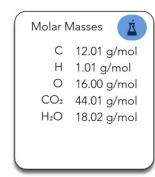# Empirical Formulas Through Combustion
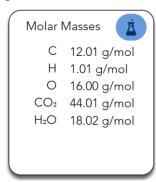
Question One

Combustion of a 12.501 gram sample of a hydrocarbon containing only C and H produced 38.196 grams of CO_2 and 31.279 grams of H_2O. What is the empirical formula of the hydrocarbon?

Molar Masses

C	12.01 g/mol
H	1.01 g/mol
O	16.00 g/mol
CO_2	44.01 g/mol
H_2O	18.02 g/mol

Question Two

What is the empirical formula of an organic compound containing only C, H and O if the combustion of a 28.4 gram sample produced 54.3 grams of CO_2 and 15.6 grams of H_2O?

Molar Masses

C	12.01 g/mol
H	1.01 g/mol
O	16.00 g/mol
CO_2	44.01 g/mol
H_2O	18.02 g/mol

Question Three

What is the *molecular* formula of an alcohol containing only C, H and O if the combustion of a 0.255 gram sample produces 0.561 grams of CO_2 and 0.306 grams of H_2O? The molar mass of the alcohol is approximately 120 g/mol.

Molar Masses

C	12.01g/mol
H	1.01 g/mol
O	16.00 g/mol
CO_2	44.01 g/mol
H_2O	18.02 g/mol