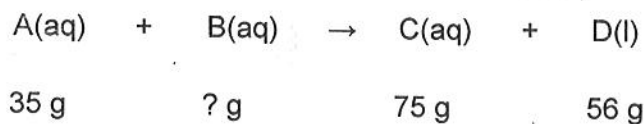


Law of Conservation of Mass

The Law: matter cannot be created nor destroyed

Example: mass of R = mass of P

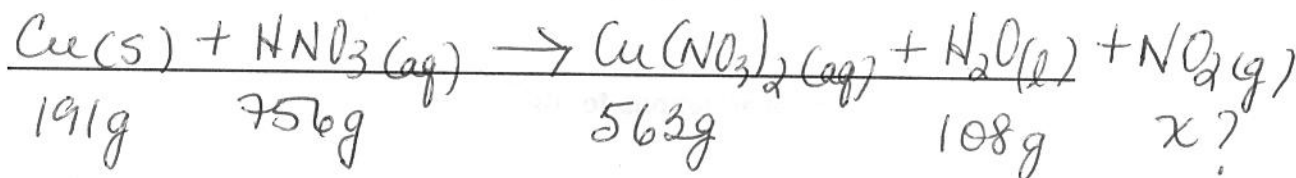
On mixing 2 aqueous solutions you observe from the products that a neutralization reaction has occurred. The equation and the results below illustrate this chemical reaction.



What is the mass of B that reacted? 96 g

- 1) When 191 g of copper is combined with 756 g of a nitric acid solution HNO_3 the chemical reaction produces 563 g of copper nitrate $\text{Cu}(\text{NO}_3)_2$, 108 g of water and a certain amount of nitrogen dioxide. (II)

Write the balanced chemical equation first:

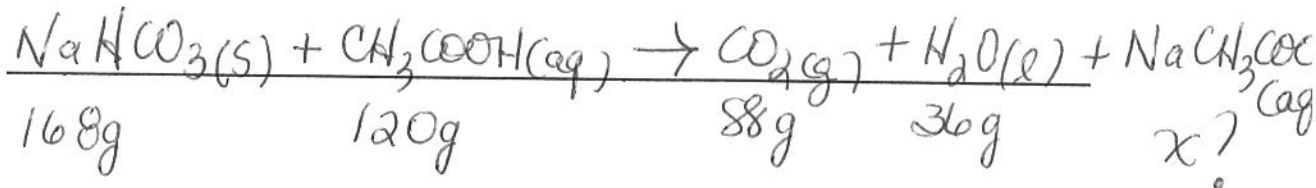


What mass of nitrogen dioxide does this reaction produce?

276 g NO_2

- 2) A reaction involving 168 g of sodium hydrogen carbonate (BS) and 120 g of vinegar produces 88 g of carbon dioxide, 36 g of water and a certain amount of salt. acid!

Write the balanced chemical equation first:



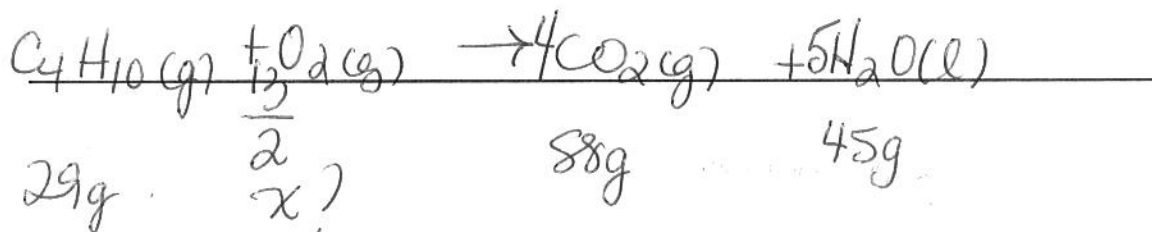
How much salt is produce?

164 g NaCH_3COO

ff = Hydrocarbon

- 3) The reaction caused by the burning of lighter fluid or butane C_4H_{10} in air produces energy and carbon dioxide and water.

Write the balanced chemical equation indicating which side the energy is on:



During a lab, you react 29 g of butane. You observe that 88 g of carbon dioxide and 45 g of water vapour form.

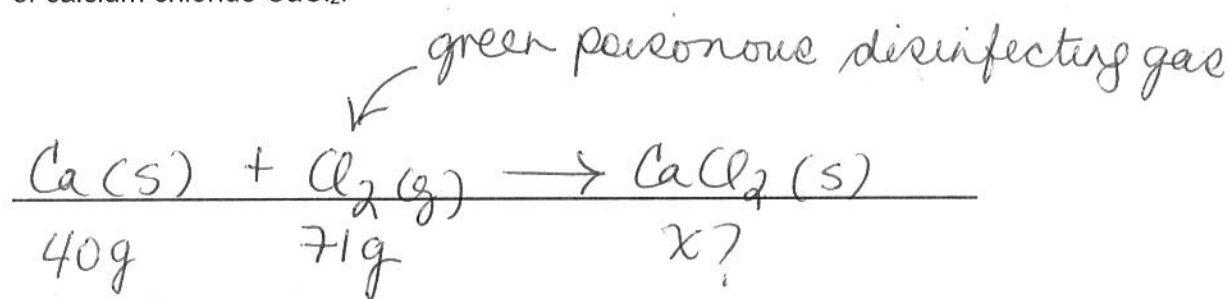
What mass of oxygen from the air reacted with the butane?

104g O₂

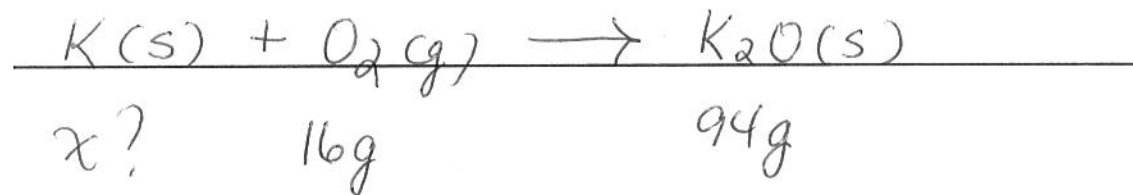
Fill in the blank with the correct number of grams.

Write the balanced chemical equations for the following including proper subscripts.

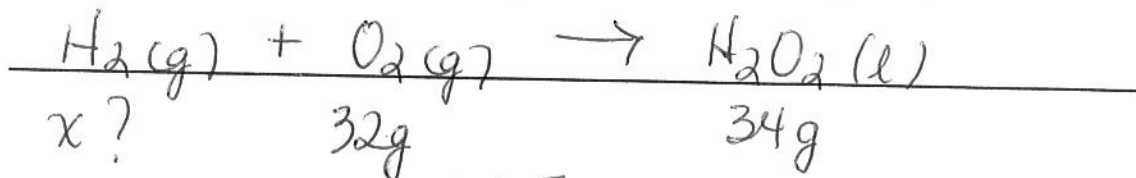
- 1) 40 g of calcium reacts with 71 g of chlorine to produce 111 g of calcium chloride $CaCl_2$.



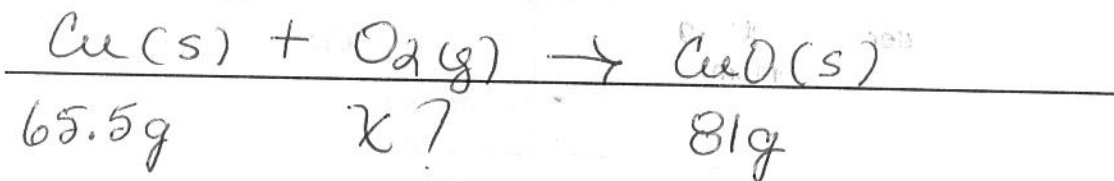
- 2) 78 g of potassium reacts with 16 g of oxygen to produce 94 g of potassium oxide K_2O .



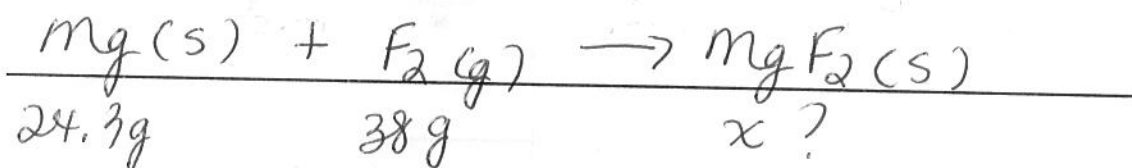
- 3) 2 g of hydrogen reacts with 32 g of oxygen to produce 34 g of hydrogen peroxide.



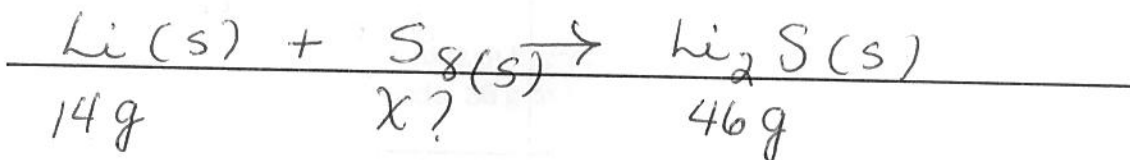
- 4) 65.5 g of copper reacts with 15.5 g of oxygen to produce 81 g of copper (I) oxide CuO.



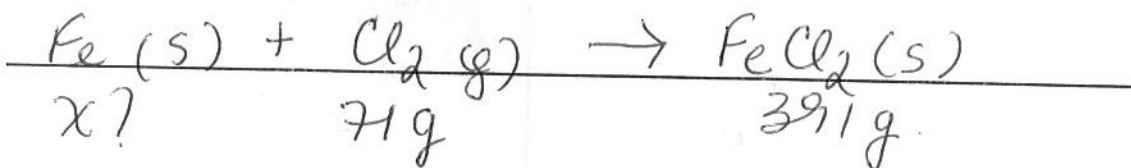
- 5) 24.3 g of magnesium reacts with 38 g of fluorine to produce 62.3 g of magnesium fluoride MgF₂.








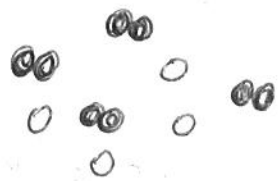

- 6) 14 g of lithium reacts with 32 g of sulfur to produce 46 g of lithium sulfide Li₂S.



- 7) 320 g of iron reacts with 71 g of chlorine to produce 391 g of iron (2) chloride FeCl₂.



Classify the following as atoms or molecules, elements or compounds, homogeneous or heterogeneous mixtures:

<p>1</p> <p>atoms</p> 	<p>2</p> <p>molecules</p> 
<p>3</p> <p>element</p> 	<p>4</p> <p>cpd</p> 
<p>5</p> <p>homo 2 elements</p> 	<p>6</p> <p>hetero 2 elements</p> 
<p>7</p> <p>homo 1 ele + 1 cpd</p> 	<p>8</p> <p>hetero 2 cpds</p> 