**Conservation of Mass Worksheet**

1 ) The chemical reaction for making benzene from carbon and hydrogen is:

6 C + 3 H2 → C6H6

If 72 grams of carbon and 6 grams of hydrogen react completely, how many grams of benzene will be formed? Explain your answer.

1. Do you think the law of conservation of mass has anything to do with the reasons why we need to balance equations? Explain.
2. When the tank of my car is empty, I fill the tank with about eight gallons of gas. This much gas weighs approximately 35 kilograms. However, when it's time to refill my car again, I don't have to remove 35 kilograms of product from my car. What has happened, and does it violate the law of conservation of mass? Explain.
3. Many drug companies make protease-inhibitor drugs that stop the replication of HIV. These drugs cost thousands of dollars because making them is very inefficient —a typical yield is 2%! Does this violate the law of conservation of mass, or is there a better explanation?