Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 mole = 6.02 x 1023atoms/molecules

Copy table 10.1 on page 290 (Table 6.1 Old Book page 145)

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |

**Read through some sample problems on page 291 & 292 to help you with the following problems.**

How many moles are in 2.80 x 1025 atoms of silicon?

How many atoms are in 0.360 mol of Silver?

How many molecules are in 2.14 moles of Carbon Monoxide?

How many moles are contained in 4.65 x 1024 molecules of Nitrogen Dioxide?

How many oxygen atoms are in a representative particle of each of the following?

|  |  |  |
| --- | --- | --- |
| name | formula | # of oxygen atoms |
| Ammonium Nitrate |  |  |
| Lead II Sulfate |  |  |
| Diphosphorus Pentoxide |  |  |
| Potassium Chromate |  |  |

Molar Mass or Formula Mass (g/m) of a compound is determined by adding up the mass of everything in the compound. Determine the Molar Mass of the following:

|  |  |  |
| --- | --- | --- |
| Name | Formula | Molar Mass (grams/mole) |
| Ethane | C2H6 |  |
| Phosphorus Trichloride |  |  |
| Lead II Nitrate |  |  |
| Dinitrogen Pentoxide |  |  |
| Ammonium Carbonate |  |  |
| Strontium Cyanide |  |  |
| Sodium Bicarbonate |  |  |

List the 7 elements that are diatomic: HON VII

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |

Find the mass in grams of each of the following:

|  |
| --- |
| 0.720 mol of carbon monoxide: |
| 1.12 mol of potassium carbonate |
| 2.06 mol of sodium hydroxide |
| 1.56 mol of nitrogen gas\* |

Find the # of moles in each of the following:

|  |
| --- |
| 11.0 grams of Ethane |
| 15.4 grams of carbon tetrachloride |
| 333 grams of Tin II Fluoride |
| 67.8 grams of chlorine gas\* |

Page 300 (page 157 old book)

What are the conditions (temperature and pressure) at STP? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is Molar Volume (liters/mole) at STP? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| How many moles of sulfur trioxide are present if the volume is 33.6 L at STP? |
| What volume would 0.960 moles of CH4 occupy at STP? |
| What volume would 3.70 moles of \*Nitrogen gas occupy at STP? |

What volume would 3.20 x 10 26 molecules of CO occupy at STP?