

HW 12 – January 17- mass conservation

1. Aeronauts took 2 kg of food on their hot-air balloon. How did the mass of the balloon with the aeronauts changed after all the food was eaten?
2. Red copper (Cu) powder (6.4 g) is mixed with the yellow powder of sulfur (S) (3.2 g) and heated. The obtained black powder does not contain red copper particles or yellow sulfur particles. What is the mass of the black powder obtained in the reaction? Write down the chemical equation (see HW 11 if you need help with the equation).
3. 60 g of iron sawdust is heated with 32 g of sulfur powder. From the obtained dark brown crystals 4 g of iron is removed with a magnet.
 - a) What is the mass of the brown crystals?
 - b) Can the non-reacted (remaining) sulfur particles be detected in the brown crystals?
 - c) Write down the chemical equation. Assume valence (II) for both Fe and S. See HW9 for detailed valence and molecular formula reminder. E.g. for Fe(III) and O (II) we can write down a formula by placing the valence above the element symbol and cross-descending it as an index in the following way:

