Fold

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3 POINT QUESTION

$2FeCl_3 + 3MgO \rightarrow Fe_2O_3 + 3MgCl_2$

Using the balanced equation above, convert 32 grams of $FeCl_3$ to grams of Fe_2O_3

$$32\ g\ FeCl_3 \left(\frac{1\ mol\ FeCl_3}{162.2\ g\ FeCl_3}\right)\left(\frac{1\ mol\ Fe_2O_3}{2\ mol\ FeCl_3}\right)\left(\frac{159.69\ g\ Fe_2O_3}{1\ mol\ Fe_2O_3}\right)$$

ANSWER: **16 grams of Fe_2O_3**

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3 POINT QUESTION

$2FeCl_3 + 3MgO \rightarrow Fe_2O_3 + 3MgCl_2$

Using the balanced equation above, convert 39 grams of $FeCl_3$ to grams of $MgCl_2$

$$39\ g\ FeCl_3 \left(\frac{1\ mol\ FeCl_3}{162.2\ g\ FeCl_3}\right)\left(\frac{3\ mol\ MgCl_2}{2\ mol\ FeCl_3}\right)\left(\frac{95.21\ g\ MgCl_2}{1\ mol\ MgCl_2}\right)$$

ANSWER: **34 grams of $MgCl_2$**

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3 POINT QUESTION

$2FeCl_3 + 3MgO \rightarrow Fe_2O_3 + 3MgCl_2$

Using the balanced equation above, convert 27 grams of MgO to grams of Fe_2O_3

$$27\ g\ MgO \left(\frac{1\ mol\ MgO}{40.305\ g\ MgO}\right)\left(\frac{1\ mol\ Fe_2O_3}{3\ mol\ MgO}\right)\left(\frac{159.69\ g\ Fe_2O_3}{1\ mol\ Fe_2O_3}\right)$$

ANSWER: **36 grams of Fe_2O_3**

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3 POINT QUESTION

$2FeCl_3 + 3MgO \rightarrow Fe_2O_3 + 3MgCl_2$

Using the balanced equation above, convert 46.0 grams of MgO to grams of $MgCl_2$

$$46.0\ g\ MgO \left(\frac{1\ mol\ MgO}{40.305\ g\ MgO}\right)\left(\frac{3\ mol\ MgCl_2}{3\ mol\ MgO}\right)\left(\frac{95.21\ g\ MgCl_2}{1\ mol\ MgCl_2}\right)$$

ANSWER: **109 grams of $MgCl_2$**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$6Li + 2H_3PO_4 \rightarrow 3H_2 + 2Li_3PO_4$

Using the balanced equation above, convert 67 grams of Li to grams of H_2

$$67\ g\ Li\left(\frac{1\ mol\ Li}{6.941\ g\ Li}\right)\left(\frac{3\ mol\ H_2}{6\ mol\ Li}\right)\left(\frac{2.016\ g\ H_2}{1\ mol\ H_2}\right)$$

ANSWER: **9.7 grams of H_2**

3 POINT QUESTION

$6Li + 2H_3PO_4 \rightarrow 3H_2 + 2Li_3PO_4$

Using the balanced equation above, convert 23 grams of Li to grams of Li_3PO_4

$$23\ g\ Li\left(\frac{1\ mol\ Li}{6.941\ g\ Li}\right)\left(\frac{2\ mol\ Li_3PO_4}{6\ mol\ Li}\right)\left(\frac{115.8\ g\ Li_3PO_4}{1\ mol\ Li_3PO_4}\right)$$

ANSWER: **130 grams of Li_3PO_4**

3 POINT QUESTION

$6Li + 2H_3PO_4 \rightarrow 3H_2 + 2Li_3PO_4$

Using the balanced equation above, convert 51 grams of H_3PO_4 to grams of Li_3PO_4

$$51\ g\ H_3PO_4\left(\frac{1\ mol\ H_3PO_4}{98\ g\ H_3PO_4}\right)\left(\frac{2\ mol\ Li_3PO_4}{2\ mol\ H_3PO_4}\right)\left(\frac{115.8\ g\ Li_3PO_4}{1\ mol\ Li_3PO_4}\right)$$

ANSWER: **60. grams of Li_3PO_4**

3 POINT QUESTION

$6Li + 2H_3PO_4 \rightarrow 3H_2 + 2Li_3PO_4$

Using the balanced equation above, convert 42 grams of H_3PO_4 to grams of H_2

$$42\ g\ H_3PO_4\left(\frac{1\ mol\ H_3PO_4}{98\ g\ H_3PO_4}\right)\left(\frac{3\ mol\ H_2}{2\ mol\ H_3PO_4}\right)\left(\frac{2.016\ g\ H_2}{1\ mol\ H_2}\right)$$

ANSWER: **1.3 grams of H_2**

Fold at the - - - line
Cut at the ——— lines

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3 POINT QUESTION

$2ZnS + 3O_2 \longrightarrow 2ZnO + 2SO_2$

Using the balanced equation above, convert 22 grams of ZnS to grams of ZnO

$$22\ g\ ZnS\left(\frac{1\ mol\ ZnS}{97.45\ g\ ZnS}\right)\left(\frac{2\ mol\ ZnO}{2\ mol\ ZnS}\right)\left(\frac{81.39\ g\ ZnO}{1\ mol\ ZnO}\right)$$

ANSWER: **18 grams of ZnO**

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3 POINT QUESTION

$2ZnS + 3O_2 \longrightarrow 2ZnO + 2SO_2$

Using the balanced equation above, convert 41 grams of O_2 to grams of ZnO

$$41\ g\ O_2\left(\frac{1\ mol\ O_2}{32\ g\ O_2}\right)\left(\frac{2\ mol\ ZnO}{3\ mol\ O_2}\right)\left(\frac{81.39\ g\ ZnO}{1\ mol\ ZnO}\right)$$

ANSWER: **70. grams of ZnO**

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3 POINT QUESTION

$2ZnS + 3O_2 \longrightarrow 2ZnO + 2SO_2$

Using the balanced equation above, convert 79 grams of ZnS to grams of SO_2

$$79\ g\ ZnS\left(\frac{1\ mol\ ZnS}{97.45\ g\ ZnS}\right)\left(\frac{2\ mol\ SO_2}{2\ mol\ ZnS}\right)\left(\frac{64.06\ g\ SO_2}{1\ mol\ SO_2}\right)$$

ANSWER: **52 grams of SO_2**

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3 POINT QUESTION

$2ZnS + 3O_2 \longrightarrow 2ZnO + 2SO_2$

Using the balanced equation above, convert 56 grams of O_2 to grams of SO_2

$$56\ g\ O_2\left(\frac{1\ mol\ O_2}{32\ g\ O_2}\right)\left(\frac{2\ mol\ SO_2}{3\ mol\ O_2}\right)\left(\frac{64.06\ g\ SO_2}{1\ mol\ SO_2}\right)$$

ANSWER: **75 grams of SO_2**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$2FeS_2 + 5Cl_2 \longrightarrow 2FeCl_3 + 2S_2Cl_2$

Using the balanced equation above, convert 62 grams of FeS_2 to grams of $FeCl_3$

$$62\ g\ FeS_2 \left(\frac{1\ mol\ FeS_2}{120\ g\ FeS_2}\right)\left(\frac{2\ mol\ FeCl_3}{2\ mol\ FeS_2}\right)\left(\frac{162\ g\ FeCl_3}{1\ mol\ FeCl_3}\right)$$

ANSWER: **84 grams of $FeCl_2$**

3 POINT QUESTION

$2FeS_2 + 5Cl_2 \longrightarrow 2FeCl_3 + 2S_2Cl_2$

Using the balanced equation above, convert 51 grams of FeS_2 to grams of S_2Cl_2

$$51\ g\ FeS_2 \left(\frac{1\ mol\ FeS_2}{120\ g\ FeS_2}\right)\left(\frac{2\ mol\ S_2Cl_2}{2\ mol\ FeS_2}\right)\left(\frac{135\ g\ S_2Cl_2}{1\ mol\ S_2Cl_2}\right)$$

ANSWER: **57 grams of S_2Cl_2**

3 POINT QUESTION

$2FeS_2 + 5Cl_2 \longrightarrow 2FeCl_3 + 2S_2Cl_2$

Using the balanced equation above, convert 81 grams of Cl_2 to grams of $FeCl_3$

$$81\ g\ Cl_2 \left(\frac{1\ mol\ Cl_2}{70.9\ g\ Cl_2}\right)\left(\frac{2\ mol\ FeCl_3}{5\ mol\ Cl_2}\right)\left(\frac{162\ g\ FeCl_3}{1\ mol\ FeCl_3}\right)$$

ANSWER: **74 grams of $FeCl_3$**

3 POINT QUESTION

$2FeS_2 + 5Cl_2 \longrightarrow 2FeCl_3 + 2S_2Cl_2$

Using the balanced equation above, convert 78 grams of Cl_2 to grams of S_2Cl_2

$$78\ g\ Cl_2 \left(\frac{1\ mol\ Cl_2}{70.9\ g\ Cl_2}\right)\left(\frac{2\ mol\ S_2Cl_2}{5\ mol\ Cl_2}\right)\left(\frac{135\ g\ S_2Cl_2}{1\ mol\ S_2Cl_2}\right)$$

ANSWER: **59 grams of S_2Cl_2**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 23 grams of HCl to grams of $MnCl_2$

$$23\ g\ HCl\left(\frac{1\ mol\ HCl}{36.5\ g\ HCl}\right)\left(\frac{1\ mol\ MnCl_2}{4\ mol\ HCl}\right)\left(\frac{125.8\ g\ MnCl_2}{1\ mol\ MnCl_2}\right)$$

ANSWER: **20. grams of $MnCl_2$**

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 64 grams of HCl to grams of Cl_2

$$64\ g\ HCl\left(\frac{1\ mol\ HCl}{36.5\ g\ HCl}\right)\left(\frac{1\ mol\ Cl_2}{4\ mol\ HCl}\right)\left(\frac{70.9\ g\ Cl_2}{1\ mol\ Cl_2}\right)$$

ANSWER: **31 grams of Cl_2**

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 51 grams of HCl to grams of H_2O

$$51\ g\ HCl\left(\frac{1\ mol\ HCl}{36.5\ g\ HCl}\right)\left(\frac{2\ mol\ H_2O}{4\ mol\ HCl}\right)\left(\frac{18\ g\ H_2O}{1\ mol\ H_2O}\right)$$

ANSWER: **13 grams of H_2O**

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 42 grams of MnO_2 to grams of $MnCl_2$

$$42\ g\ MnO_2\left(\frac{1\ mol\ MnO_2}{86.9\ g\ MnO_2}\right)\left(\frac{1\ mol\ MnCl_2}{1\ mol\ MnO_2}\right)\left(\frac{125.8\ g\ MnCl_2}{1\ mol\ MnCl_2}\right)$$

ANSWER: **61 grams of $MnCl_2$**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 52 grams of MnO_2 to grams of Cl_2

$$52\ g\ MnO_2 \left(\frac{1\ mol\ MnO_2}{86.9\ g\ MnO_2}\right)\left(\frac{1\ mol\ Cl_2}{1\ mol\ MnO_2}\right)\left(\frac{70.9\ g\ Cl_2}{1\ mol\ Cl_2}\right)$$

ANSWER: **42 grams of Cl_2**

3 POINT QUESTION

$4HCl + MnO_2 \rightarrow MnCl_2 + Cl_2 + 2H_2O$

Using the balanced equation above, convert 79 grams of MnO_2 to grams of H_2O

$$79\ g\ MnO_2 \left(\frac{1\ mol\ MnO_2}{86.9\ g\ MnO_2}\right)\left(\frac{2\ mol\ H_2O}{1\ mol\ MnO_2}\right)\left(\frac{18\ g\ H_2O}{1\ mol\ H_2O}\right)$$

ANSWER: **33 grams of H_2O**

3 POINT QUESTION

$Fe + Cl_2 \rightarrow FeCl_3$

Using the **unbalanced** equation above, convert 12 grams of Cl_2 to grams of $FeCl_3$

$$2Fe + 3Cl_2 \rightarrow 2FeCl_3$$

$$12\ g\ Cl_2 \left(\frac{1\ mol\ Cl_2}{70.9\ g\ Cl_2}\right)\left(\frac{2\ mol\ FeCl_3}{3\ mol\ Cl_2}\right)\left(\frac{162\ g\ FeCl_3}{1\ mol\ FeCl_3}\right)$$

ANSWER: **18 grams of $FeCl_3$**

3 POINT QUESTION

$Fe + Cl_2 \rightarrow FeCl_3$

Using the **unbalanced** equation above, convert 45 grams of $FeCl_3$ to grams of Fe

$$2Fe + 3Cl_2 \rightarrow 2FeCl_3$$

$$45\ g\ FeCl_3 \left(\frac{1\ mol\ FeCl_3}{162\ g\ FeCl_3}\right)\left(\frac{2\ mol\ Fe}{2\ mol\ FeCl_3}\right)\left(\frac{55.8\ g\ Fe}{1\ mol\ Fe}\right)$$

ANSWER: **16 grams of Fe**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$FeBr_3 + H_2SO_4 \rightarrow Fe_2[SO_4]_3 + HBr$

Using the **unbalanced** equation above, convert 32 grams of $FeBr_3$ to grams of H_2SO_4

$$2FeBr_3 + 3H_2SO_4 \rightarrow Fe_2(SO_4)_3 + 6HBr$$

$$32\ g\ FeBr_3 \left(\frac{1\ mol\ FeBr_3}{296\ g\ FeBr_3}\right)\left(\frac{3\ mol\ H_2SO_4}{2\ mol\ FeBr_3}\right)\left(\frac{98\ g\ H_2SO_4}{1\ mol\ H_2SO_4}\right)$$

ANSWER: **16 grams of H_2SO_4**

3 POINT QUESTION

$FeBr_3 + H_2SO_4 \rightarrow Fe_2[SO_4]_3 + HBr$

Using the **unbalanced** equation above, convert 102 grams of HBr to grams of $FeBr_3$

$$2FeBr_3 + 3H_2SO_4 \rightarrow Fe_2(SO_4)_3 + 6HBr$$

$$102\ g\ HBr \left(\frac{1\ mol\ HBr}{80.9\ g\ HBr}\right)\left(\frac{2\ mol\ FeBr_3}{6\ mol\ HBr}\right)\left(\frac{296\ g\ FeBr_3}{1\ mol\ FeBr_3}\right)$$

ANSWER: **124 grams of $FeBr_3$**

3 POINT QUESTION

$Fe + O_2 \rightarrow Fe_2O_3$

Using the **unbalanced** equation above, convert 32 grams of O_2 to grams of Fe_2O_3

$$4Fe + 3O_2 \rightarrow 2Fe_2O_3$$

$$32\ g\ O_2 \left(\frac{1\ mol\ O_2}{32\ g\ O_2}\right)\left(\frac{2\ mol\ Fe_2O_3}{3\ mol\ O_2}\right)\left(\frac{159.7\ g\ Fe_2O_3}{1\ mol\ Fe_2O_3}\right)$$

ANSWER: **110 grams of Fe_2O_3**

3 POINT QUESTION

$Fe + O_2 \rightarrow Fe_2O_3$

Using the **unbalanced** equation above, convert 81 grams of Fe to grams of O_2

$$4Fe + 3O_2 \rightarrow 2Fe_2O_3$$

$$81\ g\ Fe \left(\frac{1\ mol\ Fe}{55.8\ g\ Fe}\right)\left(\frac{3\ mol\ O_2}{4\ mol\ Fe}\right)\left(\frac{32\ g\ O_2}{1\ mol\ O_2}\right)$$

ANSWER: **35 grams of O_2**

Fold at the - - - line
Cut at the ——— lines

3 POINT QUESTION

$BaF_2 + K_3PO_4 \rightarrow Ba_3[PO_4]_2 + KF$

Using the **unbalanced** equation above, convert 42 grams of BaF_2 to gram of KF

$$3BaF_2 + 2K_3PO_4 \rightarrow Ba_3(PO_4)_2 + 6KF$$

$$42\ g\ BaF_2\left(\frac{1\ mol\ BaF_2}{175\ g\ BaF_2}\right)\left(\frac{6\ mol\ KF}{3\ mol\ BaF_2}\right)\left(\frac{58.1\ g\ KF}{1\ mol\ KF}\right)$$

ANSWER: **28 grams of KF**

3 POINT QUESTION

$H_2SO_4 + Mg[NO_3]_2 \rightarrow MgSO_4 + HNO_3$

Using the **unbalanced** equation above, convert 78 grams of $MgSO_4$ to grams of HNO_3

$$H_2SO_4 + Mg(NO_3)_2 \rightarrow MgSO_4 + 2HNO_3$$

$$78\ g\ MgSO_4\left(\frac{1\ mol\ MgSO_4}{120\ g\ MgSO_4}\right)\left(\frac{2\ mol\ HNO_3}{1\ mol\ MgSO_4}\right)\left(\frac{63\ g\ HNO_3}{1\ mol\ HNO_3}\right)$$

ANSWER: **82 grams of HNO_3**

3 POINT QUESTION

$Al + H_2SO_4 \rightarrow Al_2[SO_4]_3 + H_2$

Using the **unbalanced** equation above, convert 27 grams of Al to grams of H_2

$$2Al + 3H_2SO_4 \rightarrow Al_2(SO_4)_3 + 3H_2$$

$$27\ g\ Al\left(\frac{1\ mol\ Al}{27\ g\ Al}\right)\left(\frac{3\ mol\ H_2}{2\ mol\ Al}\right)\left(\frac{2.016\ g\ H_2}{1\ mol\ H_2}\right)$$

ANSWER: **3.0 grams of H_2**

3 POINT QUESTION

$WO_3 + H_2 \rightarrow W + H_2O$

Using the **unbalanced** equation above, convert 32 grams of H_2O to grams of WO_3

$$WO_3 + 3H_2 \rightarrow W + 3H_2O$$

$$32\ g\ H_2O\left(\frac{1\ mol\ H_2O}{18\ g\ H_2O}\right)\left(\frac{1\ mol\ WO_3}{3\ mol\ H_2O}\right)\left(\frac{232\ g\ WO_3}{1\ mol\ WO_3}\right)$$

ANSWER: **140 grams of WO_3**