Monday, November 3rd, 2014

Homework: Agenda Questions 1-5.

Objective: We will convert between atoms and grams using Avogadro's Number and molar mass.

Standard: IOD 304:
Determine how the value of one variable changes as the value of another variable changes.

Catalyst:

As atomic number increases from 7-9, how does electron affinity change?

10	Week 10 Agenda	52
10	Week 10 Catalyst	53
10	Gram to Atom Conversions	54

Announcements

- No tutoring today after school.
- Tutoring Tuesday and Thursday after school
- **Bring a calculator to class with you EVERYDAY!**
- Conversion Quiz Tomorrow!

Days Until the End of Quarter 1

3

Agenda

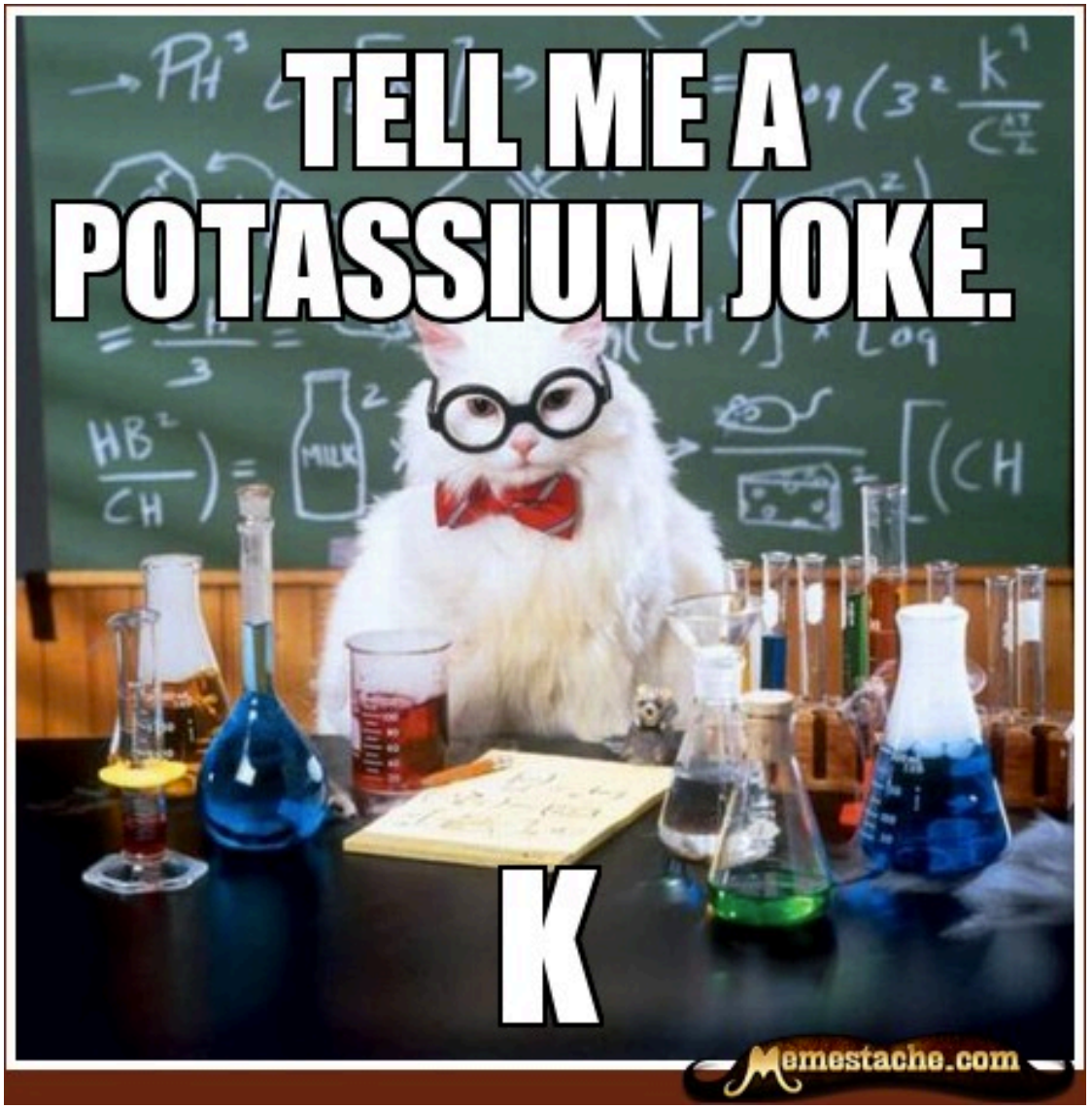
- Catalyst
- Homework Review
- Elements Quiz!
- Notes: Atom to Gram Conversions

HW Review

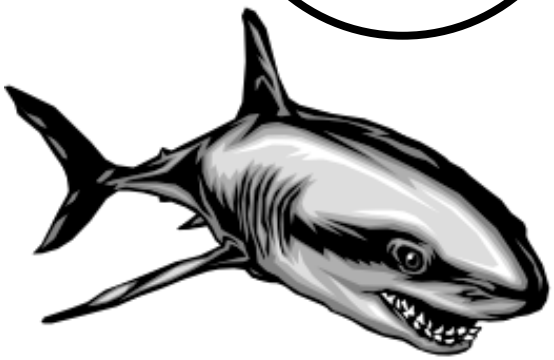
7.

8.

Elements Quiz!



Mole Island!



Mass (g)

1 mol = molar mass (in g)

MOLE (mol)

Atoms

1 mol = 6.02×10^{23} atoms

Practice

- Complete the 1 step conversions A-D on your sheet. This is review from the last 2 days.

Tuesday, November 4th, 2014

Homework: Agenda Questions 1-5.

Objective: We will convert between atoms and grams using Avogadro's Number and molar mass.

Standard: IOD 304:
Determine how the value of one variable changes as the value of another variable changes.

Catalyst:

What can be said about the relationship between atomic number and electron affinity across the data set?

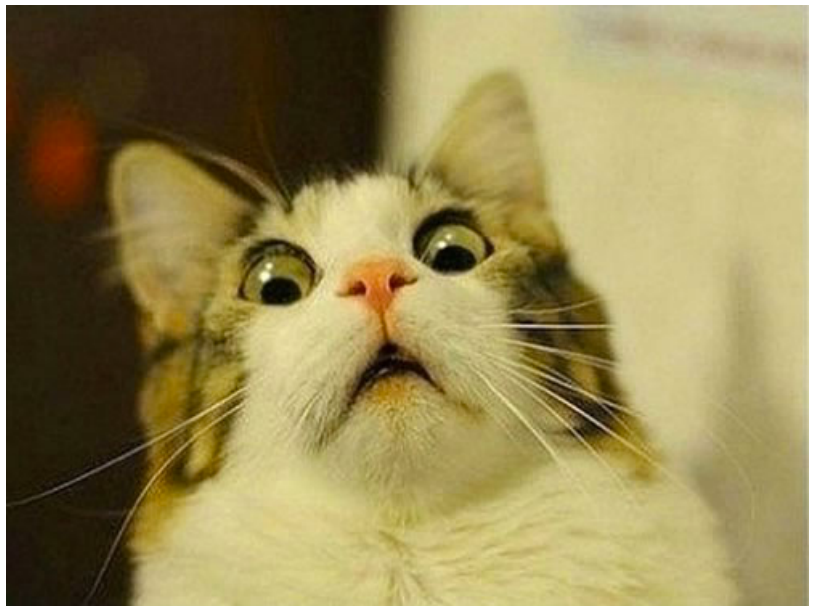
10	Week 10 Agenda	52
10	Week 10 Catalyst	53
10	Gram to Atom Conversions	54

Announcements

- Tutoring today and Thursday after school
- **Bring a calculator to class with you EVERYDAY!**
- Conversion Quiz **TOMORROW**!

Days Until the End of Quarter 1

2



Agenda

- Catalyst
- Notes: Atom to Gram Conversions
- Review

Answers

A. 8.4×10^{23} atoms of Cs

B. 6.49 moles of Na

C. 51 grams of S

D. 0.250 mole CaO

Think. Pair. Share.

Why can’t we convert directly from mass to atoms or from atoms to mass?

Think. Pair. Share.

If I asked you to determine how many atoms of copper were in a copper cube, how could you do it?

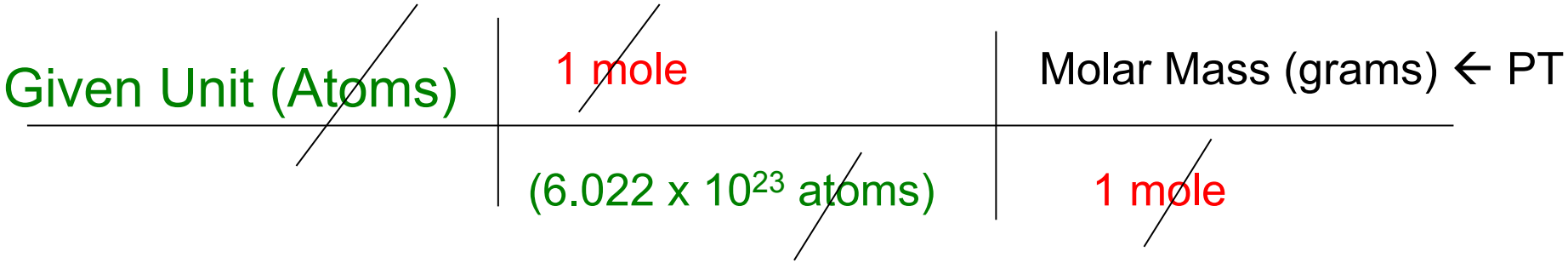
Remember when??

- Convert 3520 seconds to hours
  - Can you do this in one step?
  - How can we use our T chart to help answer this question?

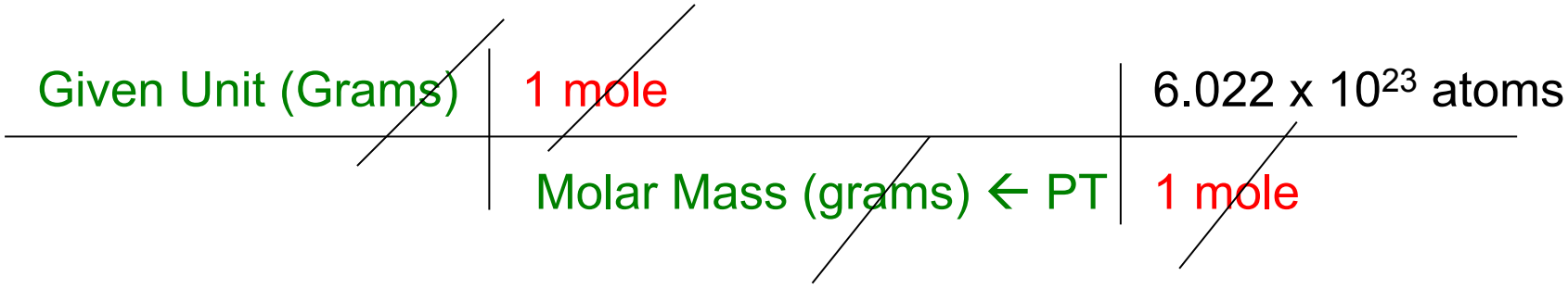
$$\frac{3520 \text{ seconds}}{} \times \frac{1 \text{ minute}}{60 \text{ seconds}} \times \frac{1 \text{ hours}}{60 \text{ minutes}} = 0.978 \text{ hours}$$

The Mole

– When going <u>from</u> atoms/molecules to grams

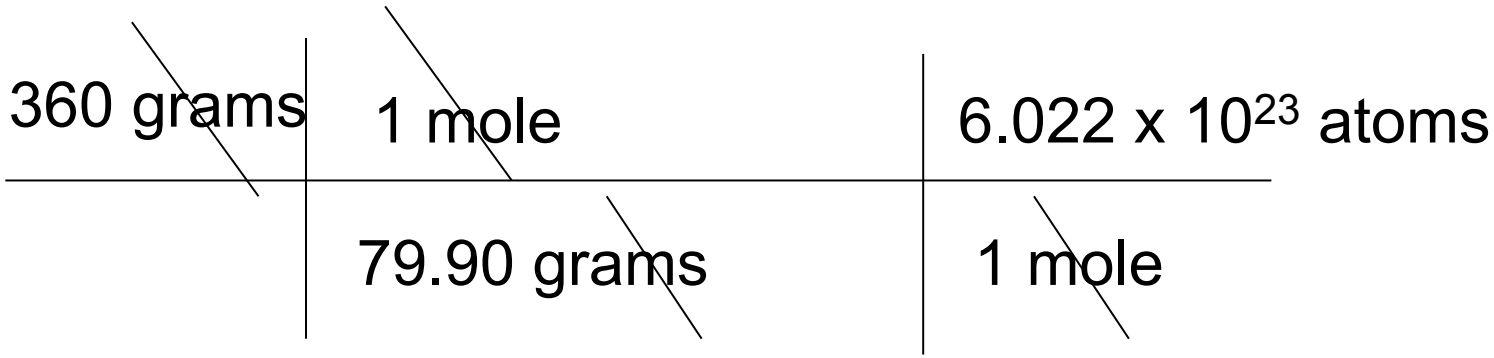


– When going <u>from</u> grams to atoms/molecules



The Mole: Gram to Atom

- How many atoms are in 360 grams of bromine?



Ans: 2.71×10^{24} atoms of bromine

The Mole: Atom to Gram

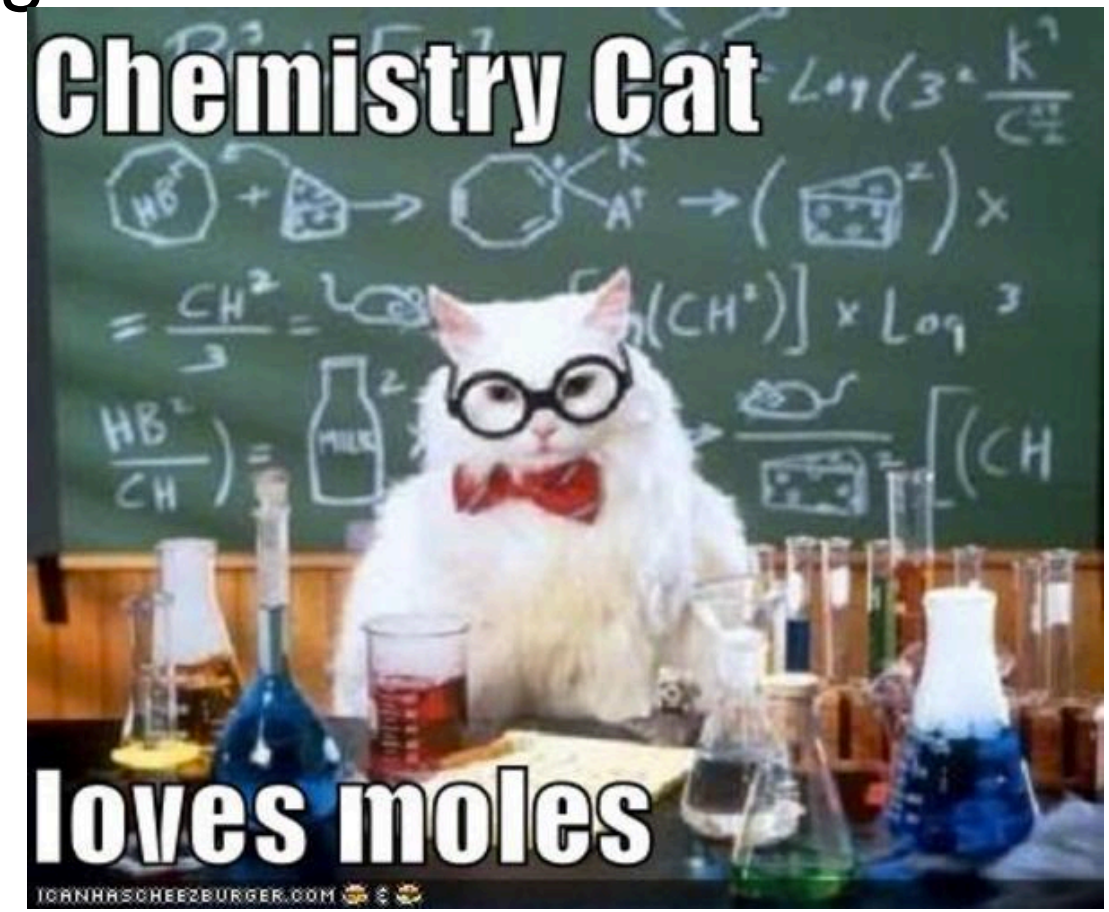
- What is the mass of 5.6×10^{25} molecules of ammonia (NH_3)?

$$\frac{5.6 \times 10^{25}\ \text{molecules}}{} \times \frac{1\ \text{mole}}{(6.022 \times 10^{23}\ \text{molecules})} \times \frac{17.04\ \text{grams}}{1\ \text{mole}}$$

Ans: 1,600 grams of ammonia

Practice Worksheet

Complete the problems on your practice worksheet making sure to follow all instructions.



Wednesday, November 5, 2014

Homework: Finish History of Atomic Structure Reading. Agenda Questions.

Objective: We will be able to analyze a set of data to determine if a substance is an element, compound, or mixture.

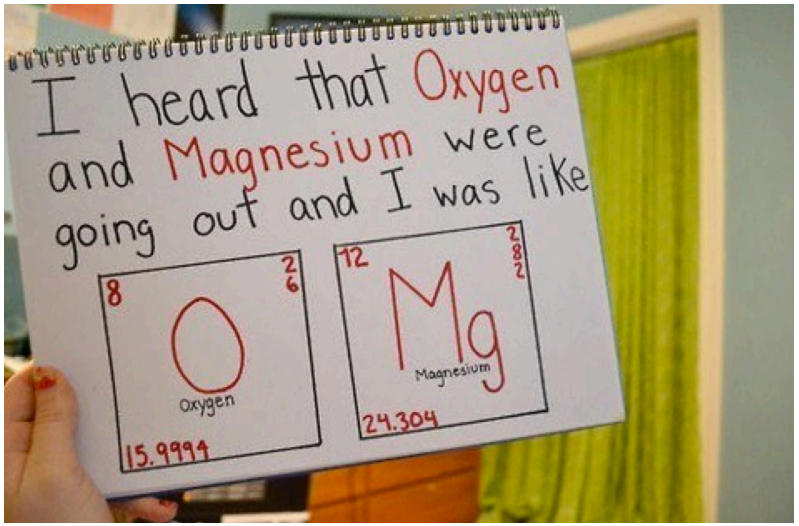
Standard: EMI 301: Identify implications in a model.

Catalyst:

Based on the data provided, could the scientists determine, with certainty, that as atomic number increases, electron affinity decreases? Why or why not?

Announcements

- Tutoring after school *Thursday!*
- Agenda problem #6 for homework!



Days Until the End of Quarter 1

1

Agenda

- Catalyst
- Learning Groups
- The POGIL Project

Think-Pair-Share

- What are some of the benefits to working with a group of people?
- What are some of the downsides of working with a group of people?

Period 2

Group 1: Kamyl Mariah Ronald Janea **DESKS!!**	Group 2: Jeremy Breona Ladjion Lilronald **DESKS!!**	Group 3: Marquell Rajah Kai **DESKS!!**	Group 4: Jazmine Zlandria Yah Ike **DESKS!!**
Group 5: Jakobi Quinetta Lorenzo	Group 6: Cemarah Coumba Dajionae	Group 7: Brianna Christian Alyssa	Group 8: Manny Rashad Naimah **DESKS!!**

Period 7

Group 1: Gabe Caira Cheyenne	Group 2: Malcolm Monee Jacob Kendra **DESKS!!**	Group 3: Kyle Tionna Derek **DESKS!!**	Group 4: Joseph Kensington Malik **DESKS!!**
Group 5: Jared Juwan Amiyah	Group 6: Martez Marieal Bonito	Group 7: Alexandria Tyrone Derek **DESKS!!**	Group 8: Samiyah Tril Xavier Demetrius **DESKS!!**

Period 8

Group 1: Calvin Amber Siniah **DESKS!!**	Group 2: Dwight Imani Shanelle **DESKS!!**	Group 3: Tiffany Cairo Jasmine **DESKS!!**	Group 4: Keyshawn Jade Dre **DESKS!!**
Group 5: Armani Nykira Koby	Group 6: Arryl Unique	Group 7: Tia Curtis Alisia **DESKS!!**	Group 8: Rayshon Remi **DESKS!!**

The POGIL Project

- POGIL: Process Oriented Guided Inquiry Learning
- Developed to help students take ownership of their learning by working in learning groups

The POGIL Process

- Learning Group Roles:
  - Facilitator – keep group on task!
  - Quality Control – make sure answers are correct and of high quality!
  - Process Analyst – make sure group is following instructions!
  - Spokesperson – shares out for the group and is the **ONLY** person who can ask Ms. Kline questions!
- I will be listening for sentence starters.
- You have 20 minutes to work today.

Thursday, November 6, 2014

Homework: Agenda problem #7.

Objective: We will be able to analyze a set of data to determine if a substance is an element, compound, or mixture.

Catalyst:

How many **moles** are in 13 g of Lithium?

How many **atoms** are in 13 g of Lithium?

Period 2

Group 1: Kamyl Mariah Ronald Janea **DESKS!!**	Group 2: Jeremy Breona Ladjion Lilronald **DESKS!!**	Group 3: Marquell Rajah Kai **DESKS!!**	Group 4: Jazmine Zlandria Yah Ike **DESKS!!**
Group 5: Jakobi Quinetta Lorenzo	Group 6: Cemarah Coumba Dajionae	Group 7: Brianna Christian Alyssa	Group 8: Manny Rashad Naimah **DESKS!!**

Period 7

Group 1: Gabe Caira Cheyenne	Group 2: Malcolm Monee Jacob Kendra **DESKS!!**	Group 3: Kyle Tionna Derek **DESKS!!**	Group 4: Joseph Kensington Malik **DESKS!!**
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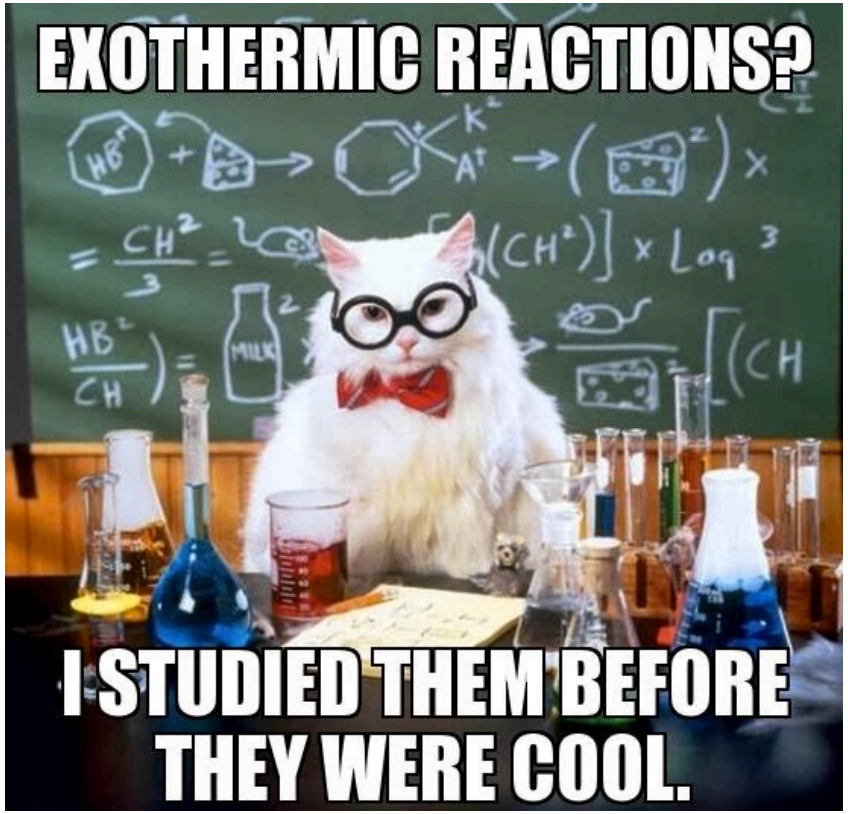
Period 8

Group 1: Calvin Amber Siniah **DESKS!!**	Group 2: Dwight Imani Shanelle **DESKS!!**	Group 3: Tiffany Cairo Jasmine **DESKS!!**	Group 4: Keyshawn Jade Dre **DESKS!!**
Group 5: Armani Nykira Koby	Group 6: Arryl Unique	Group 7: Tia Curtis Alisia **DESKS!!**	Group 8: Rayshon Remi **DESKS!!**

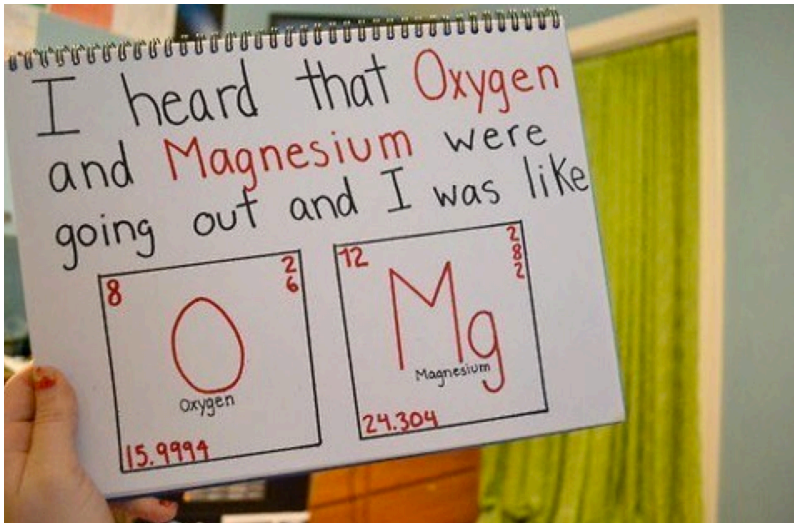
Agenda

- Catalyst
- Conversions Quiz
- POGIL
- Exit Slip



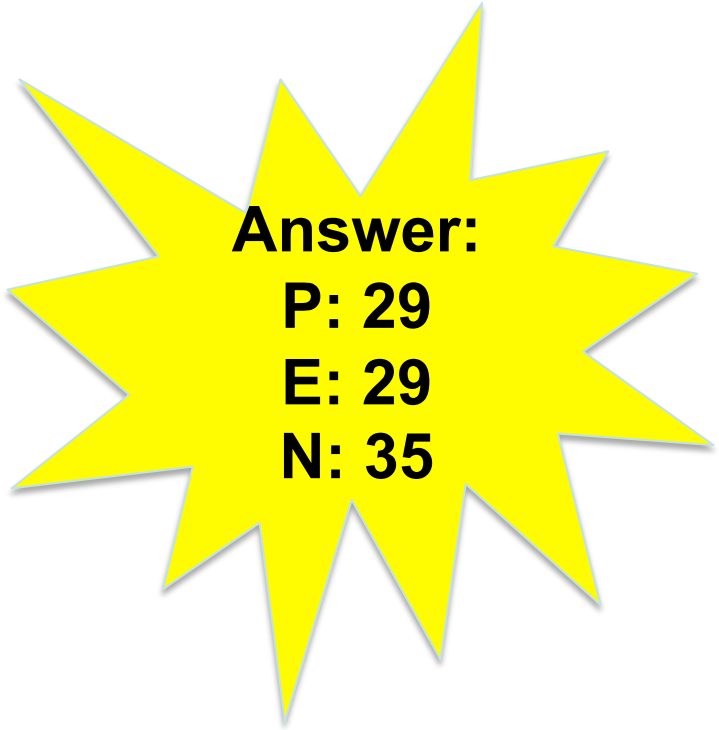
Announcements

- Tutoring after school *today!*
- Agenda problem #6 for homework!



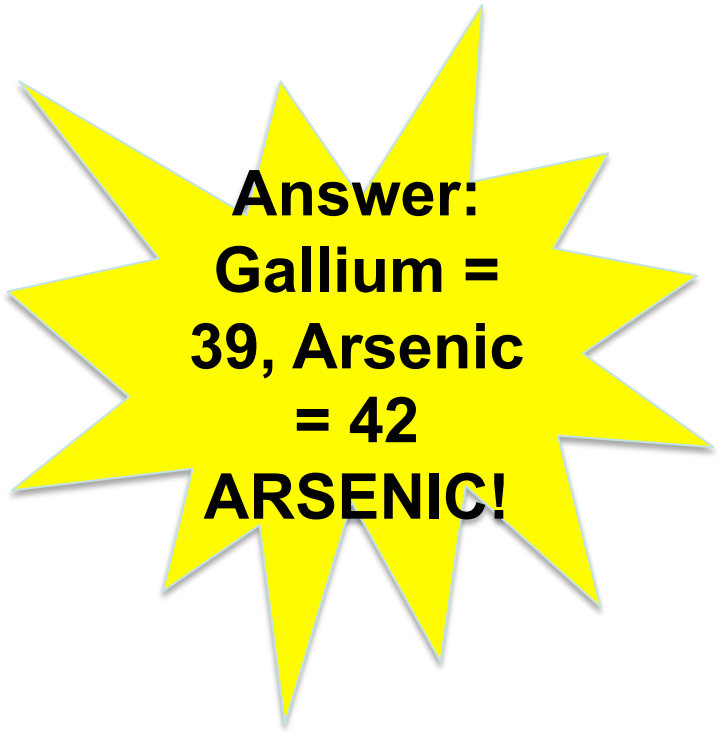
Whiteboard Practice

- How many protons, neutrons, and electrons does Copper have?



Whiteboard Practice

- Which has more neutrons: Gallium or Arsenic?



Whiteboard Practice

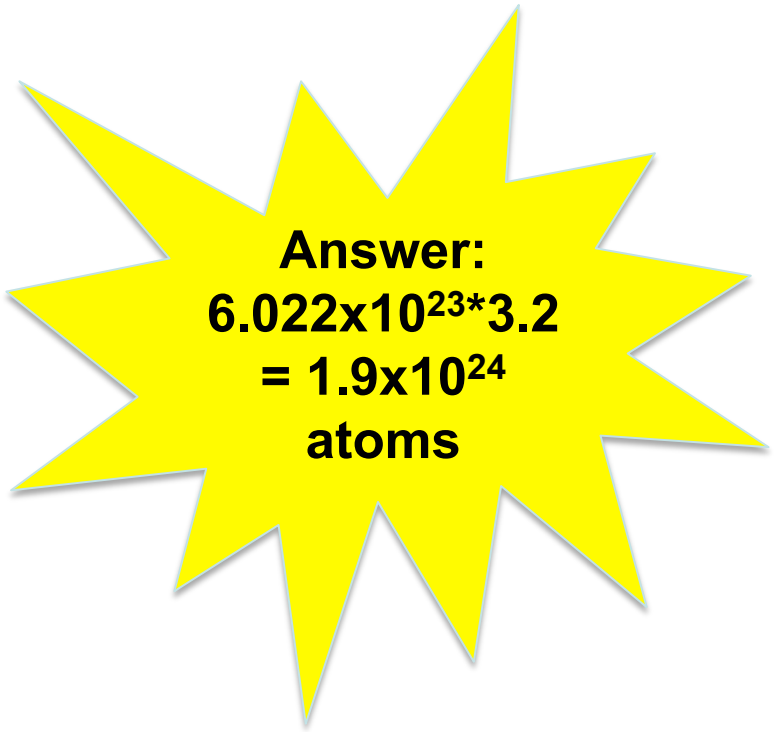
- Use a T-chart to solve for:
  - Number of nickels in $5

Whiteboard Practice

- How many atoms or molecules are in 1 mole of a substance?

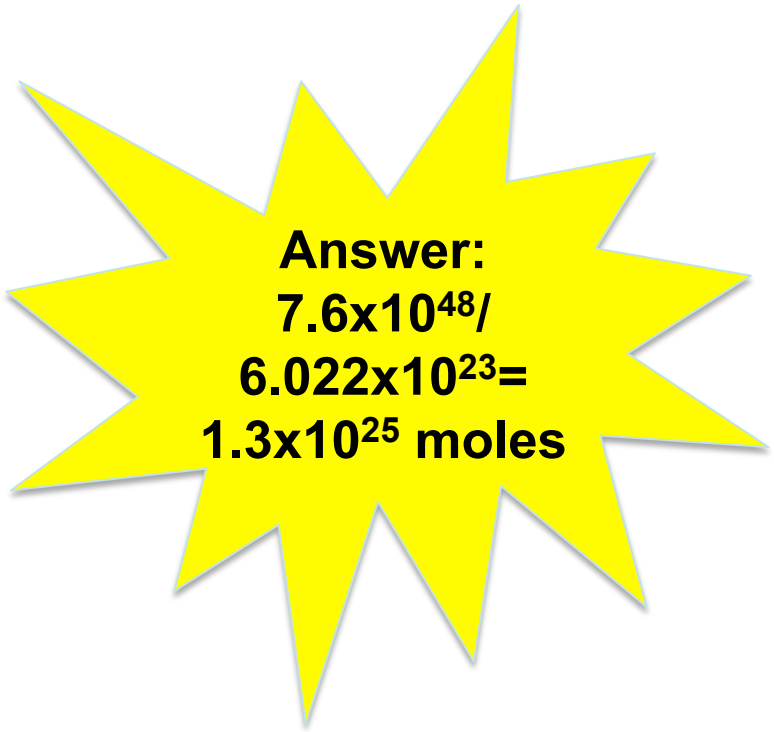
Whiteboard Practice

- How many atoms are in 3.2 moles of Sodium Chloride (NaCl)?



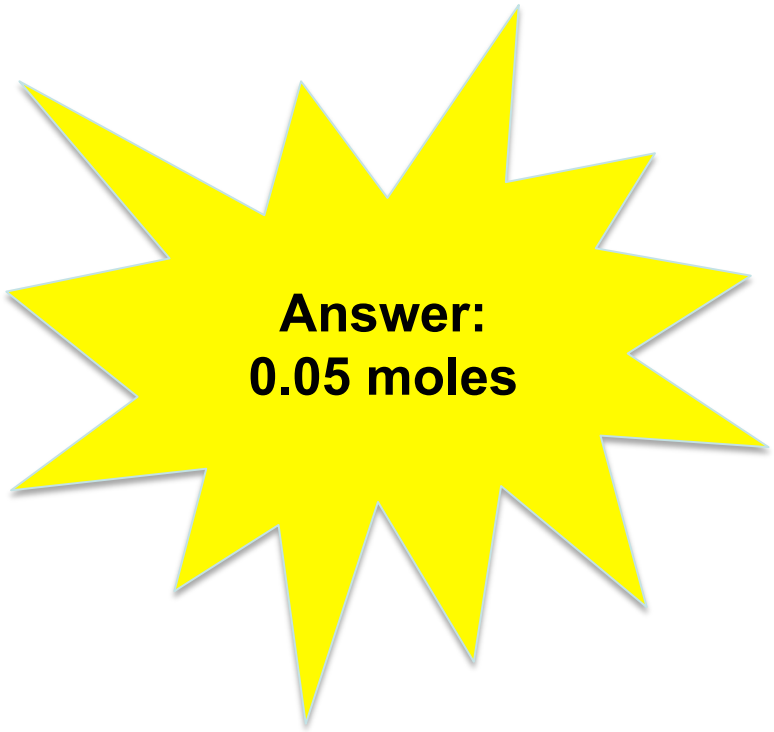
Whiteboard Practice

- How many moles are in 7.6×10^{48} atoms of sulfuric acid?



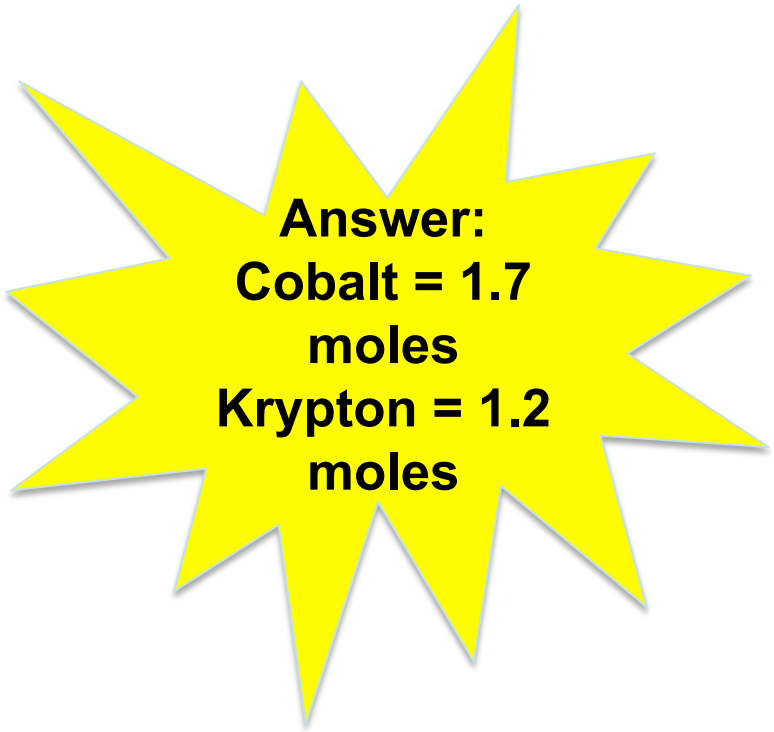
Whiteboard Practice

- How many moles are in 10.7 g of lead?



Whiteboard Practice

- Which has more moles: 100 g of Cobalt or 100 g of Krypton?



Week 10 Checkpoint

- **On a note card, answer of the questions below INDEPENDENTLY:**
  - **1. How many protons, neutrons, and electrons does antimony have?**
  - **2. How many molecules are in 8.6 moles of water?**
  - **3. How many moles are in 121 g of calcium?**
  - **4. How many grams are in 2.9 moles of NaOH?**

Before we end…

Any other ideas about calculating the number of atoms in a copper cube?