

Science 10

Reaction Types

Balance the following equations and classify each of the reactions as synthesis, decomposition, combustion, single replacement, double replacement, or neutralization.

- a. $\underline{2}$ C₂H₂ + $\underline{5}$ O₂ → $\underline{4}$ CO₂ + $\underline{2}$ H₂O COMBUSTION
- b. $\underline{\quad}$ Zn + $\underline{\quad}$ CuSO₄ → $\underline{\quad}$ ZnSO₄ + $\underline{\quad}$ Cu SINGLE REPLACEMENT
- c. $\underline{\quad}$ Cl₂ + $\underline{2}$ KI → $\underline{2}$ KCl + $\underline{\quad}$ I₂ SINGLE REPLACEMENT
- d. $\underline{2}$ H₂O₂ → $\underline{2}$ H₂O + $\underline{\quad}$ O₂ DECOMPOSITION
- e. $\underline{\quad}$ MgCl₂ → $\underline{\quad}$ Mg + $\underline{\quad}$ Cl₂ DECOMPOSITION
- f. $\underline{\quad}$ Fe + $\underline{\quad}$ I₂ → $\underline{\quad}$ FeI₂ SYNTHESIS
- g. $\underline{16}$ Cu + $\underline{\quad}$ S₈ → $\underline{8}$ Cu₂S SYNTHESIS
- h. $\underline{\quad}$ C₆H₁₂O₆ + $\underline{6}$ O₂ → $\underline{6}$ CO₂ + $\underline{6}$ H₂O COMBUSTION
- i. $\underline{\quad}$ FeCl₂ + $\underline{\quad}$ K₂S → $\underline{\quad}$ FeS + $\underline{2}$ KCl DOUBLE REPLACE
- j. $\underline{\quad}$ H₂SO₄ + $\underline{2}$ NaOH → $\underline{\quad}$ Na₂SO₄ + $\underline{2}$ H₂O NEUTRALIZATION
- k. $\underline{\quad}$ Pb(NO₃)₂ + $\underline{\quad}$ K₂CrO₄ → $\underline{\quad}$ PbCrO₄ + $\underline{2}$ KNO₃ DOUBLE REPLACE
- l. $\underline{4}$ Cr + $\underline{3}$ SnCl₄ → $\underline{4}$ CrCl₃ + $\underline{3}$ Sn SINGLE REPLACEMENT
- m. $\underline{\quad}$ C₂H₅OH + $\underline{3}$ O₂ → $\underline{2}$ CO₂ + $\underline{3}$ H₂O COMBUSTION

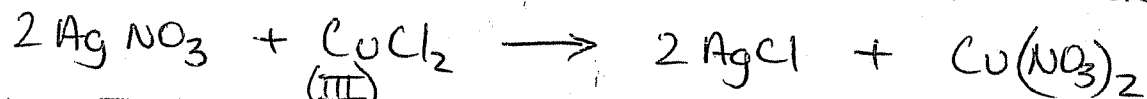
Complete the equation, balance it, and then classify it as synthesis, decomposition, combustion, single replacement, double replacement, or neutralization.

- a. $\underline{\quad}$ Zn + $\underline{\quad}$ MgSO₄ → $\underline{ZnSO_4}$ + \underline{Mg} SINGLE REPLACEMENT
- b. $\underline{2}$ Cd + $\underline{\quad}$ O₂ → $\underline{2}$ CdO SYNTHESIS
- c. $\underline{2}$ HgO → $\underline{2}$ Hg + $\underline{O_2}$ DECOMPOSITION

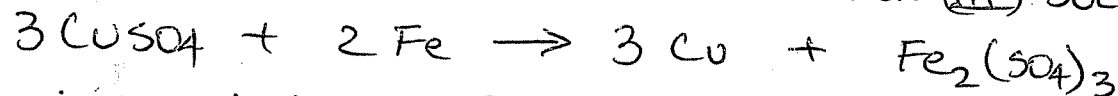
- d. $\underline{\quad}$ HCl + $\underline{\quad}$ KOH \rightarrow KCl + H₂O NEUTRALIZATION
- e. $\underline{\quad}$ C₅H₁₂ + $\underline{8}$ O₂ \rightarrow 5 CO₂ + 6 H₂O COMBUSTION
- f. $\underline{2}$ Sr + $\underline{\quad}$ O₂ \rightarrow 2 SrO SYNTHESIS
- g. $\underline{\quad}$ Br₂ + $\underline{\quad}$ CaCl₂ \rightarrow CaBr₂ + Cl₂ SINGLE REPLACEMENT
- h. $\underline{\quad}$ Zn + $\underline{\quad}$ Ni(NO₃)₂ \rightarrow Zn(NO₃)₂ + Ni SINGLE REPLACEMENT
- i. $\underline{\quad}$ ZnSO₄ + $\underline{\quad}$ SrCl₂ \rightarrow ZnCl₂ + SrSO₄ DOUBLE REPLACEMENT
- j. $\underline{2}$ AlCl₃ + $\underline{3}$ Na₂CO₃ \rightarrow Al₂(CO₃)₃ + 6 NaCl DOUBLE REPLACEMENT
- k. $\underline{16}$ ^(III)Fe + $\underline{3}$ S₈ \rightarrow 8 Fe₂S₃ SYNTHESIS
- l. $\underline{2}$ C₆H₆ + $\underline{15}$ O₂ \rightarrow 6 H₂O + 12 CO₂ COMBUSTION
- m. $\underline{\quad}$ ^(I)Pb + $\underline{\quad}$ KNO₃ \rightarrow PbNO₃ + K SINGLE REPLACE
- n. $\underline{2}$ HNO₃ + $\underline{\quad}$ Sr(OH)₂ \rightarrow 2 H₂O + Sr(NO₃)₂ NEUTRALIZATION

The really fun kind. Write the correct formulas, balance the reactions, and name the reaction type.

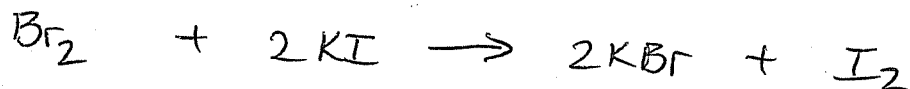
- a. silver nitrate + copper (II) chloride \rightarrow SILVER CHLORIDE + COPPER (II) NITRATE



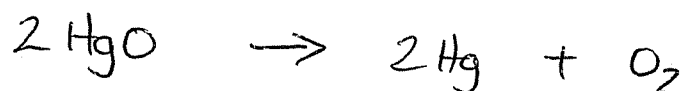
- b. copper (II) sulphate + ^(III)iron \rightarrow COPPER + IRON (III) SULPHATE



- c. bromine + potassium iodide \rightarrow POTASSIUM BROMIDE + IODINE GAS



- d. mercury (II) oxide \rightarrow MERCURY + OXYGEN



More Reaction Types

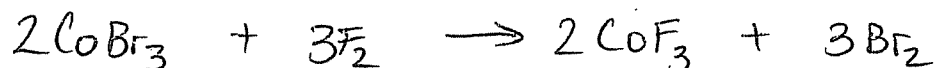
Name: KEY

Predict the products and balance the following reactions of all types. Include the subscript states and classify the reactions.

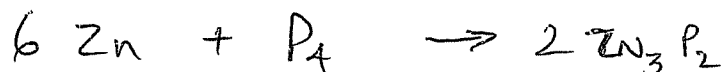
- a. $2 \text{NaCl}_{(l)} \rightarrow 2 \text{Na} + \text{Cl}_2$ DECOMPOSITION
- b. $2 \text{Sr}_{(s)} + \text{O}_{2(g)} \rightarrow 2 \text{SrO}$ SYNTHESIS
- c. $2 \text{C}_6\text{H}_{14(l)} + 19 \text{O}_{2(g)} \rightarrow 12 \text{CO}_2 + 14 \text{H}_2\text{O}$ COMBUSTION
- d. $\text{Zn}(\text{NO}_3)_{2(aq)} + 2 \text{Pb}_{(s)}^{(I)} \rightarrow 2 \text{Pb}(\text{NO}_3) + \text{Zn}$ SINGLE REPLACEMENT
- e. $\text{PtSO}_{4(aq)} + \text{Fe}_{(s)}^{(II)} \rightarrow \text{FeSO}_4 + \text{Pt}$ SINGLE REPLACEMENT
- f. $2 \text{NaNO}_{3(aq)} + \text{CuSO}_{4(aq)} \rightarrow \text{Na}_2\text{SO}_4 + \text{Cu}(\text{NO}_3)_2$ DOUBLE REPLACEMENT
- g. $2 (\text{NH}_4)_3\text{PO}_{4(aq)} + 3 \text{FeCl}_{2(aq)} \rightarrow 6 \text{NH}_4\text{Cl} + \text{Fe}_3(\text{PO}_4)_2$ DOUBLE REPLACEMENT
- h. $2 \text{C}_6\text{H}_{14(l)} + 19 \text{O}_{2(g)} \rightarrow 12 \text{CO}_2 + 14 \text{H}_2\text{O}$ COMBUSTION
- i. $\text{H}_2\text{SO}_{4(aq)} + 2 \text{KOH}_{(aq)} \rightarrow \text{K}_2\text{SO}_4 + 2 \text{H}_2\text{O}$ NEUTRALIZATION
- j. $2 \text{HF}_{(g)} \rightarrow \text{H}_2 + \text{F}_2$ DECOMPOSITION
- k. $3 \text{Ba}_{(s)} + \text{N}_{2(g)} \rightarrow \text{Ba}_3\text{N}_2$ SYNTHESIS
- l. gold metal + vanadium (V) sulphate \rightarrow GOLD SULPHATE + VANADIUM SINGLE REPLACEMENT



- m. cobalt (III) bromide + fluorine gas \rightarrow COBALT (III) FLUORIDE + BROMINE GAS SINGLE REPLACEMENT



- n. zinc metal + phosphorus solid \rightarrow ZINC PHOSPHIDE SYNTHESIS



- o. chromium (III) hydride \rightarrow CHROMIUM METAL + HYDROGEN GAS DECOMPOSITION

