

HW 1

1. Imaging you turn a) stone into sand, b) oxygen to ozone, c) ice to vapor – in what case do you do a chemical transformation (chemical reaction)?
2. Find two mixtures in the following list: a) oxygen, b) ozone, c) river water, d) water in the clouds, e) kitchen salt, f) air, g) sugar.
3. Which one of the following expressions does not make sense: a) molecule of torpeniol, b) molecule of air, c) molecule of ozone, d) molecule of water?
4. Which one in the following list is a compound: a) carbon dioxide solution in water, b) carbon dioxide, c) oxygen, d) nitrogen, e) ozone
5. *A molecule of aspirin is composed of 9 atoms of carbon ("C"), 8 atoms of hydrogen ("H") and 4 atoms of oxygen ("O"). Its chemical formula can be written as $C_9H_8O_4$.
 - a. Aspirin burns in oxygen forming carbon dioxide (CO_2) and water (H_2O). If you imaging splitting a molecule of aspirin into atoms and adding oxygen atoms to it how many molecules of water and carbon dioxide can be obtained from a molecule of aspirin?
 - b. How many oxygen molecules (O_2) will be necessary to turn one molecule of aspirin into carbon dioxide and water?