Turning Unbalanced Reactions into Balanced Reactions

CheMistry: http://genest.weebly.com

Stop in for help every day at lunch and Tues &Thurs after school!

Jean Michel Basquiat

Name ANSWERS

Period

Add more cartoon atoms until they obey the Law of Conservation of Mass
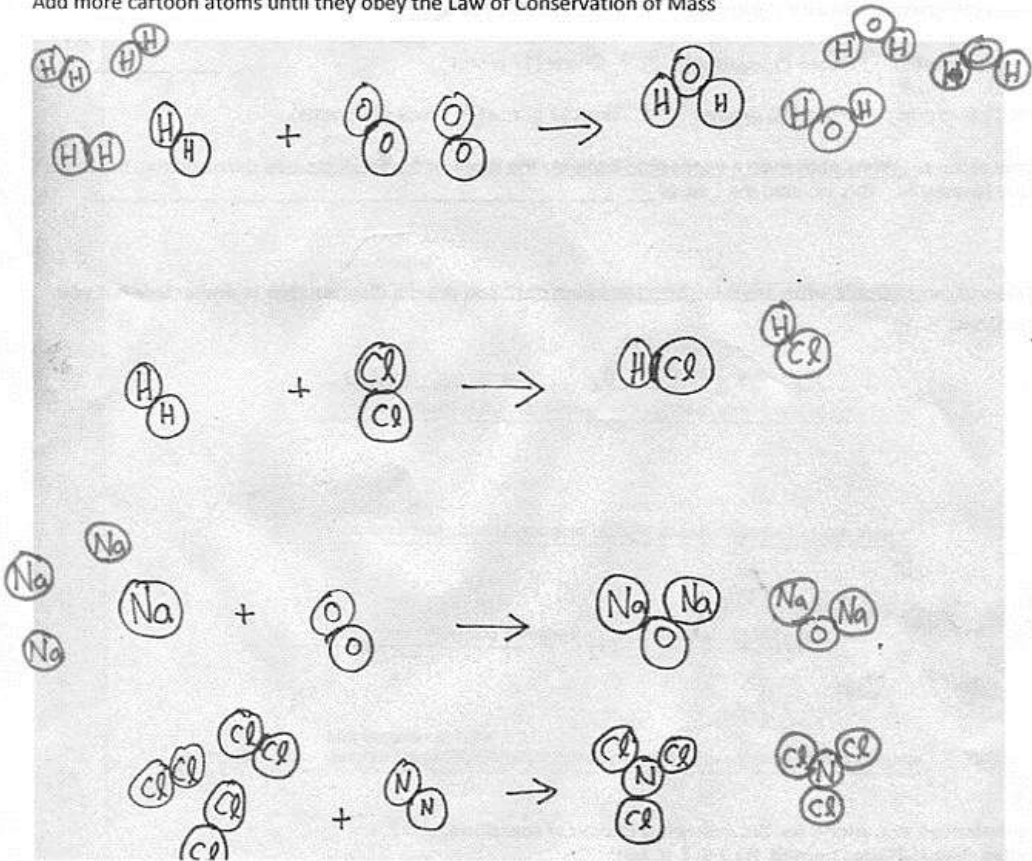
Don't continue until you get a stamp here →

Write the unbalanced equations for the following chemical reaction.
Write formulas (like H_2O) _and_ phases (like s, l, g, aq):

1) When wax ($C_{22}H_{44}$) burns in oxygen, carbon dioxide, water and heat are produced

answer: $C_{22}H_{44} + O_2 \rightarrow CO_2 + H_2O$

Answers

Some of these are impossible because the mass of the Products is different from the mass of the Reactants. If a reaction is possible, write POSSIBLE in the blank. Otherwise, write into the blank space what number of grams would make it possible.

2. Hubba (16 grams) + Hubba (16 grams) ⟶ DoubleHub **(30 grams)**   *32 grams*

3. Hiphip (3 grams) + Hooray **(14 grams)** ⟶ Cheer (17 grams)   *POSSIBLE!*

4. Ping (1.5 grams) + Pong **(38 grams)** ⟶ Tick (17 grams) + Tock (22 grams)   *37.5 grams*

5. Some of the reactions above were impossible because the mass of the Products was different from the mass of the Reactants. This violated the Law of ___*Conservation of mass*___.

Data and Observations. Don't write anything into the blank until you draw a diagram that is similar to what you drew on the front.

6.   ___*2*___ H_2 + ___*1*___ O_2 → ___*2*___ H_2O

Diagram:

7.   ___*1*___ H_2 + ___*1*___ Cl_2 → ___*2*___ HCl

Diagram:
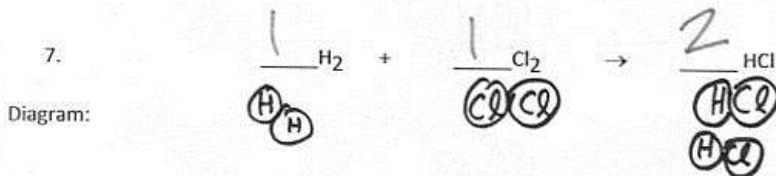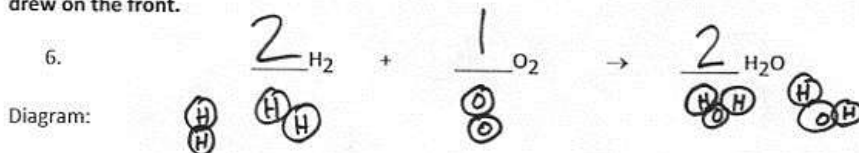
Write the unbalanced equations for the following chemical reactions.
Write formulas (like H_2O) *and* phases (like s, l, g, aq):

8. For the reaction Fe + Cl_2 -> $FeCl_3$ solve for the missing mass, using the law of conservation of mass in each case.
   a. If 44 grams of iron react with 65 grams of chlorine, how much iron(III)chloride should form?

      109 grams

   b. If 44 grams of iron react and 100 grams of iron(III)chloride form, how many grams of chlorine reacted?   *44g + (56g) = 100g*
      Answer: 56 grams

Please go to Lab Data Blog at http:genest.weebly.com to submit a famous figure from Black History. I'll give extra credit if we use your choice!

Balancing Reactions

CheMis+ry

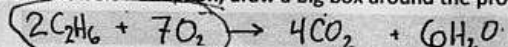Stop in for help every day at lunch and Tues & Thurs after school.

Name_____

Period_____

1. In the below reaction, draw a big box around the products. Draw a circle around the Reactants.

$$\left(2C_2H_6 + 7O_2\right) \rightarrow 4CO_2 + 6H_2O$$

2. What does the Law of Conservation of Mass say must ALWAYS ALWAYS ALWAYS be true about the mass of the Reactants in any reaction in the history of the entire Universe?

total mass before the reaction must equal total mass after the reaction

1. How many oxygen atoms are present in each of these?

a.	5	$5H_2O$	b. $9CO_2$	18
c.	9	$Al_2(CO_3)_3$	d. $2H_2SO_4$	8

2. For each equation, just do a scoreboard below it to PROVE whether it is balanced or not.

a. $2H_{2(g)} + N_{2(g)} \rightarrow 3NH_{3(g)}$
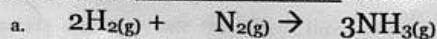
before		after
4	H	9
2	N	3

This equation is (balanced /(unbalanced))

According to the Law of Conservation of Mass, this equation would be (impossible / possible)

b. $6H_{2(g)} + 2N_{2(g)} \rightarrow 4NH_{3(g)}$
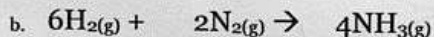
before		after
4	N	4
12	H	12

This equation is ((balanced) / unbalanced)

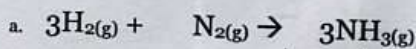According to the Law of Conservation of Mass, this equation would be (impossible / (possible))

c. $2C_4H_8 + 12O_2 \rightarrow 8CO_2 + 8H_2O$
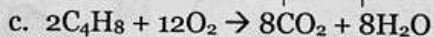
before		after
16	H	16
8	C	8
24	O	24

This equation is ((balanced) / unbalanced)

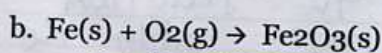According to the Law of Conservation of Mass, this equation would be (impossible / (possible))

a. $3H_{2(g)} + N_{2(g)} \rightarrow 3NH_{3(g)}$

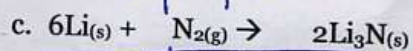| before		after
6	H	9
2	N̶	3

This equation is (balanced / unbalanced)

In real life, this equation would be (impossible / possible)

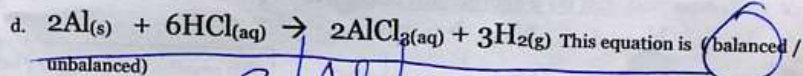For each equation, just do a scoreboard below it to PROVE whether it is balanced or not.

b. $Fe(s) + O_2(g) \rightarrow Fe_2O_3(s)$

1	Fe	2
2	O	3

This equation is (balanced / unbalanced)

c. $6Li_{(s)} + N_{2(g)} \rightarrow 2Li_3N_{(s)}$

6	Li	6
2	N	2

This equation is (balanced / unbalanced)

d. $2Al_{(s)} + 6HCl_{(aq)} \rightarrow 2AlCl_{3(aq)} + 3H_{2(g)}$ This equation is (balanced / unbalanced)

2	Al	2
6	H	6
6	Cl	6

e. $SO_{2(g)} + O_{2(g)} \rightarrow SO_{3(g)}$

1	S	1
4	O	3

This equation is (balanced / unbalanced)
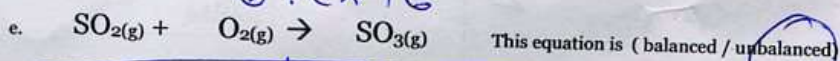
Mark true/false for each and then, if II correctly explains I circle CE

I		II	I	II	
In nature, the Law of Conservation of Mass always works	because	The mass of the products in a reaction is less than the mass of the reactants	T F	T F	CE