
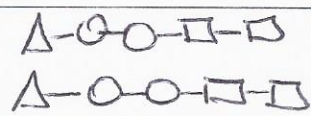

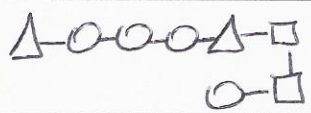


Particle Model and Balancing Worksheet 2

1. Represent the following with symbols.

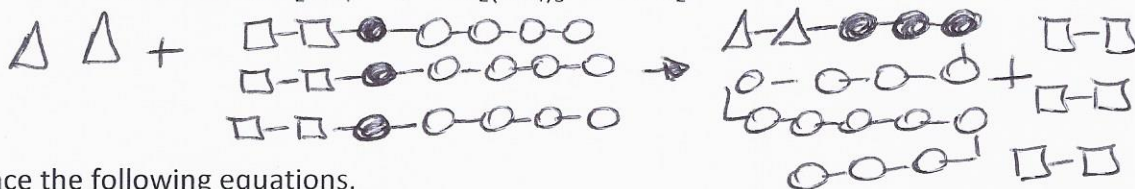
3 Be		2 Ca(OH) ₂	
2 O ₃		CH ₃ COOH	

2. Represent each equation using the particle model.

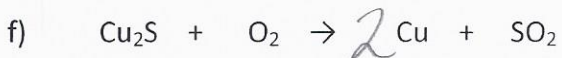
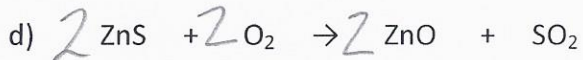
a-



b-



3. Balance the following equations.



4. While consulting some old documents, you find a lab report written in 1968. Here is part of the document.

Experiment Results

mass of Pb (NO₃)₂ before reaction : 3.31 g
 mass of NaI before reaction : 3.00 g
 mass of PbI₂ after reaction : 4.61 g
 mass of Na NO₃ after reaction :

Conclusion : The results of this experiment confirm
 Law of Conservation of Mass

Pb(NO₃)₂ + 2 NaI → PbI₂ + 2 NaNO₂

3.31 g 3.00 g 4.61 g

You notice that the mass of one of the products, NaNO₃ is missing. If all of the reactants were used up, what must be the missing mass of NaNO₃?

$$6.31 - 4.61 = 1.7g$$

5. The balanced equation for the combustion of propane is as follows:



When a barbeque is used and 14.7 g of propane (C₃H₈) reacts with 53.3 g of oxygen gas (O₂), this produces a certain amount of carbon dioxide (CO₂) and 24.0 g of water vapour (H₂O). What mass of carbon dioxide is released in this situation?

- A) 14.7 g B) 44.0 g C) 61.7 g D) 68.0 g

6. To solder two pieces of metal, a soldered uses acetylene gas (C₂H₂) that is reacted with oxygen (O₂). The combustion produces two gases, carbon dioxide (CO₂) and water vapour (H₂O), as well as a lot of heat. Which balanced equation represents this reaction?



7. The unbalanced equation for the combustion of Octane (C₈H₁₈) is as follows:



What must the value of **x and y** be so that the equation is balanced?

- A) x=16 and y=9 B) x=16 and y=18 C) x=25 and y=9 D) x=25 and y=18

8. During a chemical reaction, two molecules of hydrogen gas, H_2 , react with one molecule of oxygen gas, O_2 , to produce two molecules of water, H_2O .

The balanced chemical equation for this reaction is as follows: $2H_2 + O_2 \rightarrow 2H_2O$

Below are four proposed models of the balanced chemical equation for this reaction. They were constructed using the following symbols:

Hydrogen:  Oxygen: 

Which of these models represents the balanced chemical equation for this reaction?

