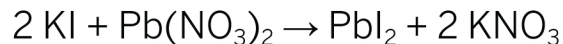


Name : _____ Date : _____

STOICHIOMETRY WORKSHEET

1. Consider the following reaction:



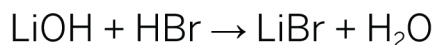
a. Calculate the mass of PbI_2 produced by reacting 30 g KI.

b. What mass of $\text{Pb}(\text{NO}_3)_2$ is required to make 50.69 g of KNO_3 ?

2. Write and balance the single replacement reaction between aluminum and zinc chloride.

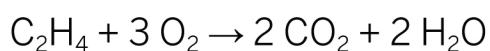
What is the combined mass of the products when 3 g of zinc chloride react?

3. In the following reaction:



How many grams of lithium bromide will be produced if you start with 10 g of lithium hydroxide?

4. In the following reaction:

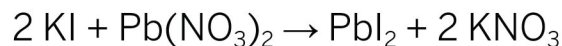


How much (in grams) carbon dioxide will be produced if you start with 45 grams of ethylene (C_2H_4)?

STOICHIOMETRY WORKSHEET

Answers

1. Consider the following reaction:



a. Calculate the mass of PbI_2 produced by reacting 30 g KI.

$$30 \text{ g KI} \times (1 \text{ mol KI}/166 \text{ g KI}) \times (1 \text{ mol PbI}_2/2 \text{ mol KI}) \times (461 \text{ g PbI}_2/1 \text{ mol PbI}_2) = 41.7 \text{ g PbI}_2$$

b. What mass of $\text{Pb}(\text{NO}_3)_2$ is required to make 50.69 g of KNO_3 ?

$$50.69 \text{ g KNO}_3 \times (1 \text{ mol KNO}_3/101.1 \text{ g KNO}_3) \times (1 \text{ mol Pb}(\text{NO}_3)_2/2 \text{ mol KNO}_3) \\ \times (331.2 \text{ g Pb}(\text{NO}_3)_2/1 \text{ mol Pb}(\text{NO}_3)_2) = 83.03 \text{ g Pb}(\text{NO}_3)_2$$

2. Write and balance the single replacement reaction between aluminum and zinc chloride.

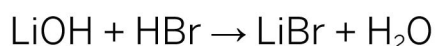


What is the combined mass of the products when 3 g of zinc chloride react?

$$3 \text{ g ZnCl}_2 \times (1 \text{ mol ZnCl}_2/136.4 \text{ g ZnCl}_2) \times (2 \text{ mol AlCl}_3/3 \text{ mol ZnCl}_2) \\ \times (133.5 \text{ g AlCl}_3/1 \text{ mol AlCl}_3) = 2 \text{ g AlCl}_3$$

$$3 \text{ g ZnCl}_2 \times (1 \text{ mol ZnCl}_2/136.4 \text{ g ZnCl}_2) \times (3 \text{ mol Zn}/3 \text{ mol ZnCl}_2) \times (65.4 \text{ g Zn}/1 \text{ mol Zn}) = \\ 1.4 \text{ g Zn} \qquad \text{Combined mass: } 2 \text{ g} + 1.4 \text{ g} = 3.4 \text{ g}$$

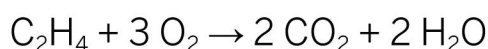
3. In the following reaction:



How many grams of lithium bromide will be produced if you start with 10 g of lithium hydroxide?

$$10 \text{ g LiOH} \times (1 \text{ mol LiOH}/24 \text{ g LiOH}) \times (1 \text{ mol LiBr}/1 \text{ mol LiOH}) \times (87.4 \text{ g LiBr}/1 \text{ mol LiBr}) = \\ 36.23 \text{ g LiBr}$$

4. In the following reaction:



How much (in grams) carbon dioxide will be produced if you start with 45 grams of ethylene (C_2H_4)?

$$45 \text{ g C}_2\text{H}_4 \times (1 \text{ mol C}_2\text{H}_4/28 \text{ g C}_2\text{H}_4) \times (2 \text{ mol CO}_2/1 \text{ mol C}_2\text{H}_4) \times (44 \text{ g CO}_2/1 \text{ mol CO}_2) \\ = 141.43 \text{ g CO}_2$$