NAME: **HONORS CHEMISTRY**

SECTION: Pairs Check/Share: Mixed Mole Problems

Directions:

1. Put both names on the paper.
2. The older partner does the even problems. The younger partner does the odd problems. Take turns answering the questions. As you work, explain how you are doing the problem while your partner listens.
3. After each problem, discuss the answer with your partner. If both partners agree on the answer, the solver initials the answer. If an agreement can’t be reached, both partners raise their hands to get the teacher’s attention.
4. When all the questions have been answered, make sure both papers have written out solutions (showing all the work) for all the questions. Then compare your answers with those of another group. If both pairs agree on the answers, circle the final answers and sign everyone’s paper.
5. Turn in the evaluation sheet when you have finished.
6. How many atoms are present in 0.300 moles of titanium?
7. How many atoms are present in 104 mol of tungsten?
8. How many moles of krypton are equivalent to 1.3 x 1016 atoms?
9. How many moles of carbon dioxide are equivalent to 6.311 x 1018 molecules?

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1. Calculate the molar mass for calcium phosphate.
2. Calculate the molar mass for tin (II) chloride.
3. Rutile, TiO2, is a mineral used in coloring glass. a) How many moles are present in a 4.2 g sample? b) Give the systematic for rutile.
4. Quartz has the chemical formula SiO2. a) How many grams are present in a 2.78 mole sample? b) Give the systematic name for quartz.

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1. A broad range of affordable semisynthetic penicillins and chephalosporins has been made possible by the use of the intermediate 6-aminopenicillanic acid (6-APA), which has the chemical formula C8H12N2O3S. Calculate the percent composition by mass of 6-APA.



1. Atorvastatin, which has the chemical formula C33H35FN2O5, is typically used for lowering cholesterol and has been shown to be effective in preventing cardiovascular disease. Atorvastatin has also shown promise in treating Alzheimer's disease and preventing melanoma and colon cancer. Calculate the percent composition by mass of atorvastatin.



1. How many grams of potassium bromide are needed to make 500 g of a 15.2% (m/m) solution?
2. In Earth's ecosphere, coronene, which has a molar mass of 300. g/mol, is considered a pollutant, but this hydrocarbon redeems itself as an ultraviolet phosphor for charge-coupled devices (CCDs). Coronene-coated CCDs on the Hubble Space Telescope provide valuable information about molecules in outer space. Coronene has also been observed on the surface of Saturn's moon Titan. Corenene contains 96.0% carbon and 4.00% hydrogen by mass. Determine the empirical and molecular (true) formula of coronene.
3. β-Carotene, one of several naturally occurring carotene isomers, is the most important of the A provitamins. It is widely distributed in the animal and plant kingdoms and is most abundant in yellow and orange fruits and vegetables such as mangoes, papayas, yams, and carrots. β-carotene, which has a molar mass of 536.85 g/mol, contains 89.49% carbon and 10.51% hydrogen by mass. Determine the empirical and molecular (true) formula of β -carotene.
4. A pharmacist prepares a solution by combining 25.7 g of dextrose with 848 g of water. What is the percent dextrose by mass in the solution?

The purpose of this assignment was to: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signatures:

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| Did I: | Circle the appropriate response: |
| Explain how I did the problems? | Always Sometimes Rarely |
| Listen while my partner explained? | Always Sometimes Rarely |
| Give my partner positive support? | Always Sometimes Rarely |
| Stay on task during the assignment? | Always Sometimes Rarely |
| Use encouraging and polite words? | Always Sometimes Rarely |
| Record my work on the paper? | Always Sometimes Rarely |
| Demonstrate an understanding of the material? | Yes No |

Comments: