CONCEPT: TITRATIONS: STRONG ACID–STRONG BASE

- This type of titration has either the strong acid or strong base act as the _____ or _____.
  - □ When a strong acid and strong base mix together use an **ICF (I_____, C_____, F_____) Chart**.

EXAMPLE: Calculate the pH of the solution resulting from the titration of 75.0 mL of 0.100 M $HBrO_4$ with 55.0 mL of 0.100 M NaOH.

STEP 1: Setup an ICF Chart with both strong species set as _____.

ICF Chart (Strong Acid-Strong Base)

	_____ (aq)	+ _____ (aq)	→ _____ ( )	+ _____ ( )
I_____				
C_____				
F_____				

STEP 2: Using the **INITIAL ROW**, place the given amounts in _____.

- □ In this ICF Chart we only care about the _____ & _____.

STEP 3: Using the **CHANGE ROW**, looking at the reactants subtract from their initial amounts by the _____ mole amount.

STEP 4: Using the **FINAL ROW**, determine the concentration of the remaining strong species.

- □ Divide its final _____ by the total volume used in the chemical reaction.

STEP 5: Recall, $[H^+]$ and $[OH^-]$ are _____ to the concentration of strong acids and bases, respectively.

- □ If strong acid remains use its ____ to find pH.
- □ If strong base remains use its ____ to find pOH.

pH & pOH Formulas

$pH + pOH = 14$	$pH = -\log[H_3O^+]$	$pOH = -\log[OH^-]$

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PRACTICE: Calculate the pH of the solution resulting from the mixing of 175.0 mL of 0.250 M HNO_3 with 75.0 mL of 0.200 M $Ba(OH)_2$.

PRACTICE: Calculate the pH of the solution resulting from the titration of 110.0 mL of 0.300 M HCl with 330.0 mL of 0.100 M LiOH.