

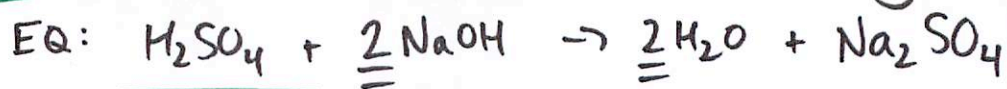
Notes: 5/20 Titration - neutralization reaction

$$\text{Moles}_{\text{ACID}} = \text{Moles}_{\text{BASE}}$$



You will be given one standard - (known molarity) Unknown
to titrate unknown - (unknown molarity) Goal: Find Molarity

ex) You titrate 25.0 mL of H_2SO_4 solution with 60.0 mL of 0.125 M NaOH . Find molarity of H_2SO_4 .



Known Standard: $\text{NaOH} = 0.125 \text{ M}$

Steps: ① Find moles of standard (moles = $M \cdot L$)

② run mole ratio to unknown

③ Divide $\frac{\text{moles unknown}}{L \text{ unknown}} = \underline{\underline{M \text{ unknown}}}$!

① $\text{mol NaOH} = 0.125 \text{ M} (0.060 \text{ L}) = \underline{0.00750} \text{ mol NaOH}$

② $\underline{0.00750} \text{ mol NaOH} \left(\frac{1 \text{ mol H}_2\text{SO}_4}{2 \text{ mol NaOH}} \right) = \underline{0.00375} \text{ mol H}_2\text{SO}_4$

③ $\frac{0.00375 \text{ mol H}_2\text{SO}_4}{0.025 \text{ L H}_2\text{SO}_4} = \underline{\underline{0.150 \text{ M H}_2\text{SO}_4}}$