Ch. 12: Stoichiometry 3: Mass-Mass Conversions Dr. Casagrande

Follow along as you view the video, "Stoichiometry Calculations II: Mass-Mass Conversions" on edpzzle.com and fill in the blanks as you go. (Also available at (http://youtu.be/hKThjKFEbtM)

- Stoichiometry & Mass
  - Problems that _____ are more realistic
    - We can measure mass directly
  - We will use molar mass to _____
  - The Mole-Mole conversions using _____

    _____ remain central to the calculations.
- Starting with mass
  - The process looks familiar (_____)
    - First identify _____ and _____
    - Select _____ with _____ from balanced equation
    - Next set up the calculation:
      - First multiply the mass of G by _____
      - Continue by multiplying by _____ _____

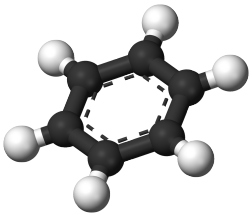
        _____
    - For the reaction $N_2(g) + 3\ H_2(g) \rightarrow 2\ NH_3(g)$, determine the number of moles of $NH_3$ produced by reacting 16.2 grams of $H_2$ with sufficient $N_2$.

- Ending with mass
  - First identify _____ and _____
  - Select _____ with _____ from balanced equation

- Again set up the calculations
  - First, multiply moles G by _____ _____
  - Next multiply by _____ _____
- For the reaction $N_2(g) + 3\ H_2(g) \rightarrow 2\ NH_3(g)$, determine the mass of $N_2$ required to fully react with 23.8 mol $H_2$.

- Starting & Ending in Mass
  - If both G and W are in mass, you must _____

    _____
  - For the reaction $4\ P(s) + 5\ O_2(g) \rightarrow P_4O_{10}(s)$, determine the number of grams of $O_2$ required to completely react with 39.2 grams of P.
    - Use Dimensional Analysis to guide you:
    - Multiply _____ to get _____
    - Multiply by _____ to get _____
    - Multiply by _____ to get _____
    - Note: if given mol G, _____
- Your Turn
  - Given the reaction for the combustion of benzene ($C_6H_6$),
    $$2\ C_6H_6(\ell) + 15\ O_2(g) \rightarrow 12\ CO_2(g) + 6\ H_2O(g)$$
    how many g $O_2$ are needed to fully combust 84.7 g benzene?



Benzene, $C_6H_6$

Reading: Read Section 12.2 pg. 360-363 in textbook