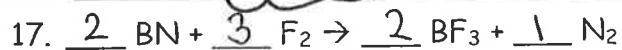
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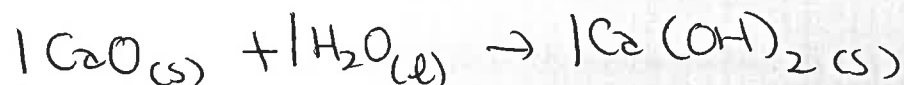
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Chemistry 11

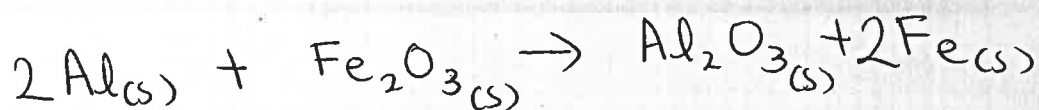
Translation and Balancing with Phases

Directions: Answer in the space provided. Make sure you have the right chemical formula. You MUST include the phase AND balance. Enjoy ☺

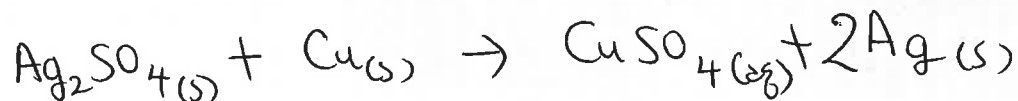
1. Solid calcium oxide reacts with liquid water to produce solid calcium hydroxide



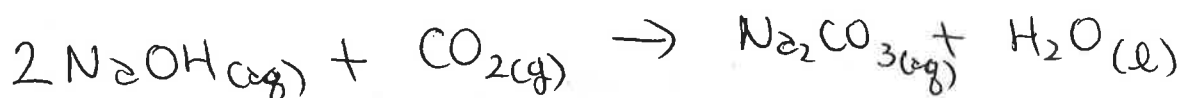
2. Powdered aluminum reacts with solid iron (III) oxide to yield solid aluminum oxide and solid iron



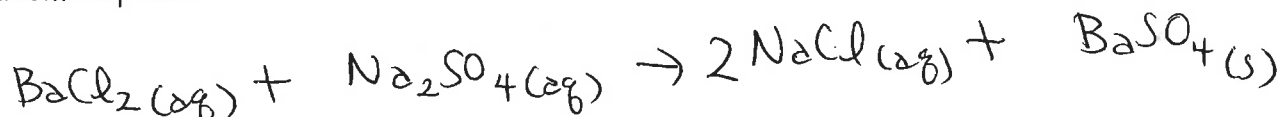
3. Solid silver sulphate plus powdered copper produces aqueous copper (II) sulphate and solid silver



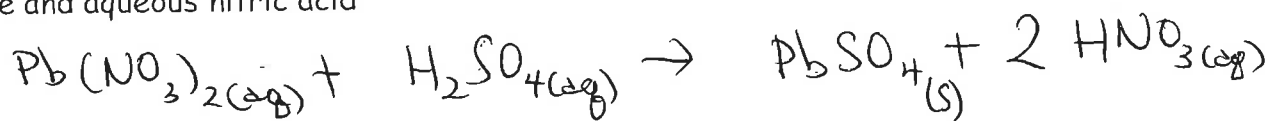
4. Aqueous sodium hydroxide reacts with gaseous carbon dioxide to produce aqueous sodium carbonate and liquid water



5. Aqueous barium chloride plus aqueous sodium sulphate produces aqueous sodium chloride and solid barium sulphate



6. Aqueous lead (II) nitrate plus aqueous sulphuric acid reacts to produce solid lead (II) sulphate and aqueous nitric acid



Name: _____

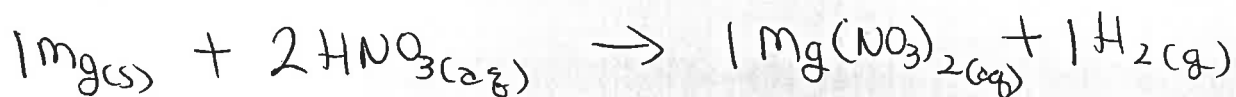
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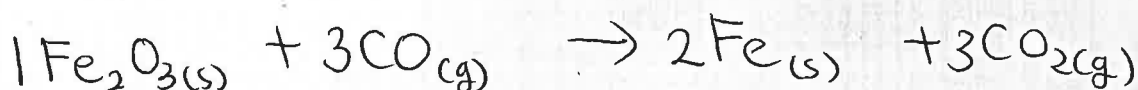
7. Aqueous zinc chloride reacts with aqueous ammonium sulphide to produce solid zinc sulphide and aqueous ammonium chloride



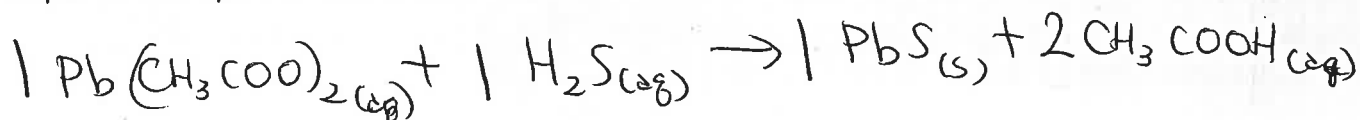
8. Solid magnesium plus aqueous nitric acid produces aqueous magnesium nitrate and hydrogen gas



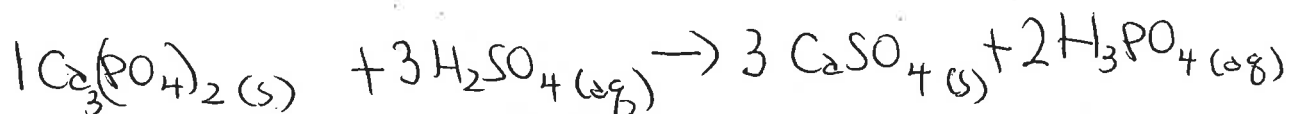
9. Solid iron (III) oxide plus carbon monoxide gas react to produce powdered iron and carbon dioxide gas.



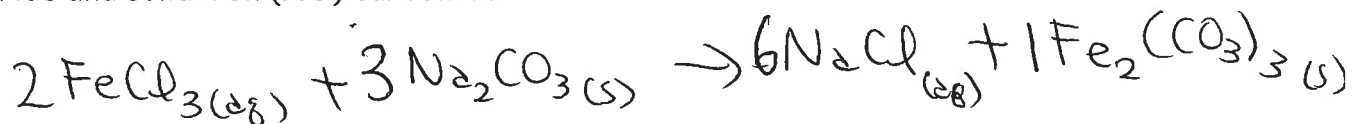
10. Aqueous lead (II) acetate reacts with aqueous hydrogen sulphide to produce solid lead (II) sulphide and aqueous acetic acid



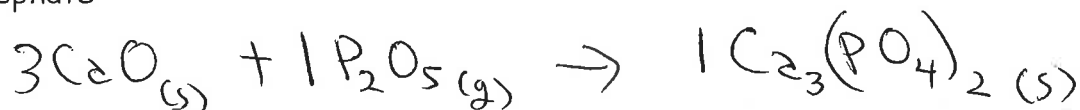
11. Solid calcium phosphate plus aqueous sulphuric acid produces solid calcium sulphate and aqueous phosphoric acid



12. Aqueous iron (III) chloride reacts with solid sodium carbonate to yield aqueous sodium chloride and solid iron (III) carbonate



13. Solid calcium oxide plus gaseous diphosphorus pentoxide reacts to produce solid calcium phosphate

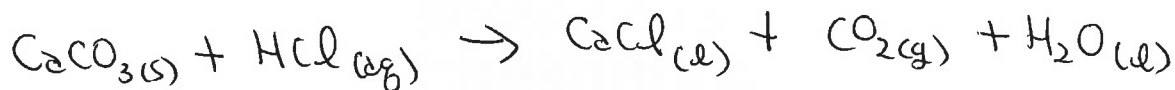


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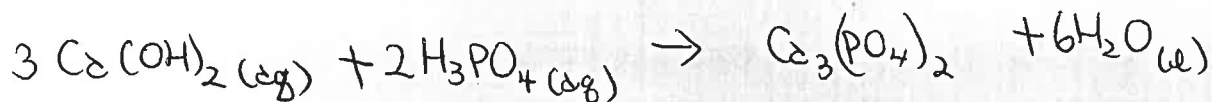
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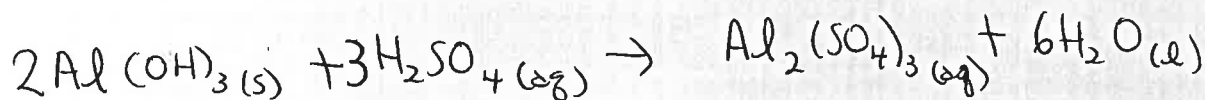
14. Solid calcium carbonate plus aqueous hydrochloric acid produce aqueous calcium chloride, liquid water and gaseous carbon dioxide



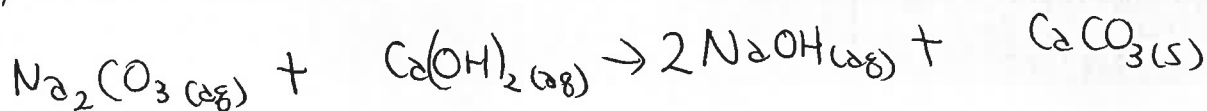
15. Aqueous calcium hydroxide reacts with aqueous phosphoric acid to produce powdered calcium phosphate and liquid water



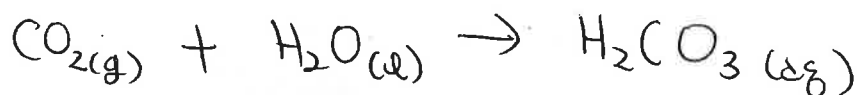
16. Crystals of aluminum hydroxide react with aqueous sulphuric acid to produce aqueous aluminum sulphate and liquid water



17. Aqueous sodium carbonate reacts with aqueous calcium hydroxide to yield aqueous sodium hydroxide and solid calcium carbonate



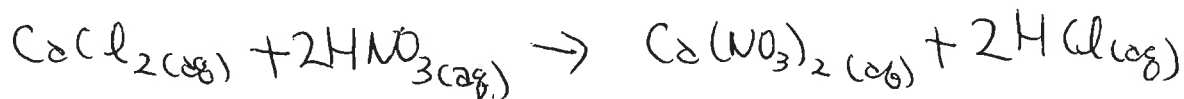
18. Gaseous carbon dioxide reacts with liquid water to produce aqueous carbonic acid



19. Solid iron plus aqueous copper (I) nitrate produces aqueous iron (II) nitrate and solid copper



20. Aqueous calcium chloride reacts with aqueous nitric acid to yield aqueous calcium nitrate and aqueous hydrochloric acid



Name: _____

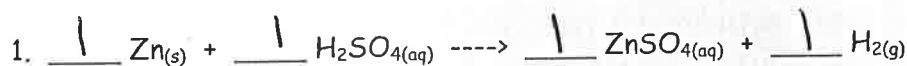
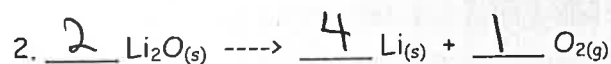
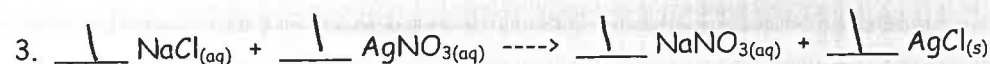
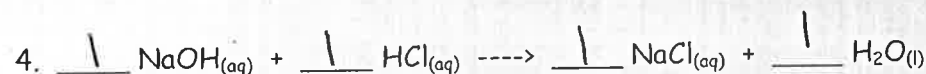
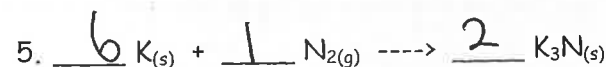
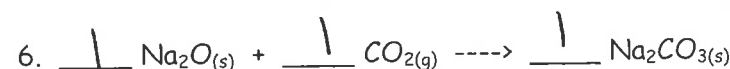
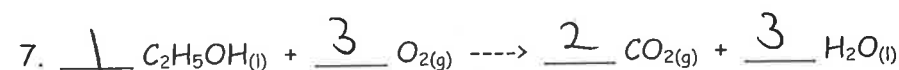
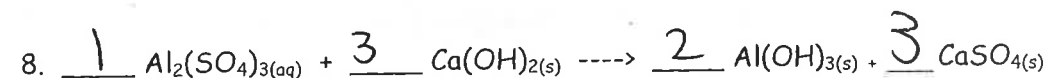
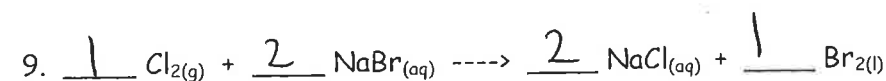
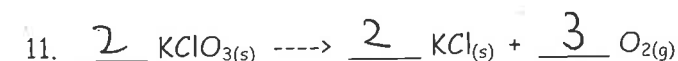
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Chemistry 11

Reaction Types, Predictions and Awesomeness

Exercise A: Balance the following chemical equations. Identify each reaction as a synthesis, decomposition, single replacement, double replacement, neutralization or combustion.

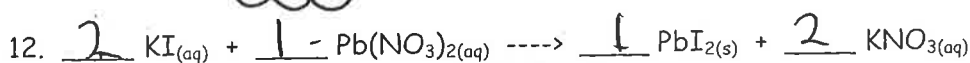
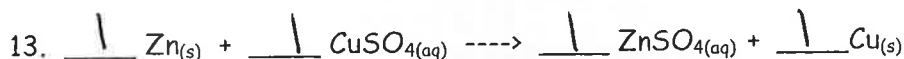
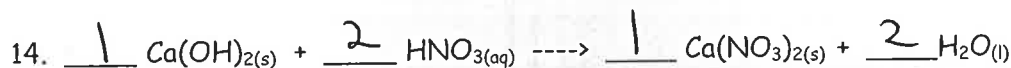
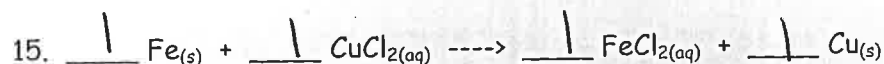
Classification:single replacementdecompositiondouble replacementneutralizationsynthesissynthesiscombustiondouble replacementsingle replacementsynthesisdecomposition

Simmer Down Inc. (Taken from someone fabulous in the Chilliwack School District)

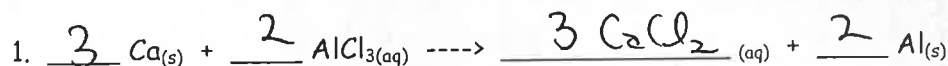
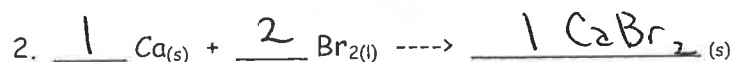
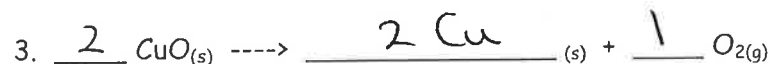
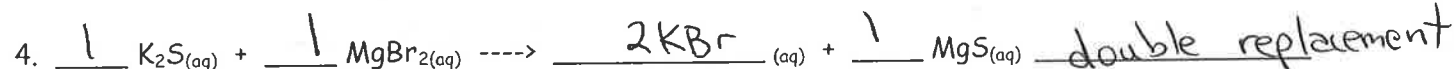
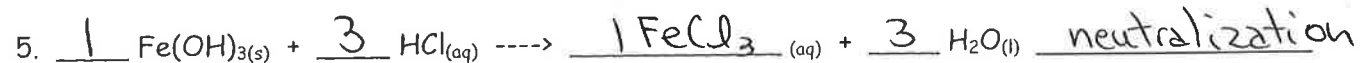
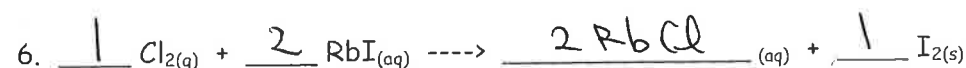
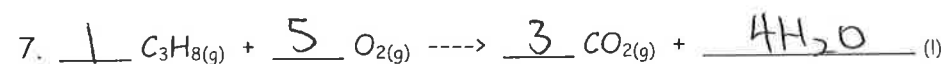
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Period: _____

double replacementsingle replacementneutralizationsingle replacement

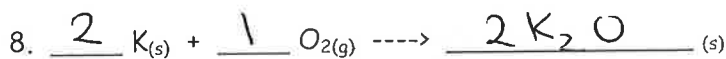
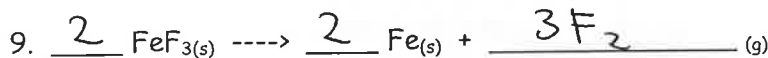
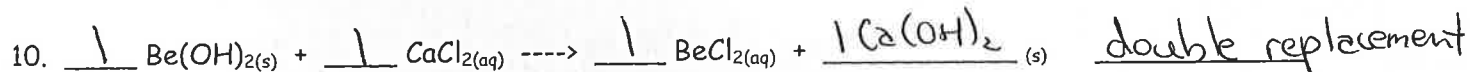
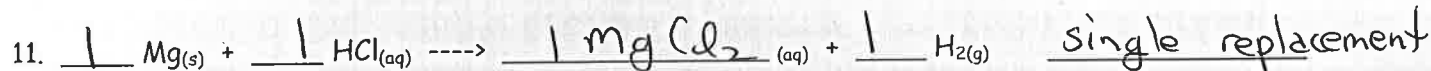
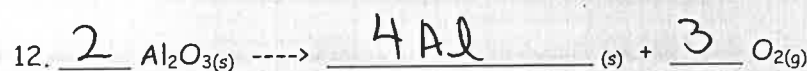
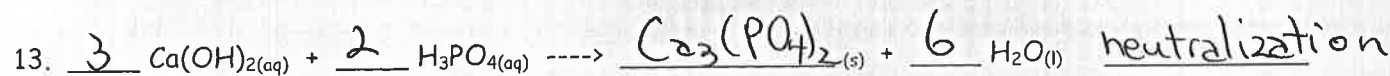
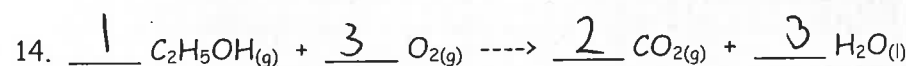
Exercise B: Predict the formula of the missing product in each of the following chemical reactions. Balance each chemical reaction equation. Then identify each reaction as a synthesis, decomposition, single replacement, double replacement, neutralization or combustion.

**Classification:**single replacementsynthesisdecompositiondouble replacementneutralizationsingle replacementcombustion

Name: _____

KEY

Period: _____

synthesisdecompositiondouble replacementsingle replacementdecompositionneutralizationcombustion

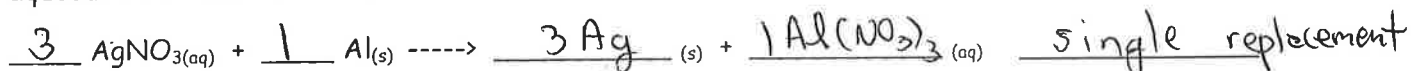
Exercise C: Predict the formula of the missing product(s) in each of the following chemical reactions. Be sure to include the phases. Balance the products in the chemical reaction equation. Then identify each reaction as synthesis, decomposition, single replacement, double replacement, neutralization or combustion.

Note: The Reaction description gives a hint about what some of the products might be

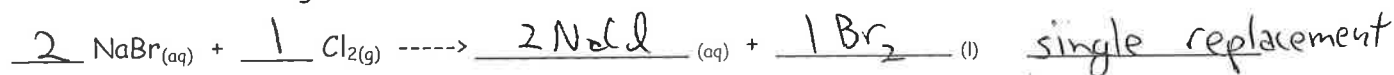
REACTION DESCRIPTION

REACTION TYPE

1. Silver metal is recovered in a laboratory by placing aluminum foil in aqueous silver nitrate.

single replacement

2. Bromine is mined from the ocean by bubbling chlorine gas through ocean water containing sodium bromide.

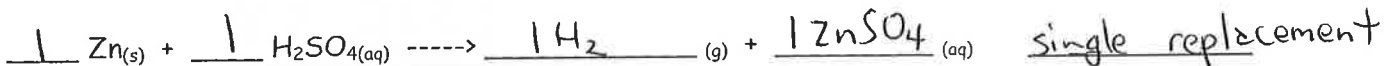
single replacement

Name: _____

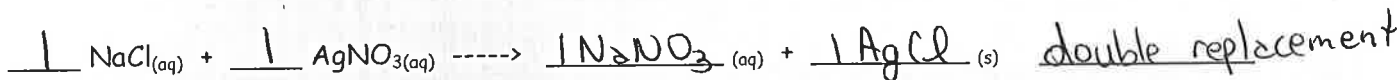
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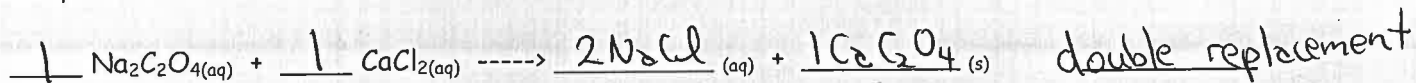
3. A traditional laboratory method of producing hydrogen gas is to react zinc metal with sulfuric acid.



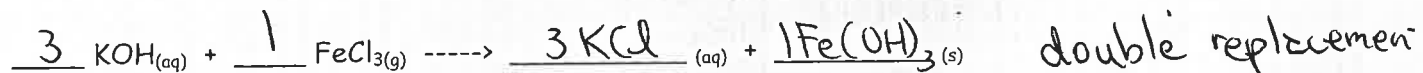
4. Chloride ions in a water sample can be tested with aqueous silver nitrate. Chloride ions are present if a white precipitate forms.



5. An analytical chemist uses sodium oxalate to precipitate a calcium compound in a sample from an acidic lake.



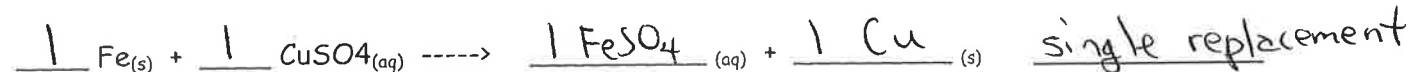
6. When aqueous potassium hydroxide is added to a well-water sample, the formation of a rusty-brown precipitate indicates the presence of an iron (III) compound in the water.



7. A chemist in a consumer-protection laboratory adds aqueous sodium hydroxide to determine the concentration of acetic acid in a vinegar sample.



8. A dishonest 16th century alchemist who tried to fool people into believing that iron could be changed into gold, dipped an iron bar into aqueous copper (II) sulfate.



9. $\underline{2} \text{ Sr}_{(s)} + \underline{1} \text{ O}_{2(g)} \text{ -----} \rightarrow \underline{2} \text{ SrO}_{(s)}$

decomposition

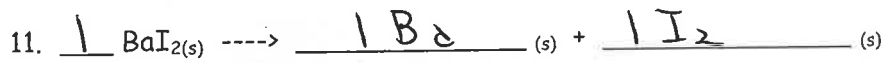
10. $\underline{1} \text{ Ca}_3\text{N}_{2(s)} \text{ -----} \rightarrow \underline{3} \text{ Ca}_{(s)} + \underline{1} \text{ N}_{2(g)}$

decomposition

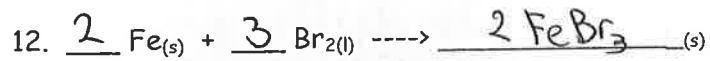
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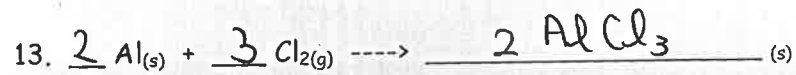
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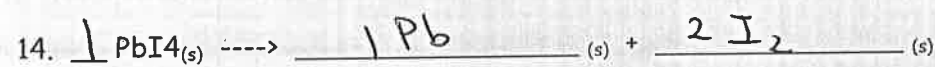
decomposition



synthesis



synthesis



decomposition

Name: _____

KEY

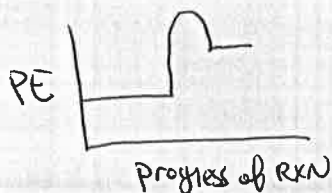
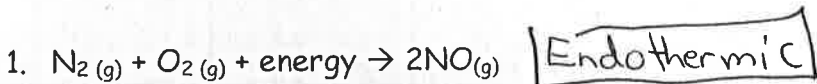
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Chemistry 11

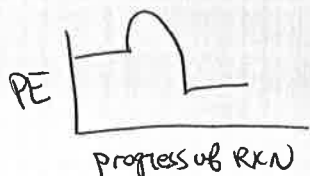
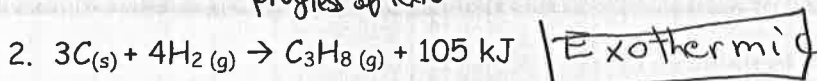
Energy Problems

Directions: For of the following questions, answer the following:

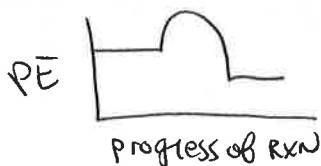
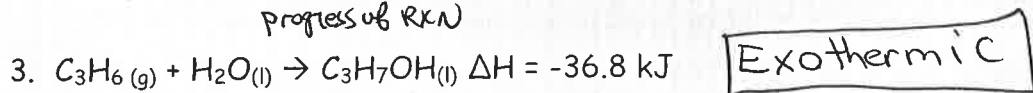
1. State the type of reaction (Endothermic or Exothermic)
2. Sketch the potential energy graph, showing ΔH
3. State whether the reactants or products have more energy



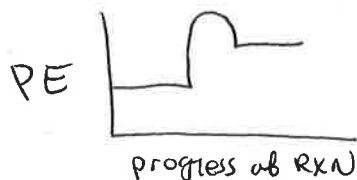
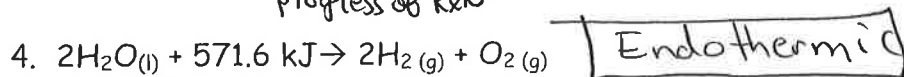
→ products have more energy



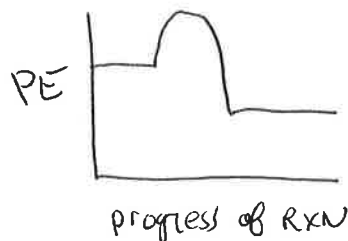
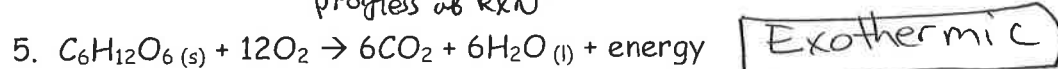
→ reactants have more energy



→ reactants have more energy



→ products have more energy



→ reactants have more energy

Name: _____

KEY

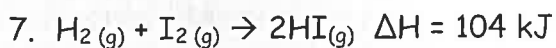
Period: _____



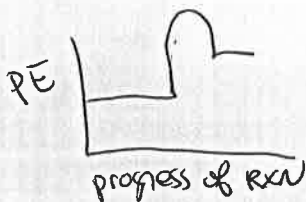
Exothermic



→ reactants have more energy



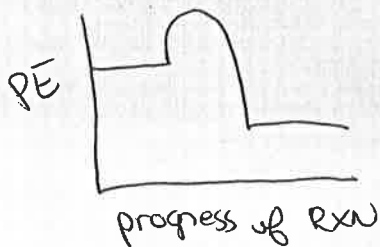
Endothermic



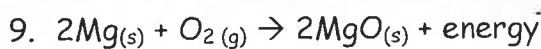
→ products have more energy



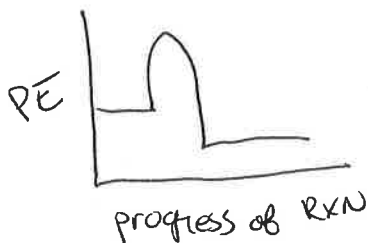
Exothermic



→ reactants have more energy



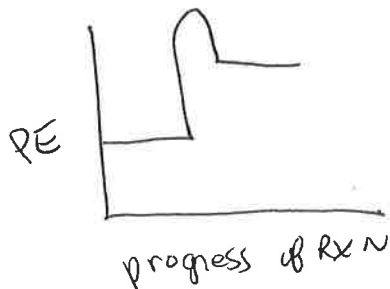
Exothermic



→ reactants have more energy



Endothermic



→ products have more energy