23

1.	Closed System	C	A. In a closed reaction mass cannot be lost.
2.	The Law of Conservation of Mass	A	B. When the reactants equal the products.
3.	Open System	E	C. When the reaction is closed and gases can't escape.
4.	Atomic Mass	F	D. How heavy a compound or molecule is.
5.	Molecular Mass	D	E. When gases aren't caught by the experimental setup.
6.	Balanced Reaction	B	F. The decimal numbers on the periodic table.

Find the molecular mass of the following compounds.

N_2 14 + 14 = 28 AMU

CaF_2 40 + 19 + 19 = 78 AMU

CO_2 12 + 16 + 16 = 44 AMU

Na_2SO_3 23 + 23 + 32 + 16 + 16 + 16

126 AMU

Find the atomic masses for the following elements

A. Sodium = 23
B. Chlorine = 35
C. Iron = 56
D. Mercury = 201
E. Gold = 197
F. Hydrogen = 1
G. Neon = 20
H. Lead = 207

Open or closed reaction?

open

Will you be able to prove the Law of Conservation of Mass with this setup? Why or why not?

No, the system is not closed & matter can escape

Will the mass of his products be greater than, less than, or equal to his reactants? less

Why? products escapes

$4K + O_2 \rightarrow 2K_2O$
25g + 5 g ? g
30g

If 25 g of Potassium is reacted with 5 g of Oxygen, how much Potassium Oxide is produced?

$2Mg + O_2 \rightarrow 2MgO$
23g + ? g 38 g
15g

If 23 g of Magnesium is reacted with Oxygen to produce 38 g of Magnesium Oxide, how much Oxygen was used in the reaction?

$2KCl + Li_2O \rightarrow K_2O + 2LiCl$
21g + 4 g ? g 12 g
13g

Using the numbers given, find how much K_2O is produced in the reaction.

How many total molecules are there?

7 $2H_2O$ 5 $5Be_2Br$ 8 $8CO_2$
3 $3NaCl$ 1 O_2 1 MgS

$Li_2O + MgCl_2 \rightarrow 2LiCl + MgO$

Name the first reactant: Lithium Oxide

Name the second product: Magnesium Oxide

How many Magnesiums on the product side? 1

How many total atoms are there?

4+1 = 5 $2H_2O$ 6 $2Be_2Br$ 7+14 = 21 $7CO_2$
6+6 = 12 $6NaCl$ 8 $4O_2$ 2+2 = 4 $2MgS$

$2K_3N + 3CaCrO_4 \rightarrow Ca_3N_2 + 3K_2CrO_4$

Circle the second reactant. *Underline* the first product.

How many Nitrogen atoms on the reactant side: 2

How many Calcium atoms on the product side? 3

$2AlCl_3 + 3Na_2CO_3 \rightarrow Al_2(CO_3)_3 + 6NaCl$

Circle the first product. *Underline* the first reactant.

How many Sodium atoms on the product side? 6

How many $AlCl_3$ molecules on the reactant side? 1

$Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$
2+3 +3 2 3+3

Circle and *Name* the first reactant: Iron Oxide

How many total atoms on the product side: 8

How many total molecules on the reactant side: 8