Name_____

Period_____

1. Can you see a molecule? **NO**

2. Explain why **too small**

3. Can you count the molecules by looking at a chemical reaction? **NO.**

4. What does Avogadro's Principle tell us about the number of particles in the four balloons shown below?

   They have the same number of particles

   (each balloon contains one substance, an element. There are no compounds.)

2.999 liters of Substance	2.999 liters of Substance	2.999 liters of Substance	2.999 liters of Substance
A	B	C	D
184 grams	23 grams	276 grams	943 grams

$$\frac{184g}{23g}$$

5. IF we arbitrarily choose **the lightest substance** and divide the others by it, we can get relative ratios of the mass of single pieces. Do this for each substance.

   a. Relative Mass of Substance A

   $$\frac{184g}{23g} = 8 \quad \leftarrow \text{no unit!}$$

   b. Relative Mass of Substance B

   $$\frac{23g}{23g} = 1$$

   c. Relative Mass of Substance C

   $$\frac{276g}{23g} = 12$$

   d. Relative Mass of Substance D

   $$\frac{943g}{23g} = 41$$

   finish for homework!

6. What does Avogadro's Principle tell us about the number of particles in the four balloons shown below?

Same volume balloons should have the same # of particles

(each balloon contains one substance, an element. There are no compounds.)

2.999 liters of Substance	2.999 liters of Substance	2.999 liters of Substance	2.999 liters of Substance
E	F	G	H
85 grams	221 grams	17 grams	102 grams

7. IF we arbitrarily choose **the lightest substance** and divide the others by it, we can get relative ratios of the mass of single pieces. Do this for each substance.
   a. Relative Mass of Substance E

   $$\frac{85g}{17g} = 5$$

   b. Relative Mass of Substance F

   $$\frac{221g}{17g} = 13$$

   c. Relative Mass of Substance G

   $$\frac{17g}{17g} = 1$$

   d. Relative Mass of Substance H

   $$\frac{102g}{17g} = 6$$

8. State Proust's Law: **A substance always has the same relative number (same count) of each type of element.**