

# Grudge Ball

Spring Final Review: Semester 1 plus Chapter 8

# GRUDGE BALL RULES

Each team gets 10Xs

Teams will take a turn answering a review question. Correct answers get you 2Xs to take from any team (splitting is ok) and a shot at the hoop.

Successful shot from the:

1 point line = +1x (3 total)

2 point line = +2X (4 total)

3 point line = +3X (5 total)

# GRUDGE BALL RULES

Most Xs at the end of game wins.

If your team has no Xs left, can gain back Xs by answering the question correctly.

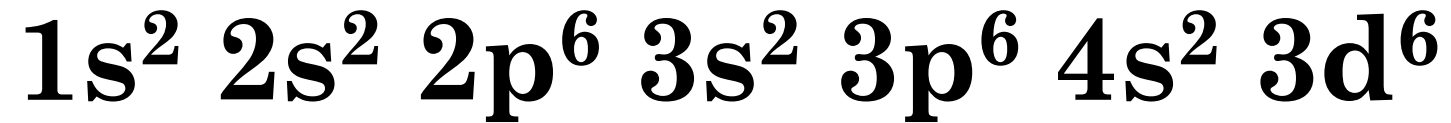
If team gets incorrect answer, random choice gets to steal the Q, so BE READY!

**#1** - How many atoms are in  
one molecule of  
 $\text{Mg}_3(\text{PO}_4)_2$ ?

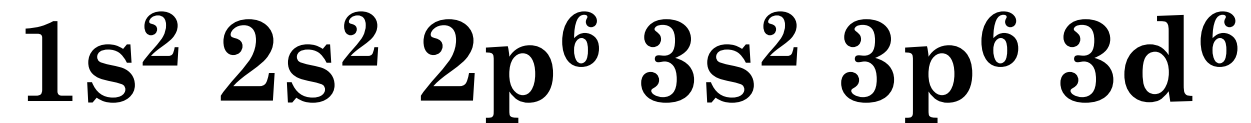
**#2** - What particle did  
Thompson discover and name  
his experiment that proved it.

**#3** - What is the empirical formula for the following molecule:  $\text{C}_{12}\text{H}_{22}\text{O}_{11}$  ?

**#4** - This is the electron configuration for what element?

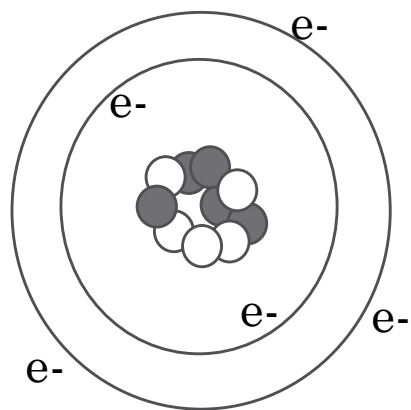


**#5** - This is the electron configuration for what ion?



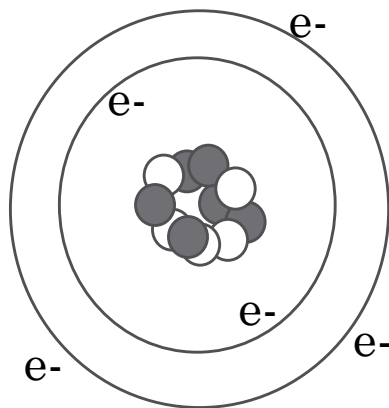


**#6** - Do any of the following atoms represent isotopes of Atom A? If so, which ones and why?



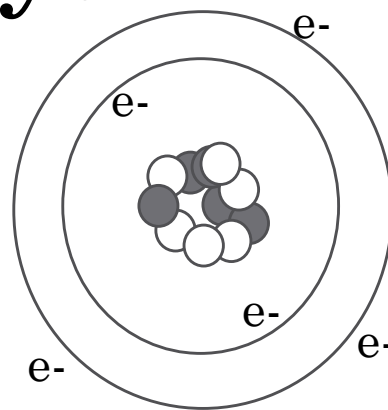
Atom A

5 protons  
5 neutrons  
5 electrons



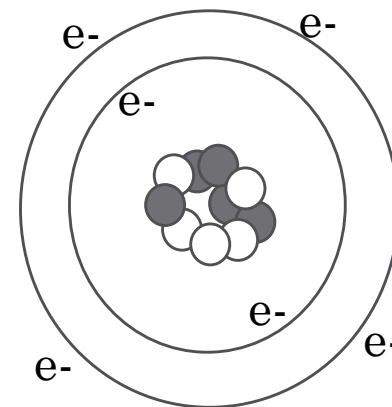
Atom B

6 protons  
5 neutrons  
5 electrons



Atom C

5 protons  
6 neutrons  
5 electrons



Atom D

5 protons  
5 neutrons  
6 electrons

**#7** - What is the percent composition of CH<sub>4</sub>?

**#8** - Give the name and write out the noble gas notation for the element below.



**#9** - Adipic acid contains 49.32% C, 43.84% O, and 6.85% H by mass. What is the empirical formula of adipic acid?

**#10** - Name the states of  
matter

**#11** - Name all phase changes and give an example of each.

**#12** - Draw a Diagram for Rutherford's Experiment and Explain what it proved about the atomic model.

**#13** - What does Hund's Rule say about electron orbitals?



**#14** - Name an element with similar properties to Magnesium.

**#15** - How do you calculate mass number?

**#16** - How many valance Electrons do the alkali metal elements have?

**#17** - Show the right energy level diagram for carbon and how many unpaired electrons does it have?

**#18** - Compare and Contrast a chemical and physical change and give an example of each.

**#19** - If you have 29.5 moles of sodium and 27.0 moles of chlorine gas, how many moles of sodium chloride can you produce?

**#20** - Classify all of the following  
Substances as Pure (element or  
compound) or a mixture  
(homogenous or heterogeneous).

Calcium

NEON

Cookies and Cream Ice  
cream

KOOL AID

Carbon Dioxide

H<sub>2</sub>O

Tap Water

SALAD DRESSING

**#21** - What is an alpha particle? Provide the symbol, mass, charge, and an example of an element undergoing an alpha decay.



**#22** - How many orbitals in the  
s,p,d,f shapes?

**#23** - How many valence electrons do the halogens have and what is the charge of their ions?

**#24** - What radioactive emission changes a proton into a neutron?

**#25** - The half-life of thorium-227 is 18.72 days How many days are required for three-fourths of a given amount to decay?

**#26** - What radioactive emission changes a neutron into a proton?

**#27** - How many protons and neutrons are in the nuclei of Tl-204 atoms?

**#28** - What does the Pauli  
Exclusion Principle say?

**#29** - How many unpaired electrons are in gold?



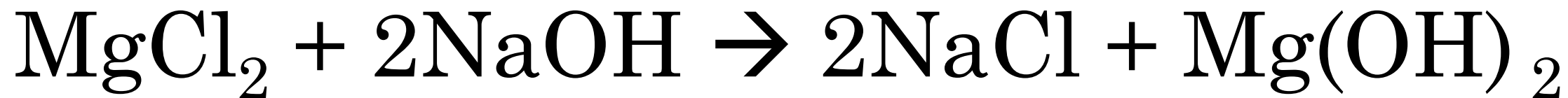
**#30** - Magnesium chloride reacts with sodium hydroxide. Predict the products, identify what type of reaction is taking place, and balance the reaction.

**#31** - Neutron initiated fission of U-235 results in the release of 4 beta particles, the formation of Sr-90 and the release of another nucleus. What is the other nucleus?

**#32** - What is the highest energy level in the electron configuration below.



**#33** - 2.5 grams of  $\text{MgCl}_2$  is used in the following reaction. How many grams of sodium chloride can you make?



**#34** - What is nuclear fission?

**#35** - A substance is known to have a density of  $1.39\text{g/ml}$ . If you have  $10\text{g}$  of this substance, what volume in L would you have?

**#36** - Which element might form a ion  
by losing electrons from the s and d  
orbitals      F, S, Li, Ti

**#37** - How many decigrams are in 437 kg?  
Write in scientific notation!



**#38** - How many significant figures are in the following values?

**612 kg**

**0.00067 ml**

**309.4 g**

**#39** - What is the atomic radius and its trend on the periodic table? Explain

**#40** - Order these elements from  
smallest to largest?

Se,      S,      Cl      Na

**#41 - Of the elements in the alkaline earth metals which has the highest electronegativity**

**#42 - Why does it take less energy to remove an electron as you move down a group?**

**#43** - Describe the trend for reactivity of halogens.

**#44** - What is the sum of the charges from the following atoms when they form ions?  
Calcium, nitrogen, and strontium

**#45** - What is the molar mass for the hydrocarbon





**#46** - Which molecule has covalent bonding and does not require a double or triple bond?  
 $\text{CO}_2$ ,  $\text{CO}$ ,  $\text{N}_2$ ,  $\text{Cl}_2$

**#47** - What is the formula for copper (IV) sulfate?

**#48** - What is the name of the compound  
 $\text{SrO}$ ?

**#49** - What type of bond forms between two non metals share electrons?

**#50** - What happens to the electrons during a metallic bond?

**#51** - Draw the Lewis dot structure for  $\text{BrO}_3^-$

**#52** - Draw the Lewis dot structure for  
 $\text{CH}_4$

**#53** - What pathway must you take in order to convert grams of substance A to moles of substance B?



**#54** - What kind of reaction is taking place below?



**#55** - Sodium chloride comes apart. Name the type of reaction, predict the products, and balance the reaction.

**#56** - What kind of reaction is taking place below?

