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| **Skill 10.01 Exercise 1** |
| For each of the following compounds, identify the number of each type of atom |
| P2O5 |
| Ca(C2H3O2)2 |

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| **Skill 10.02 Exercise 1** |
| What is the mass of 1 mole of each of the following? |
| 1. CH3OH |
| 1. Ca3(PO4)2 |



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| **Skill 10.03 Exercise 1** |
| How much in moles is 36.0 g of water (H2O)?   |  |  |  | | --- | --- | --- | | **Conversion factor** | | | |  | | | | **Given** | **Conversion** | **Asked to find (unknown)** | |  |  |  | |  |  |  | |
| How much in grams is 0.25 moles of carbon monoxide (CO)?   |  |  |  | | --- | --- | --- | | **Conversion factor** | | | |  | | | | **Given** | **Conversion** | **Asked to find (unknown)** | |  |  |  | |  |  |  | |
| How much in grams is 3.011 x 1023 molecules of nitrogen dioxide (NO2)?   |  |  |  | | --- | --- | --- | | **Conversion factor** | | | |  | | | | **Given** | **Conversion** | **Asked to find (unknown)** | |  |  |  | |  |  |  | |
| How many molecules are the in 8.5 g of hydrogen peroxide (H2O2)?   |  |  |  | | --- | --- | --- | | **Conversion factor** | | | |  | | | | **Given** | **Conversion** | **Asked to find (unknown)** | |  |  |  | |  |  |  | |

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| **Skill 10.04 Exercise 1** |
| What is the percent composition of each element in copper (II) sulfate, CuSO4 |
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| **Skill 10.05 Exercise 1** |
| A 2.43 g sample of magnesium (Mg) was heated until it was all converted to magnesium oxide (MgO). The mass of the final product was 4.03 g. |
| What is the percent composition of magnesium (Mg) and oxygen (O) in magnesium oxide (MgO) based on the data? |

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| **Skill 10.05 Exercise 2** |
| A hydrate is a compound that includes water trapped in its structure. A copper (II) sulfate pentahydrate (CuSO4•5H2O) is an example. When a hydrate is heated, the water is forced out of the structure. A sample MgSO4•xH2O is another example of hydrate. A 2.46 g sample of MgSO4•xH2O was heated to a final mass of 1.20 g. |
| How much water, in grams, was in the original compound?  What is the percentage of water in the original compound? |