equivalence statements

| units you want to convert between |  | where to get the equivalence statement |
| :--- | :--- | :--- |
| unit (e.g., meters) <br> with metric prefix | same unit without <br> metric prefix | $1 \mathrm{~km}=1000 \mathrm{~m}$ <br> $100 \mathrm{~cm}=1 \mathrm{~m}$ <br> $1000 \mathrm{~mm}=1 \mathrm{~m}$ <br> Consult textbook for the other metric <br> prefixes. |
| molecules | atoms in the same <br> molecule | use the subscripts from the molecular <br> formula |
| moles of X | individual X's | 1 mole X = 6.02×1033 individual X's <br> It's your job to insert an appropriate term <br> for the individuals (e.g., "atoms", <br> "molecules", "ions") |
| atoms or molecules <br> of X | amus of X | use masses from the periodic table |
| moles of X | grams of X | use the coefficients from the balanced |
| molecules of X | molecules of Y | chemical reaction that involves X and Y |

