

Acid Base Chemistry

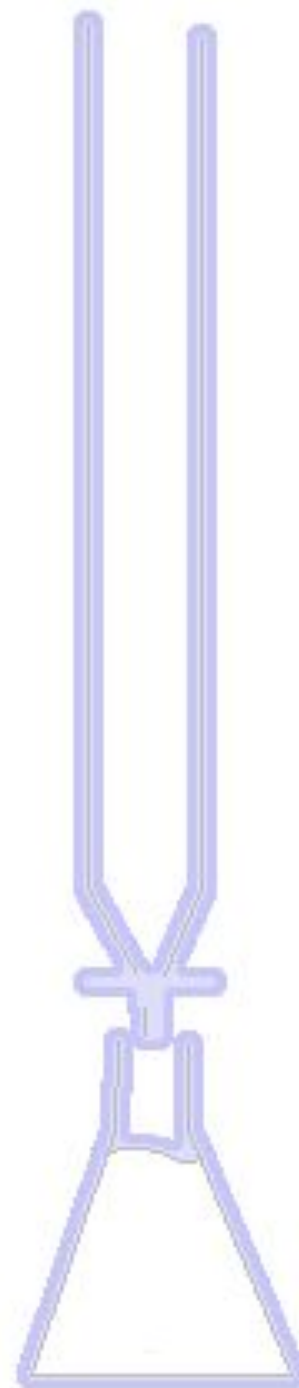
1. Foundation knowledge
2. The pH scale
3. The pH of Water
4. Acids
5. Bases
6. Acid base titrations
 - a. pH curves and suitable indicators
 - b. Using pH curves to find K_a values
7. Relative acidity and basicity – competition for H^+

ACID BASE TITRATIONS

We are learning to:

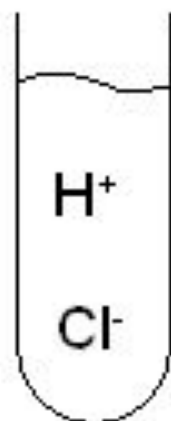
Draw pH curves

Choose indicators



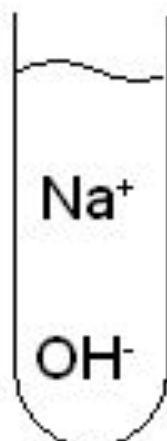
What reactions occur between acids and bases?

STRONG ACID

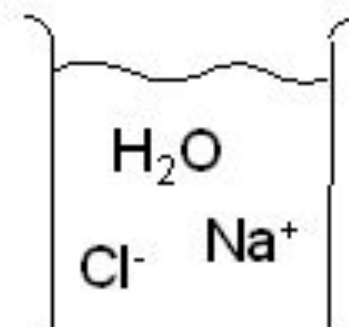


+

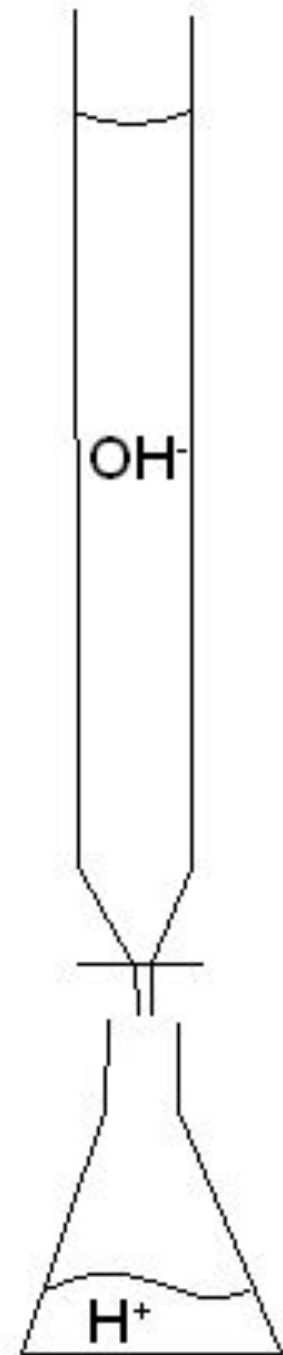
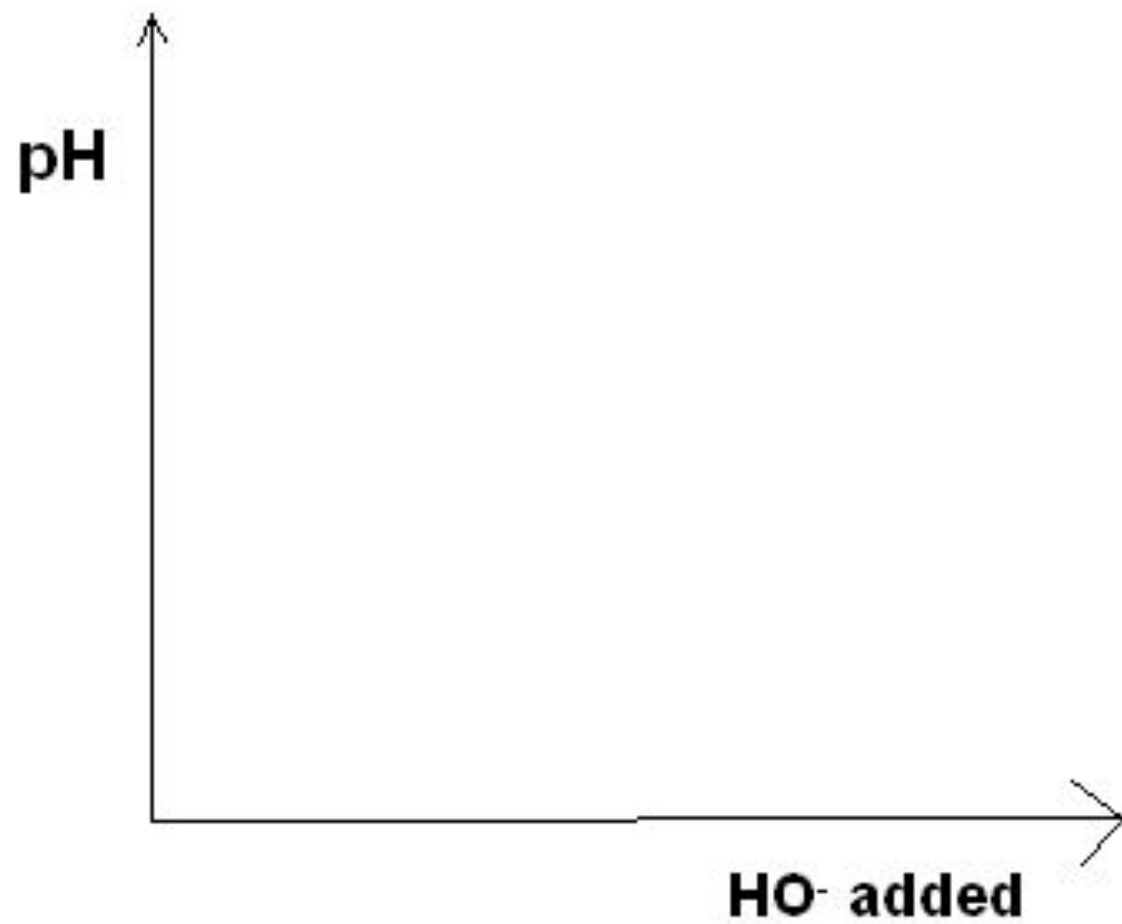
STRONG BASE



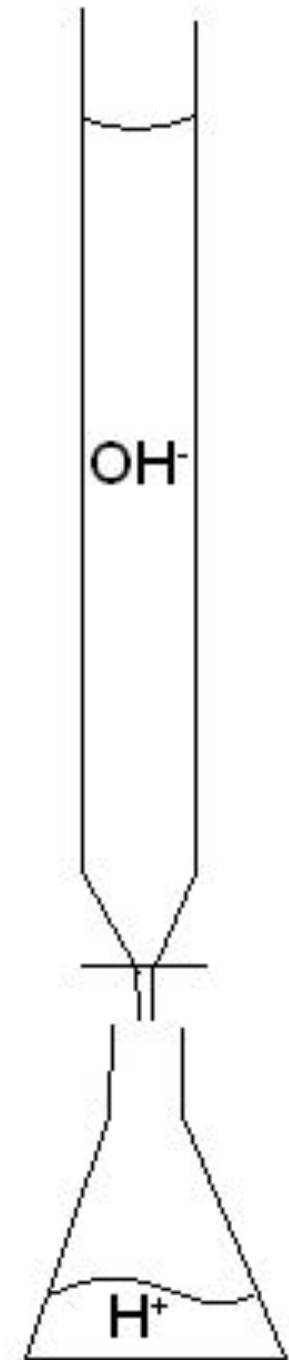
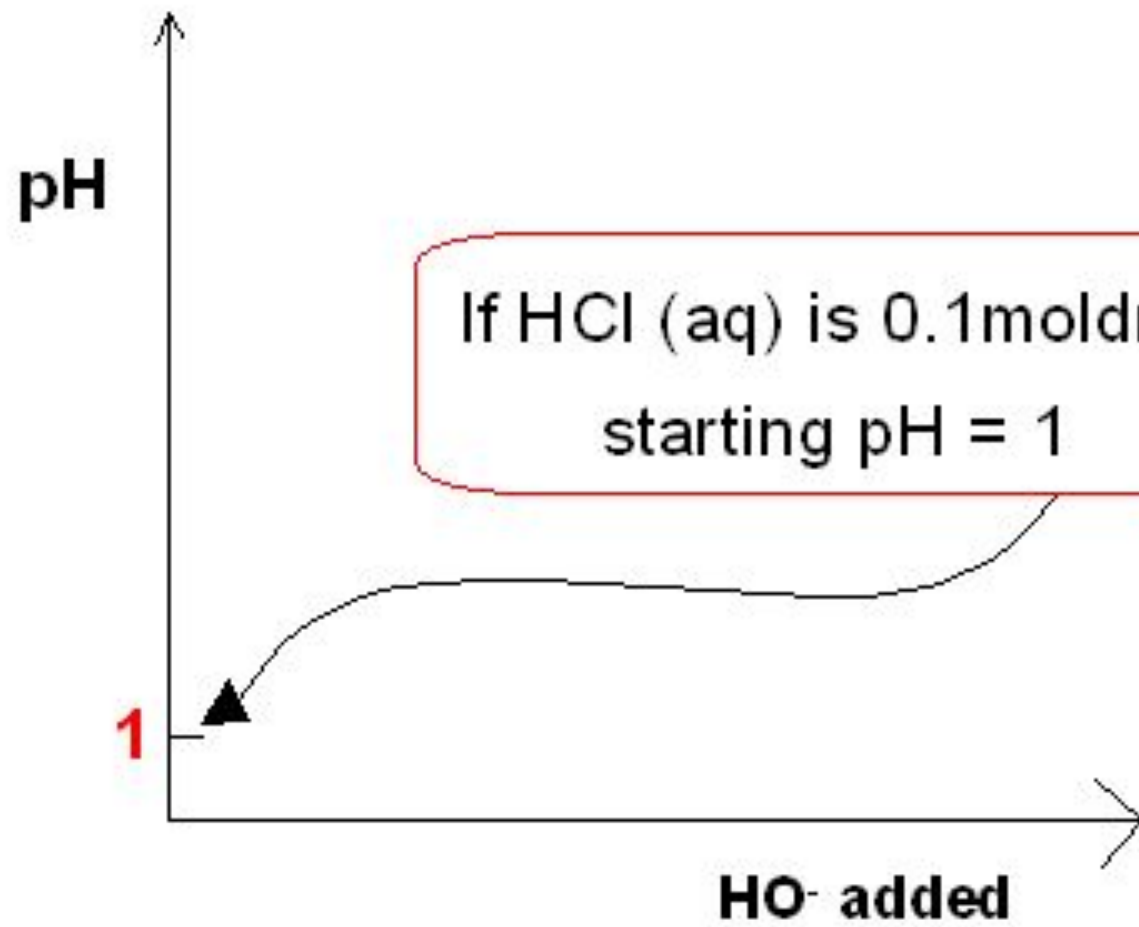
**COMPLETE
REACTION**



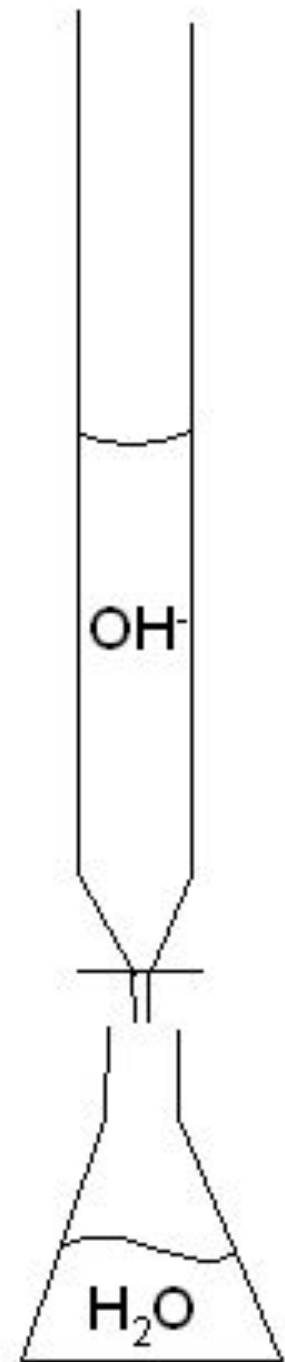
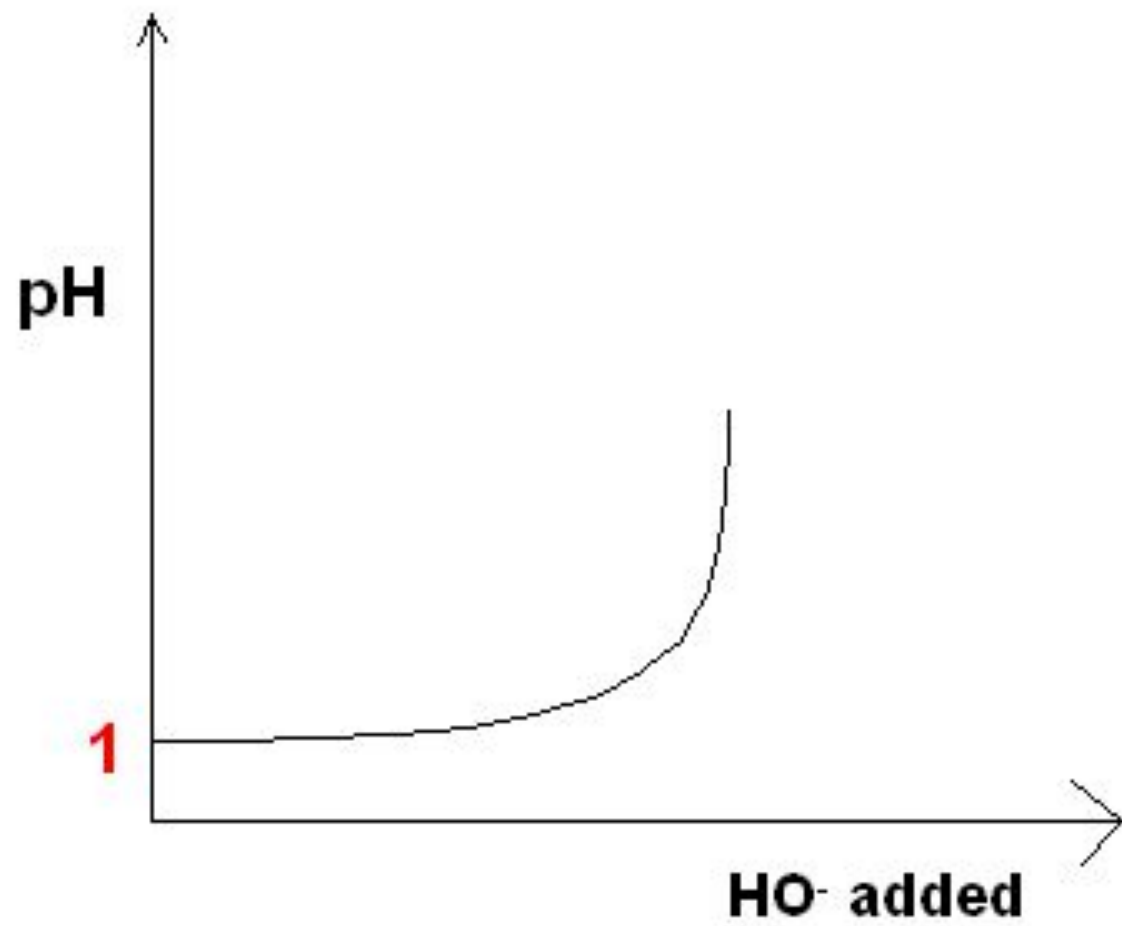
STRONG ACID + STRONG BASE



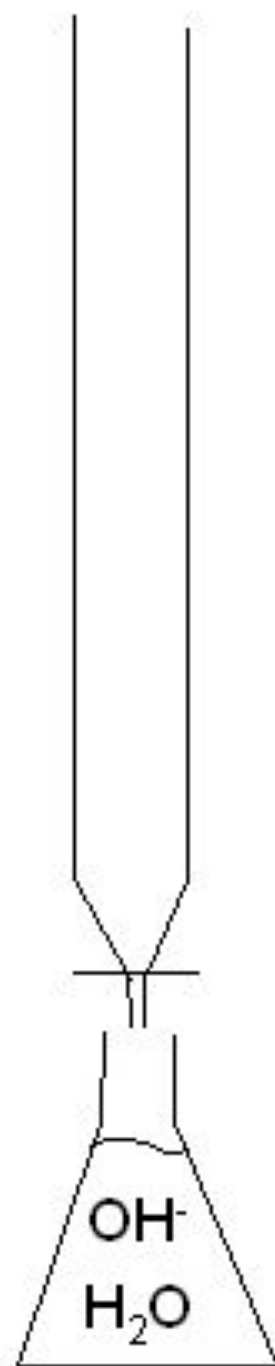
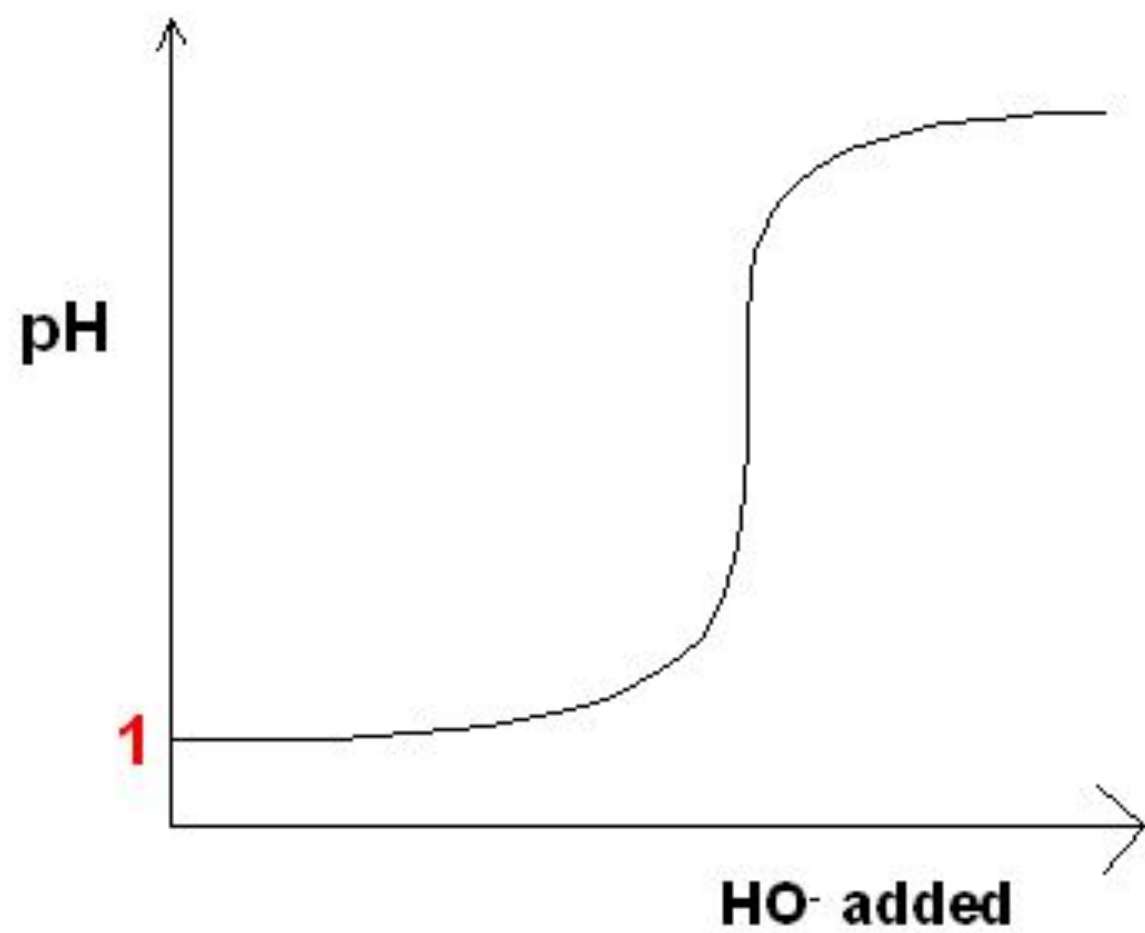
STRONG ACID + STRONG BASE



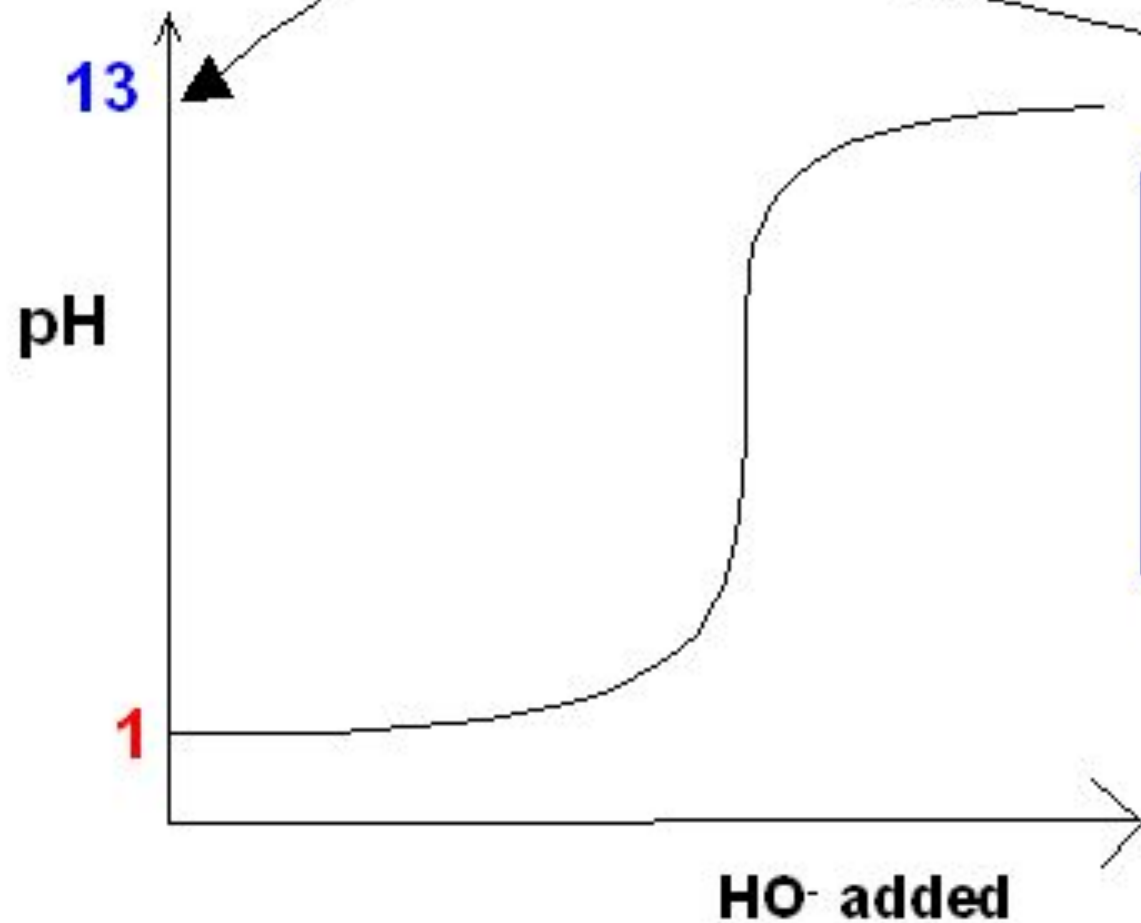
STRONG ACID + STRONG BASE



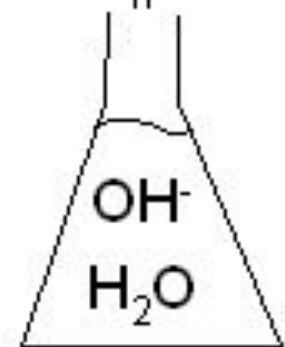
STRONG ACID + STRONG BASE



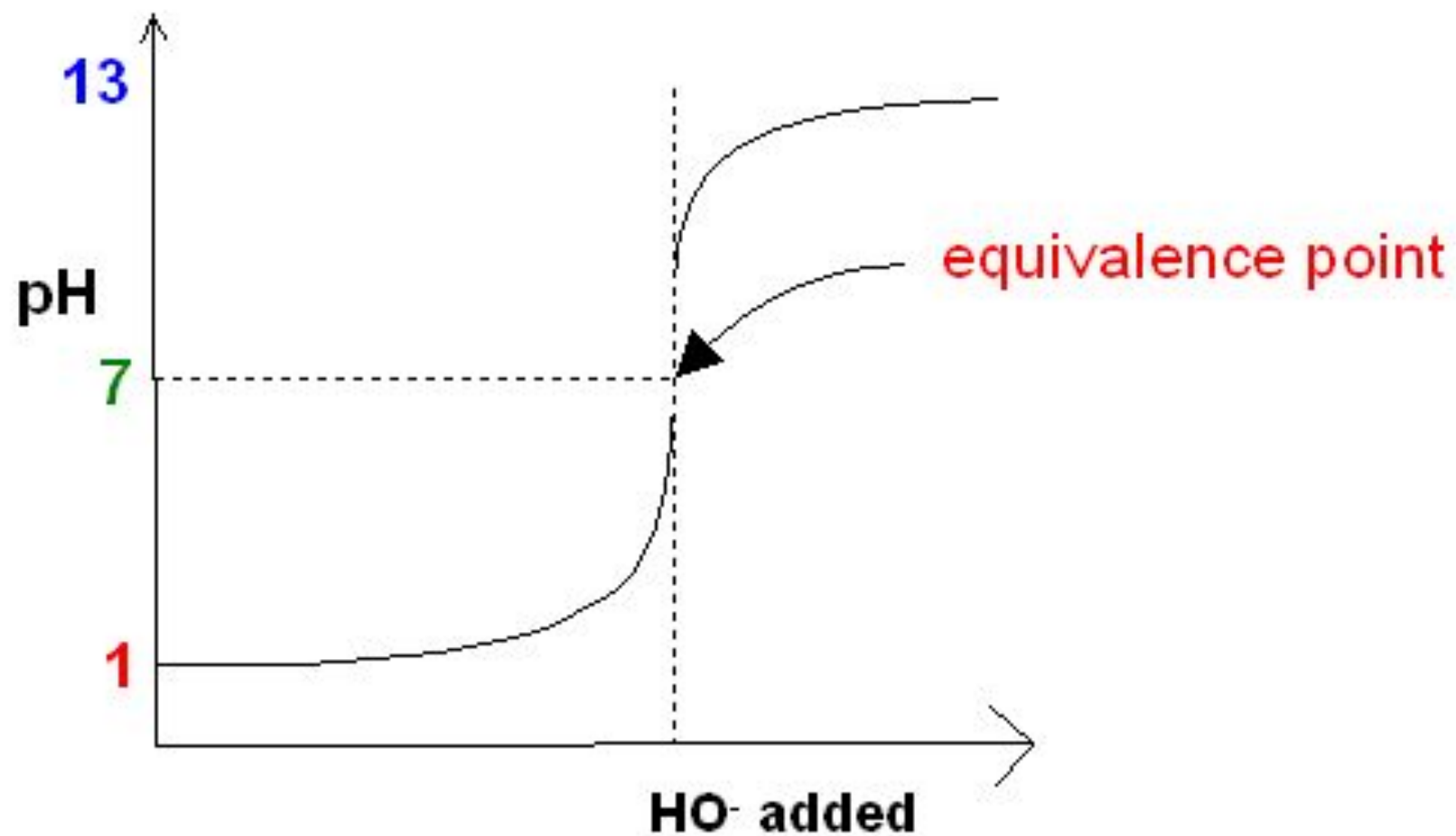
STRONG ACID + STRONG BASE



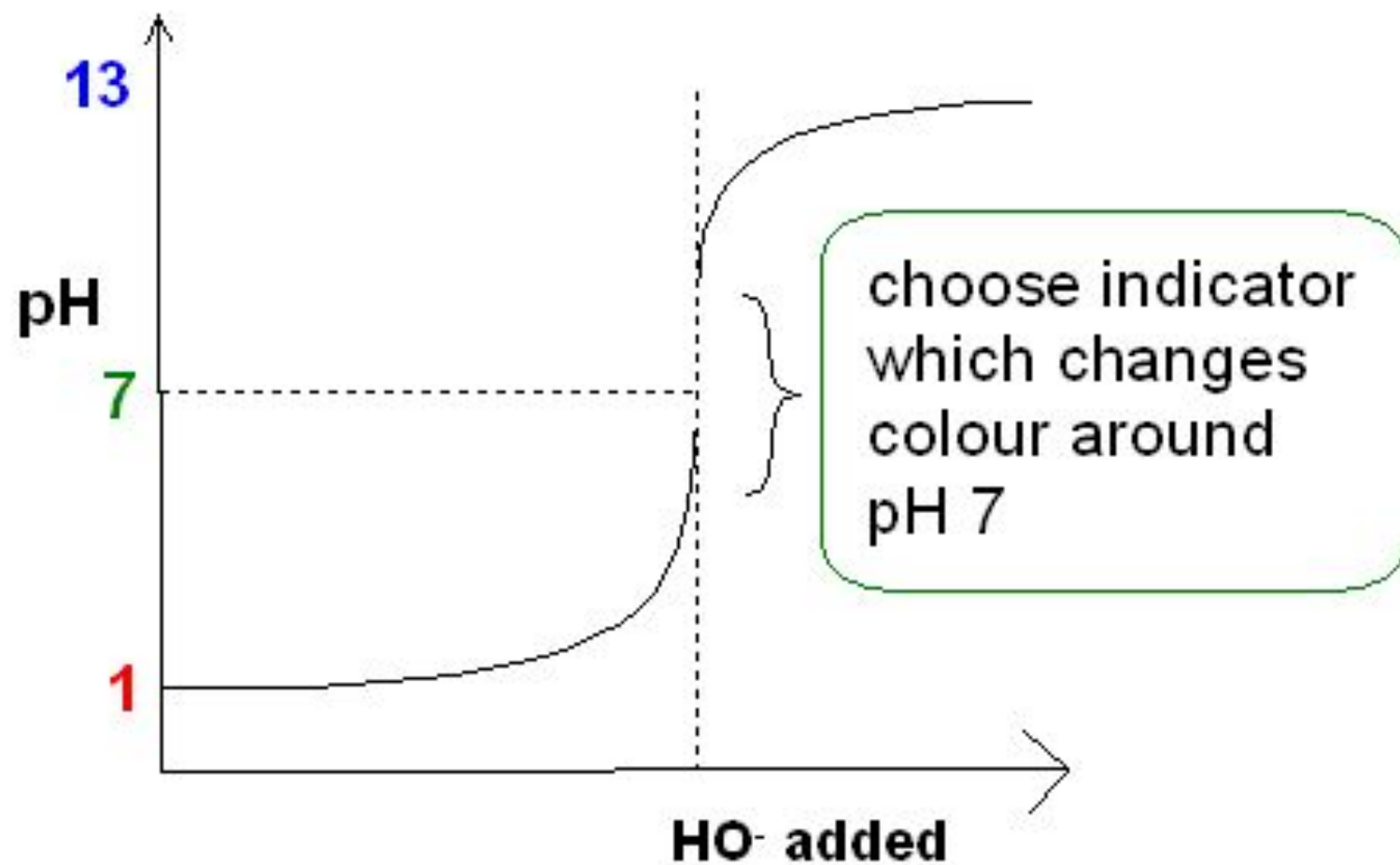
If NaOH (aq) is 0.1 mol dm^{-3}
final pH = 13
(slightly under due to dilution)



STRONG ACID + STRONG BASE



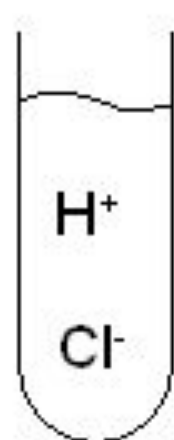
STRONG ACID + STRONG BASE



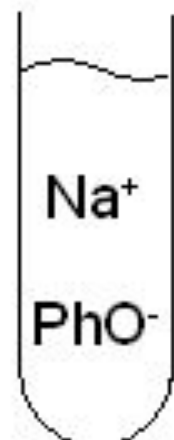
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STRONG ACID

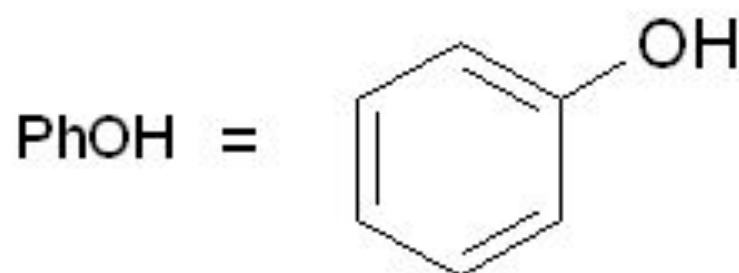
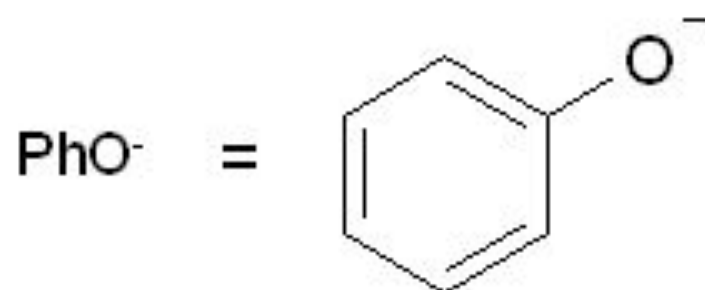
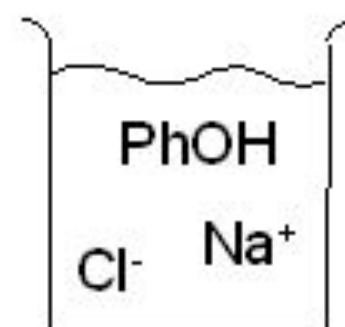
WEAK BASE



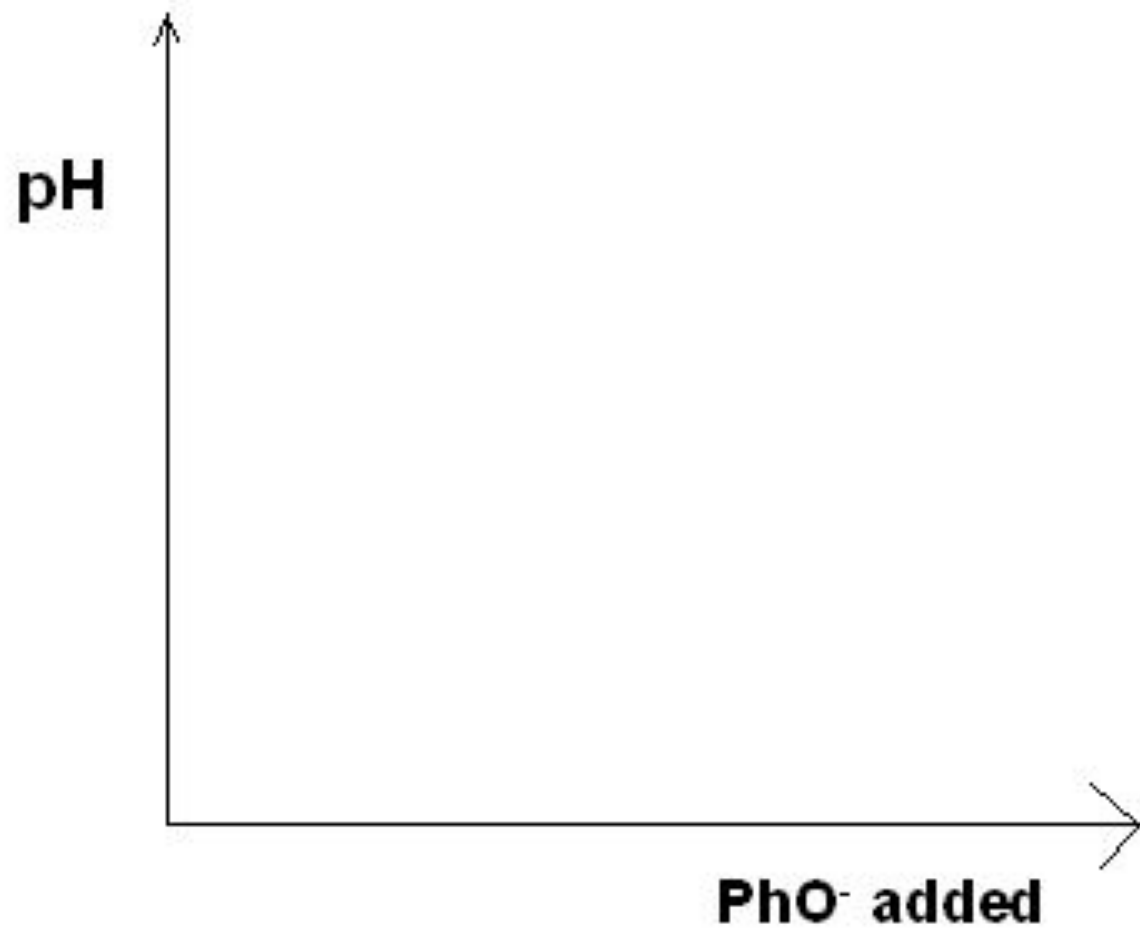
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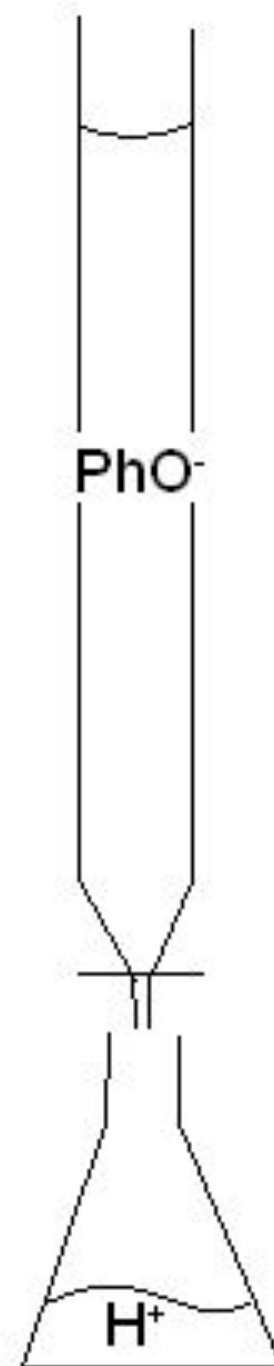
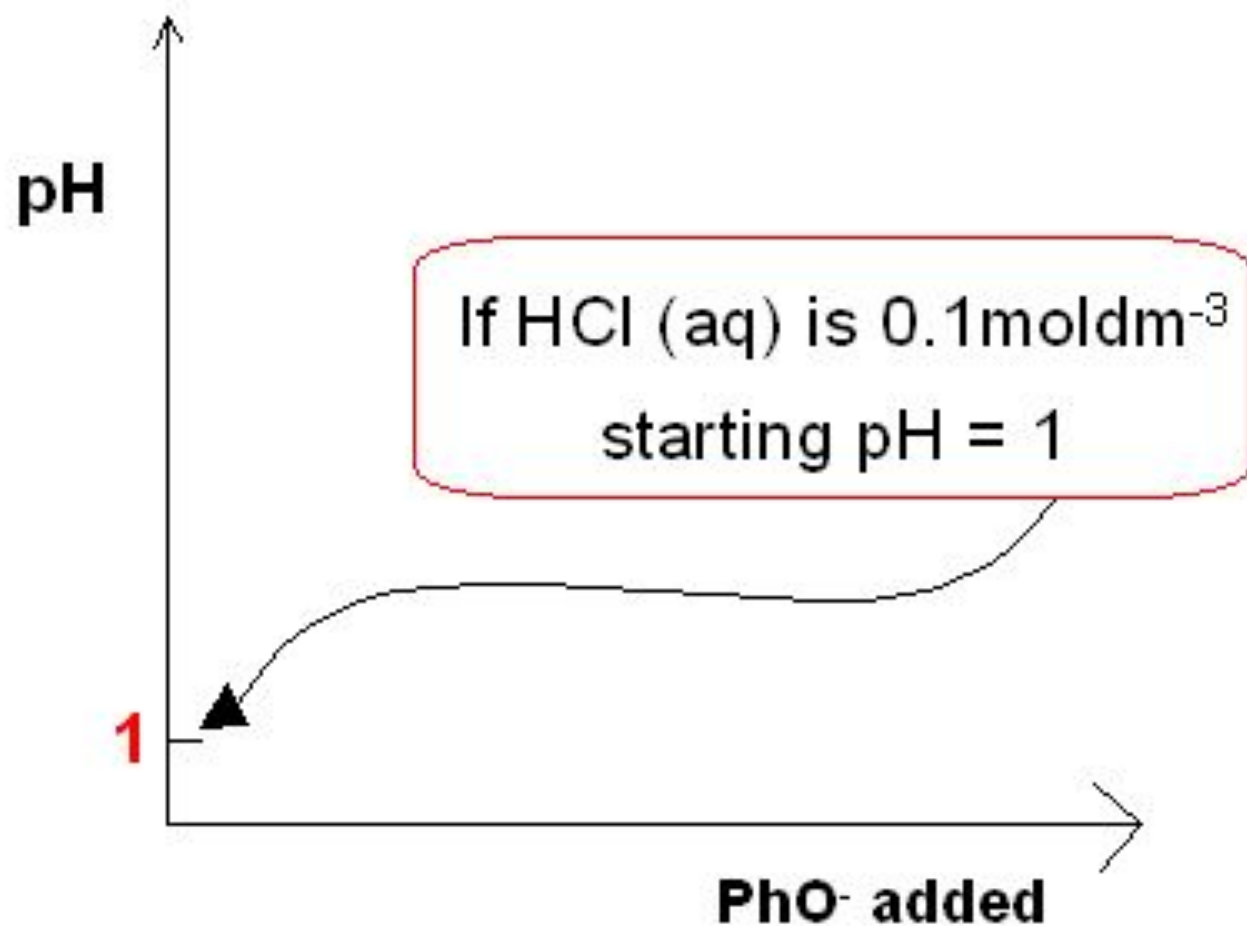
**COMPLETE
REACTION** 



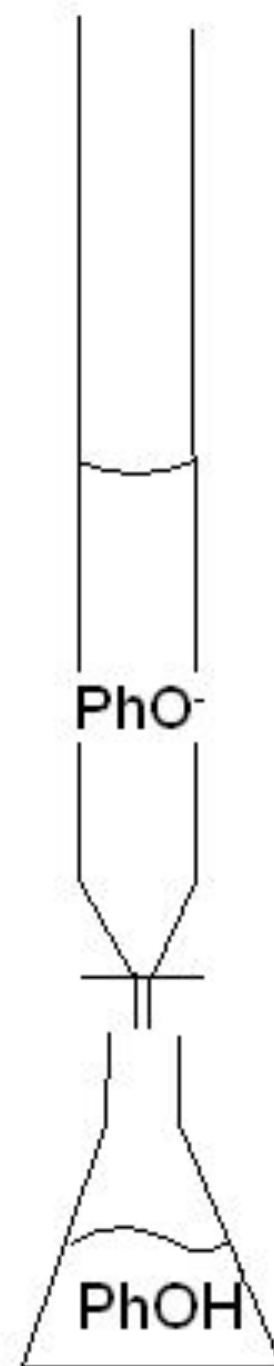
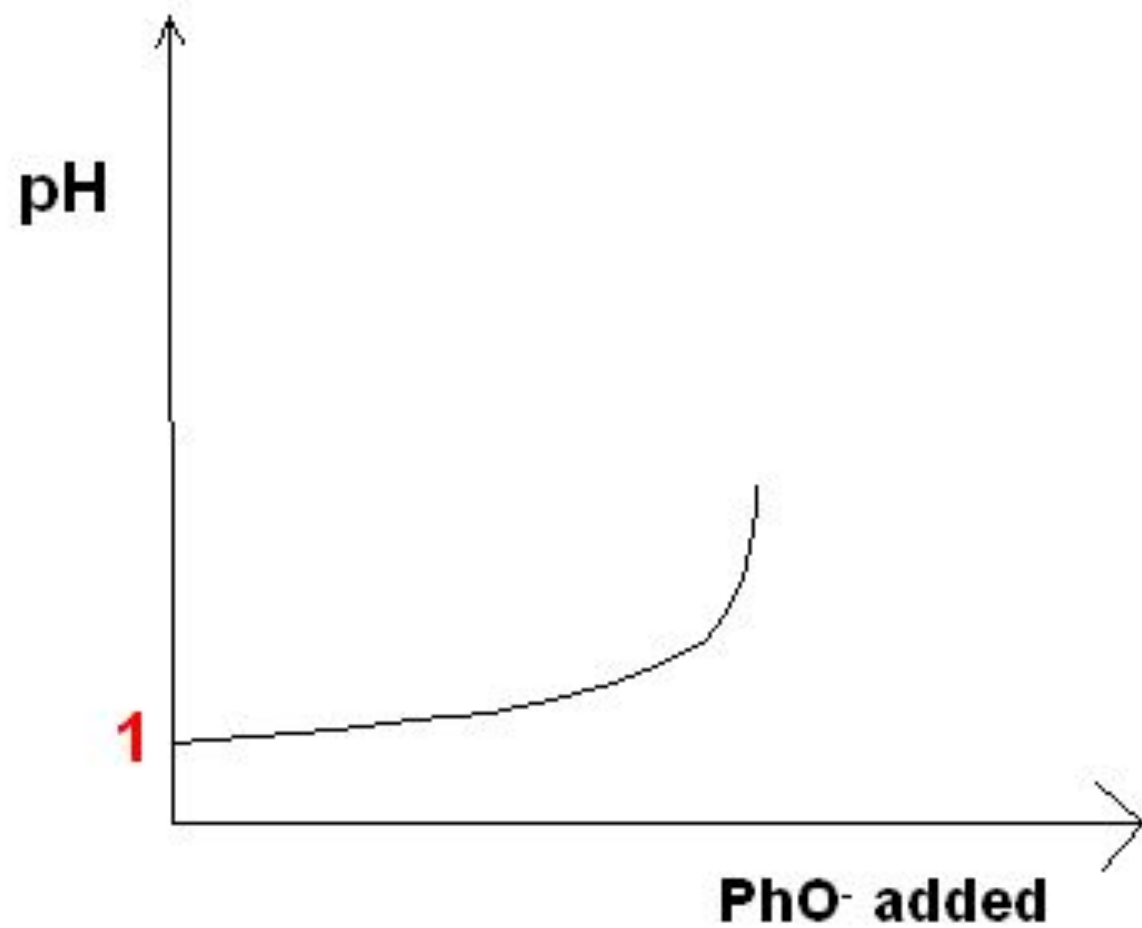
STRONG ACID + WEAK BASE



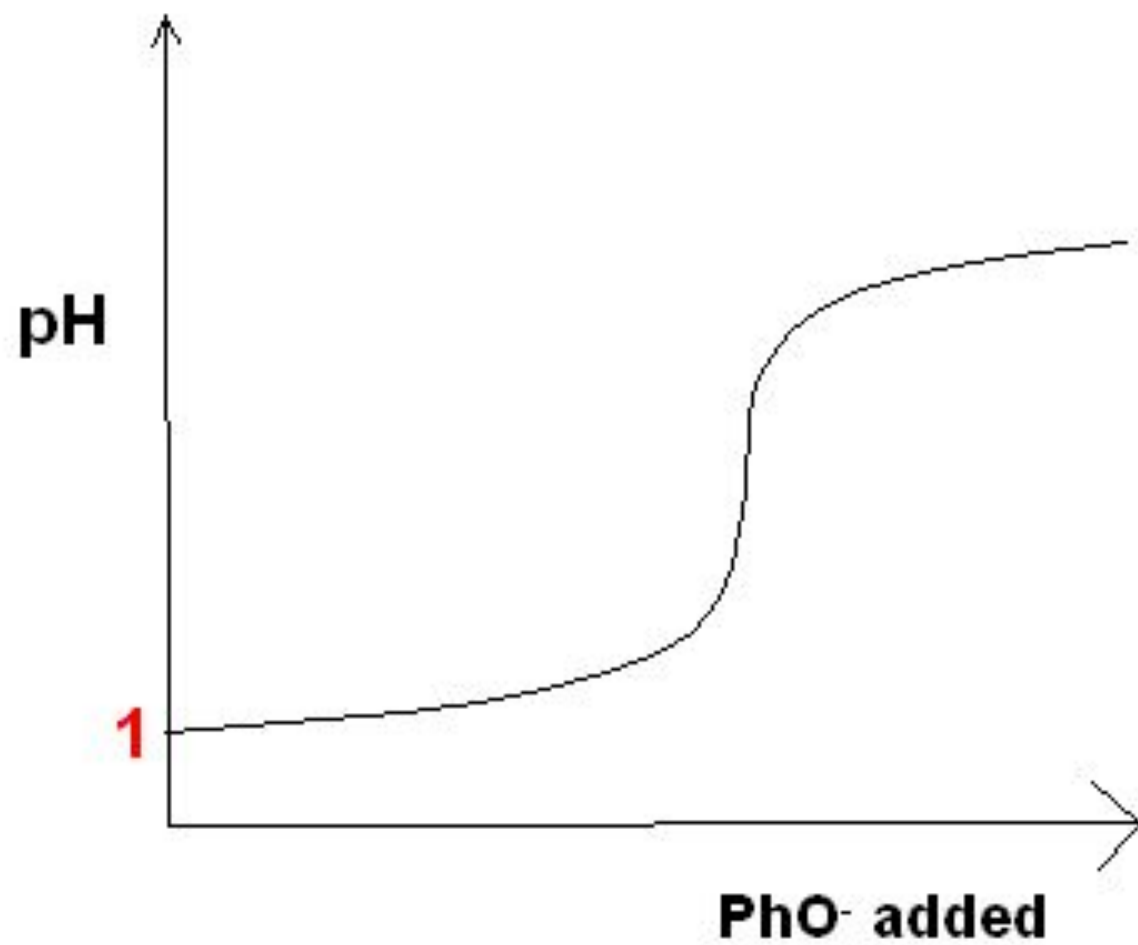
STRONG ACID + WEAK BASE



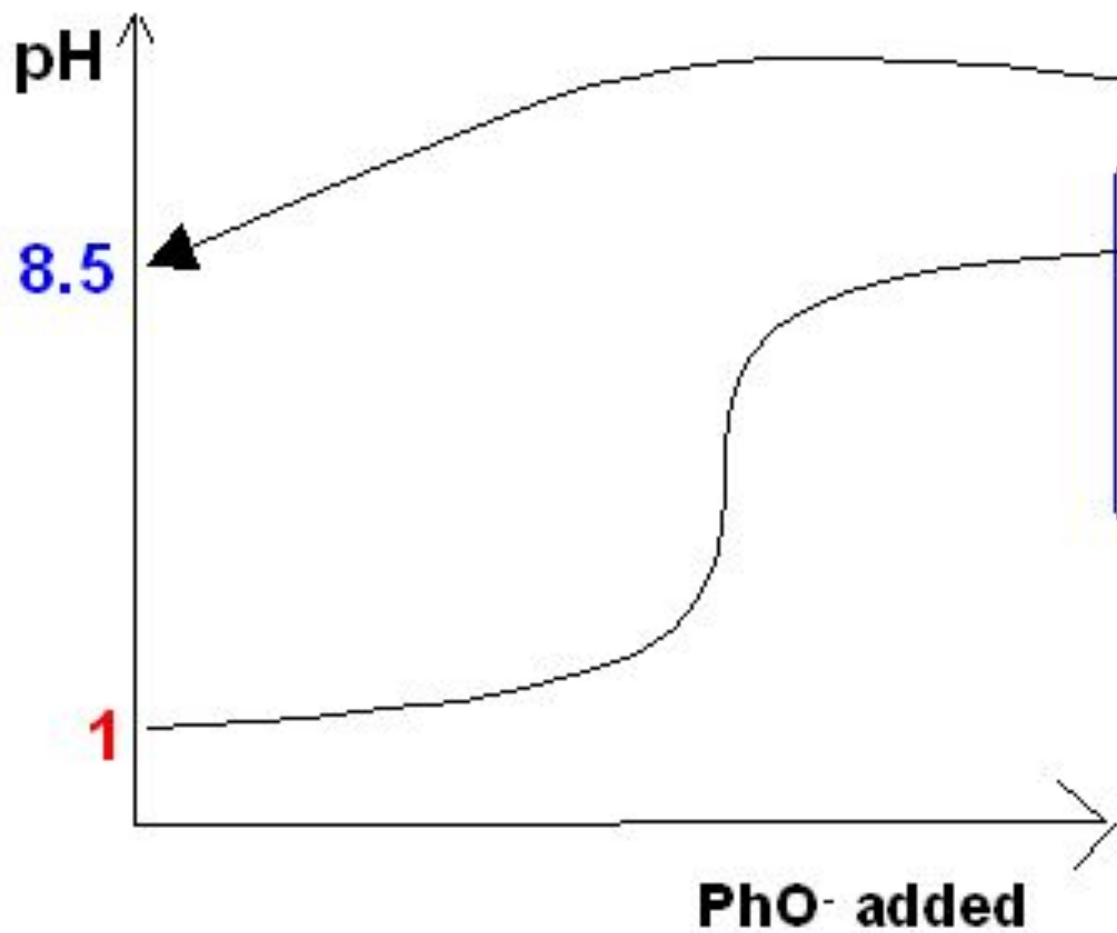
STRONG ACID + WEAK BASE



STRONG ACID + WEAK BASE



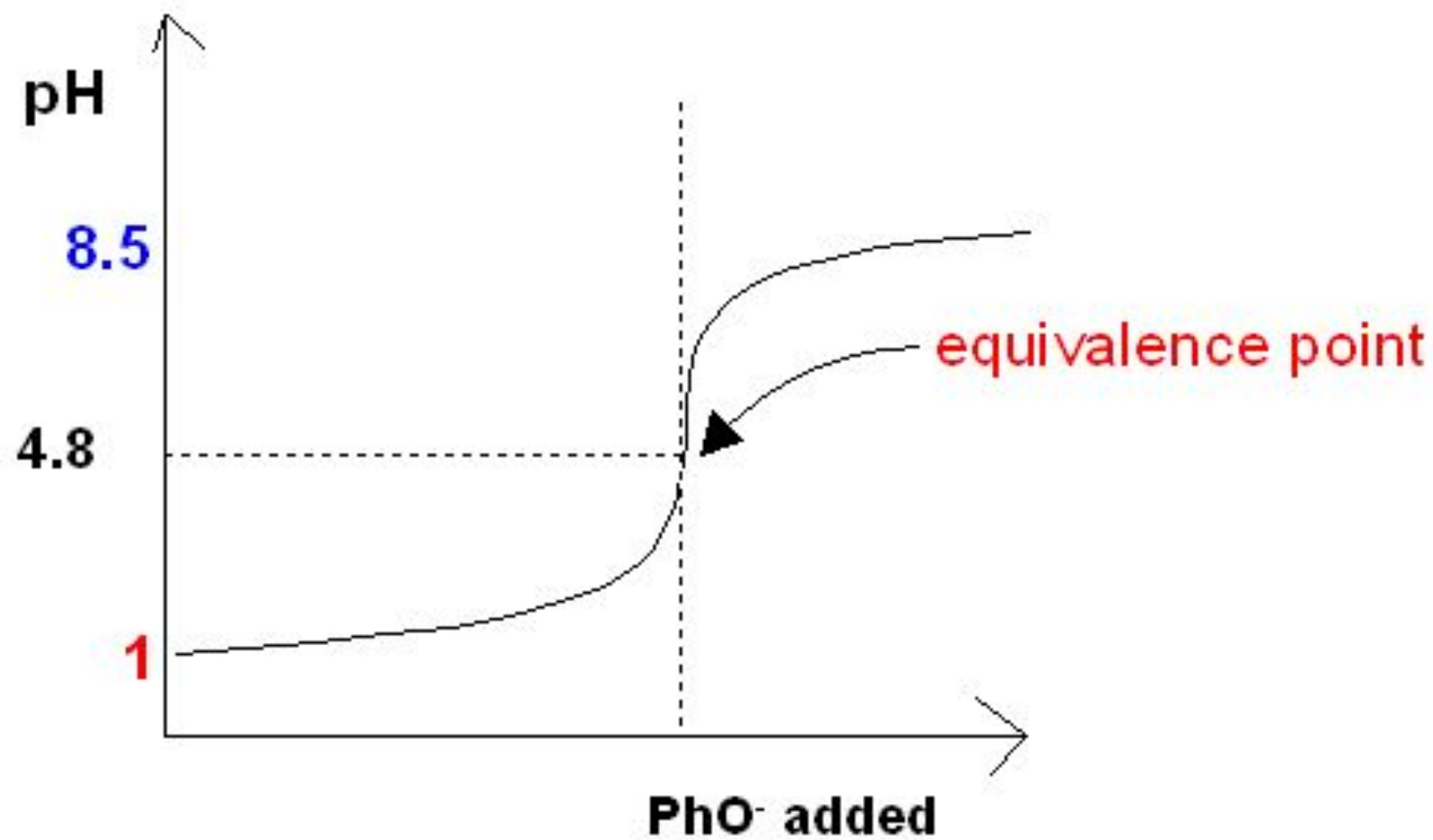
STRONG ACID + WEAK BASE



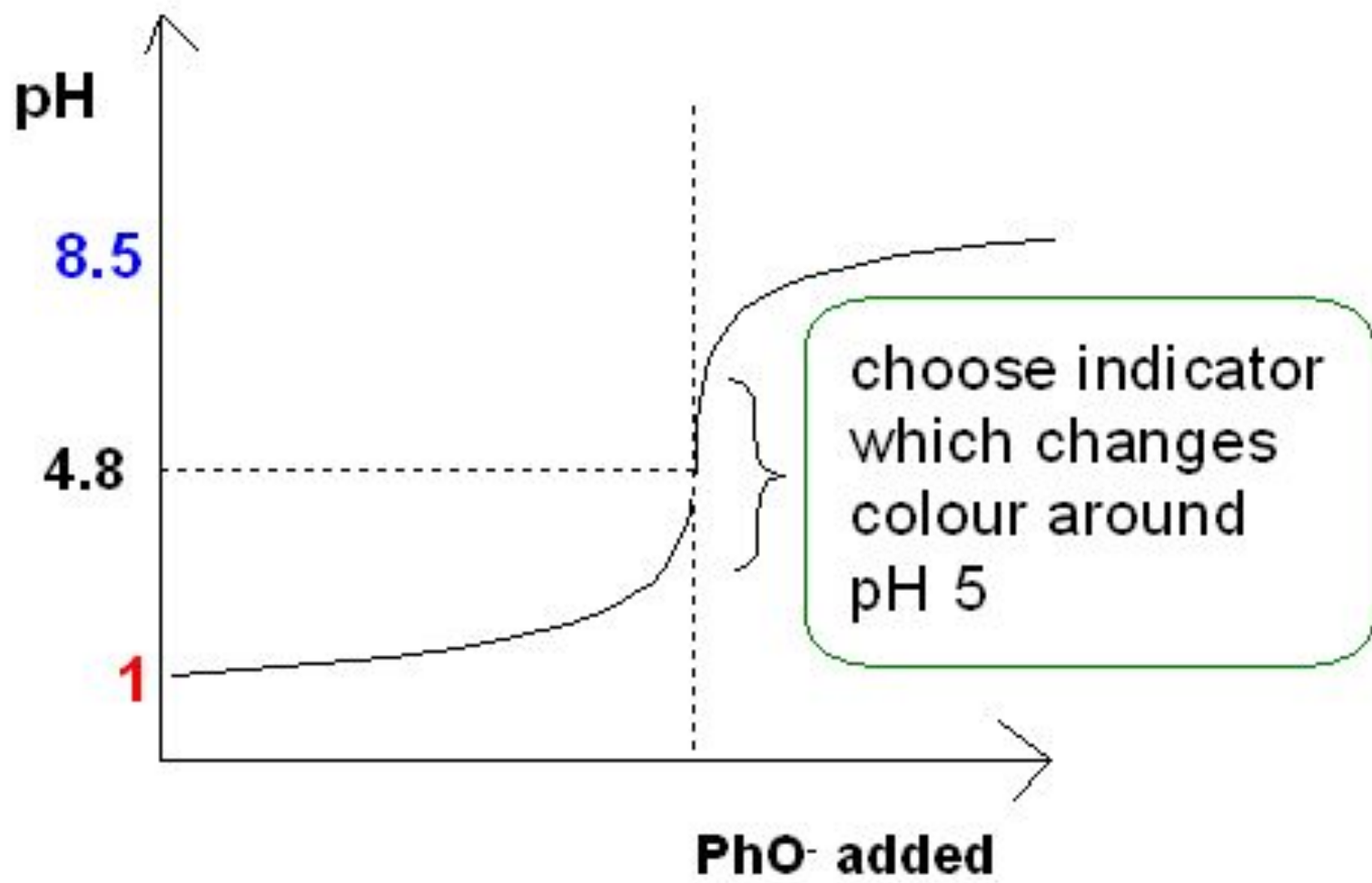
If PhO^- (aq) is 0.1 mol dm^{-3}
final pH = 8.5
(approx)

PhO⁻
PhOH

STRONG ACID + WEAK BASE

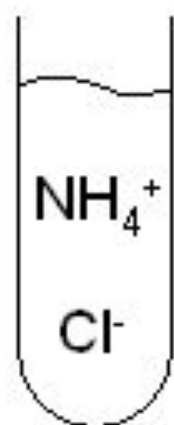


STRONG ACID + WEAK BASE



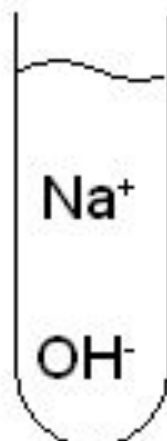
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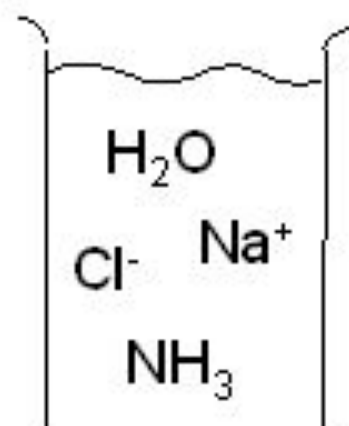


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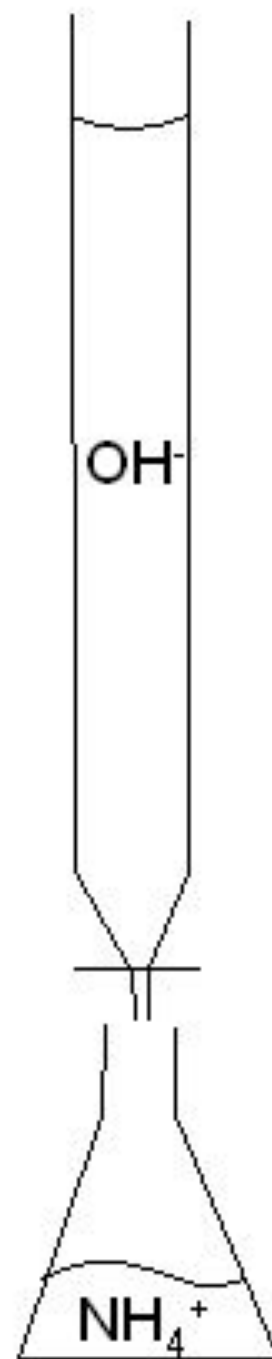
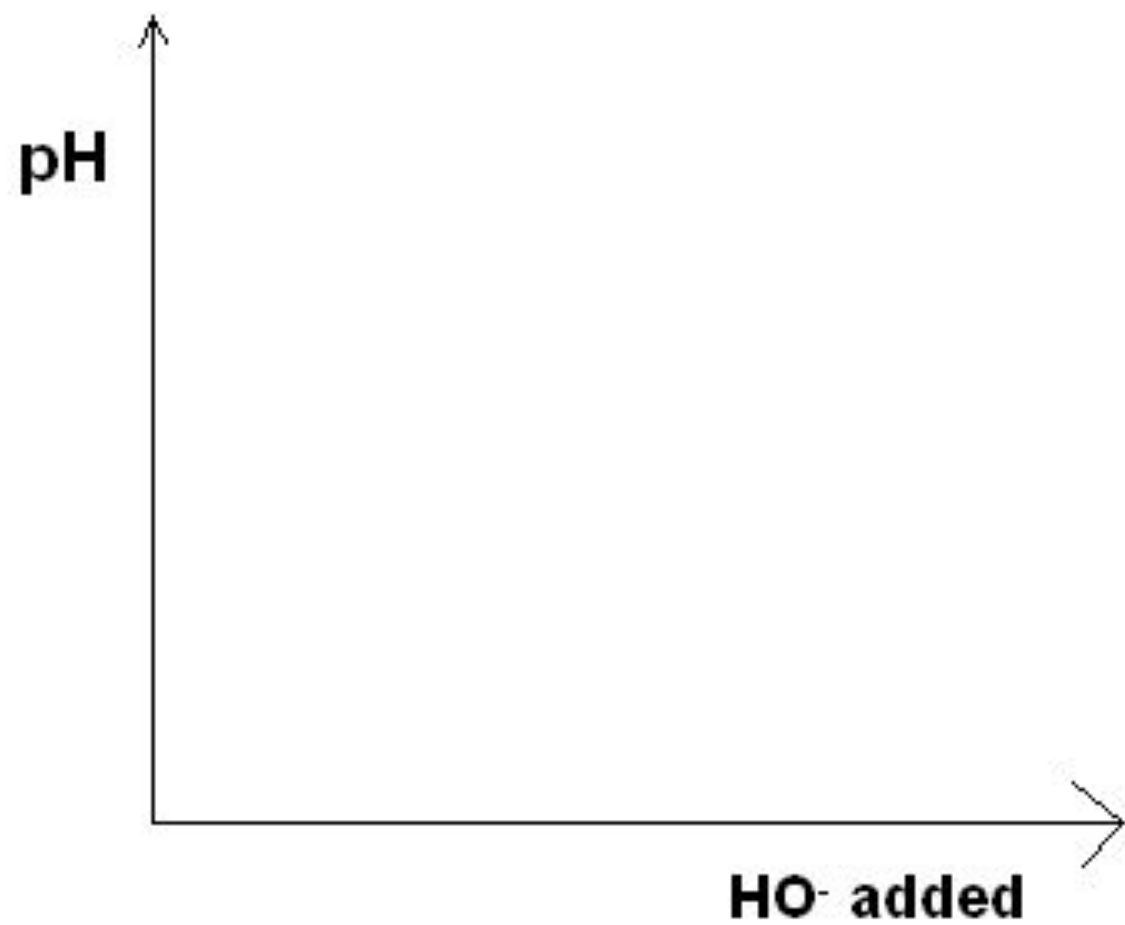
STRONG BASE



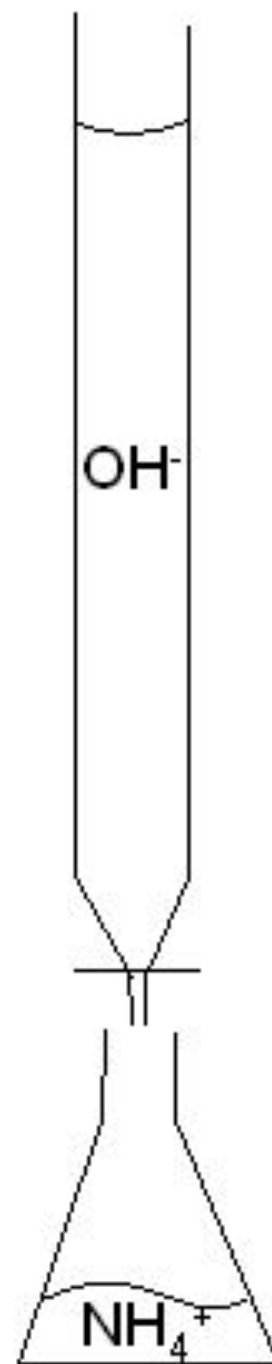
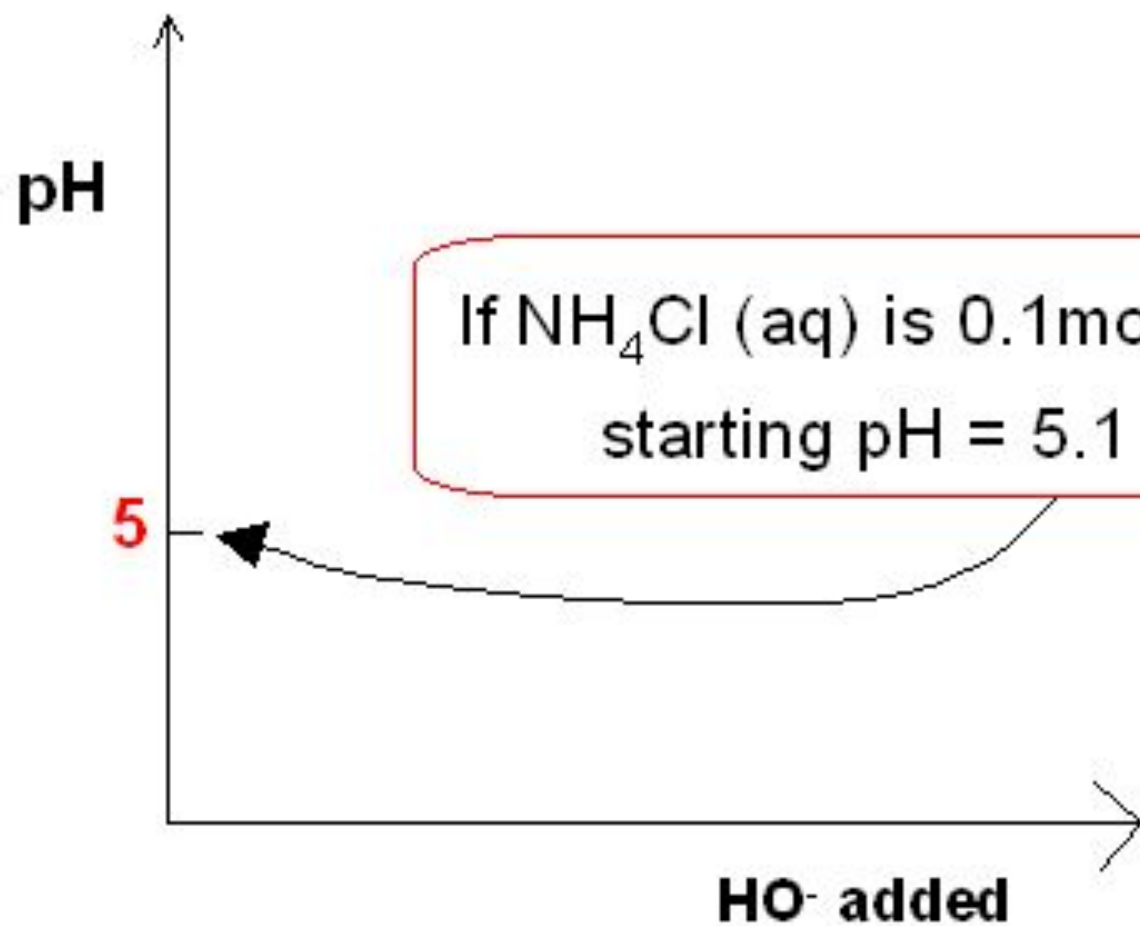
**COMPLETE
REACTION**



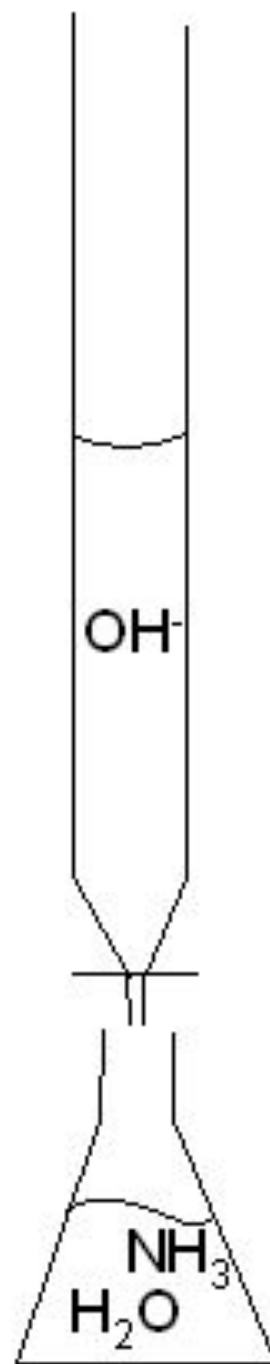
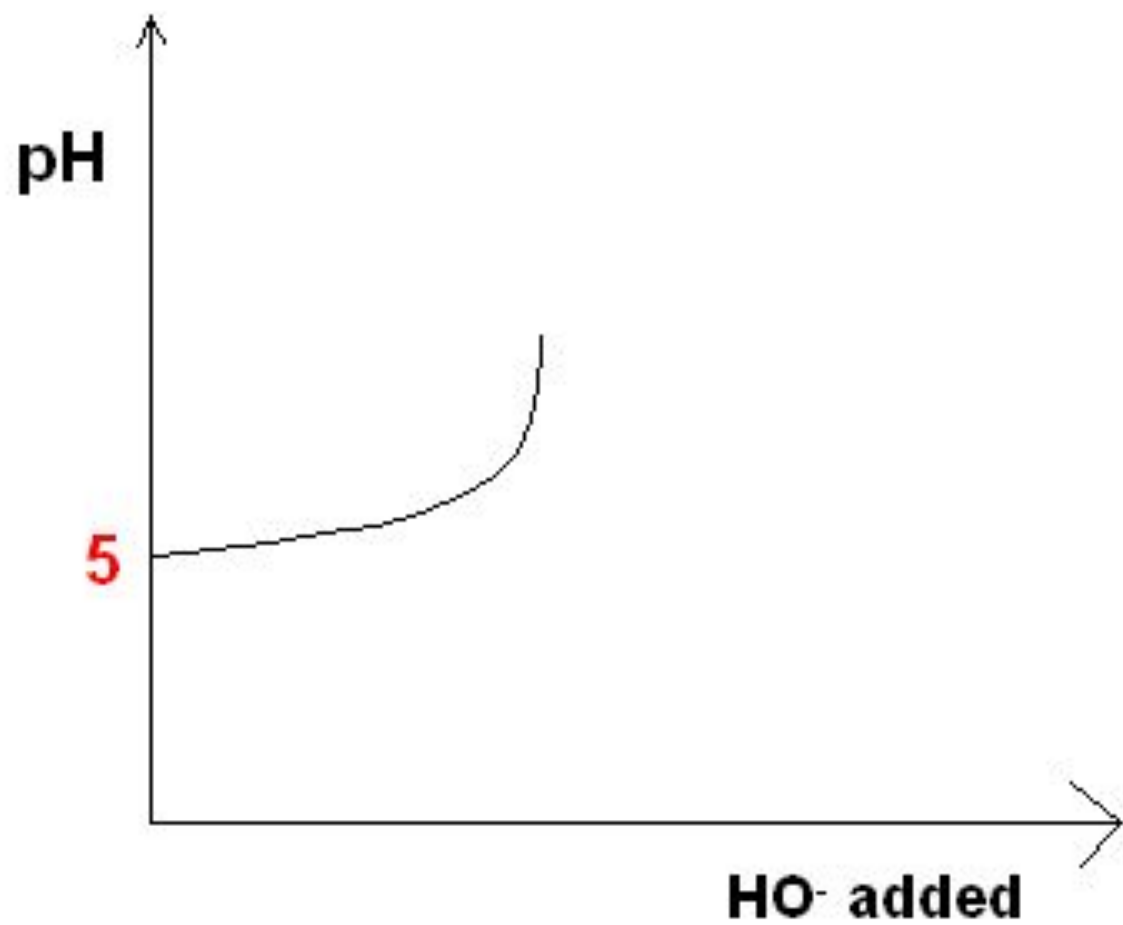
WEAK ACID + STRONG BASE



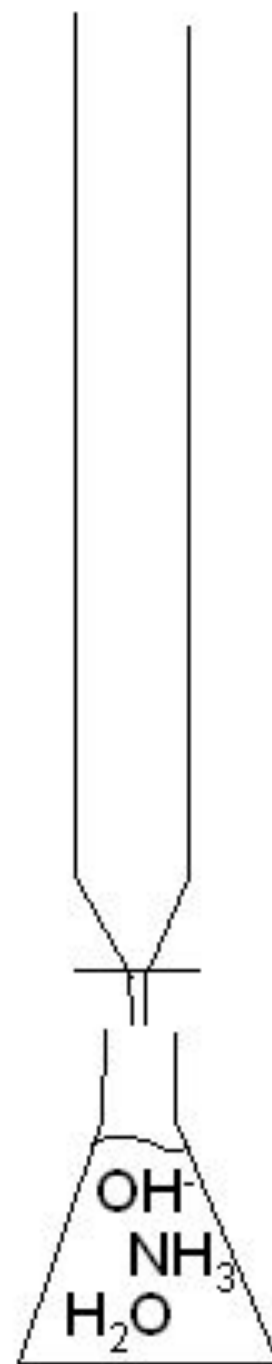
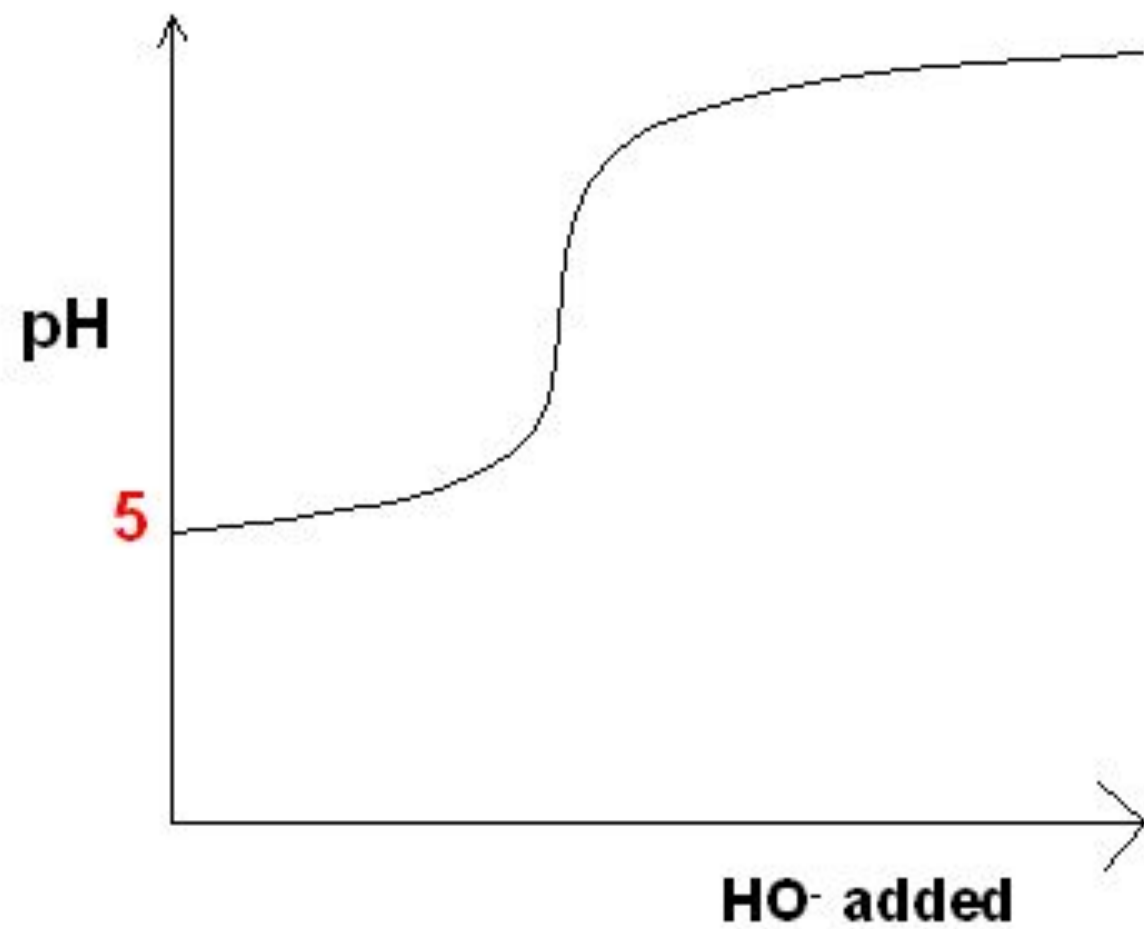
WEAK ACID + STRONG BASE



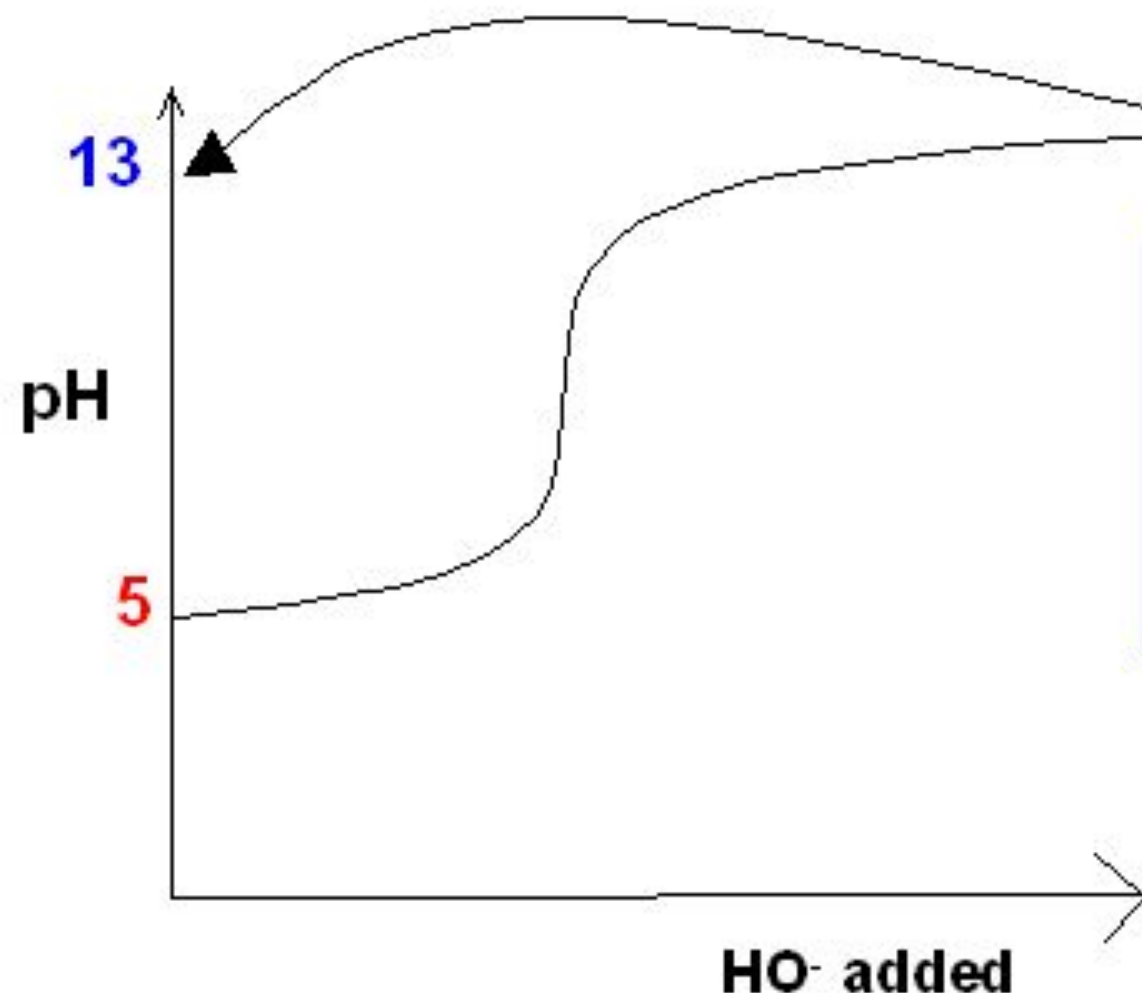
WEAK ACID + STRONG BASE



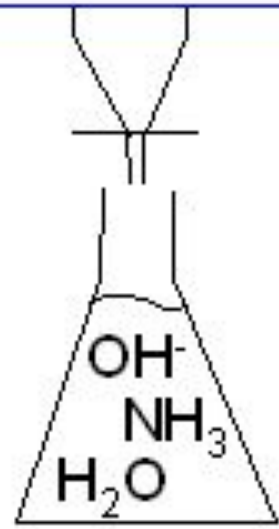
WEAK ACID + STRONG BASE



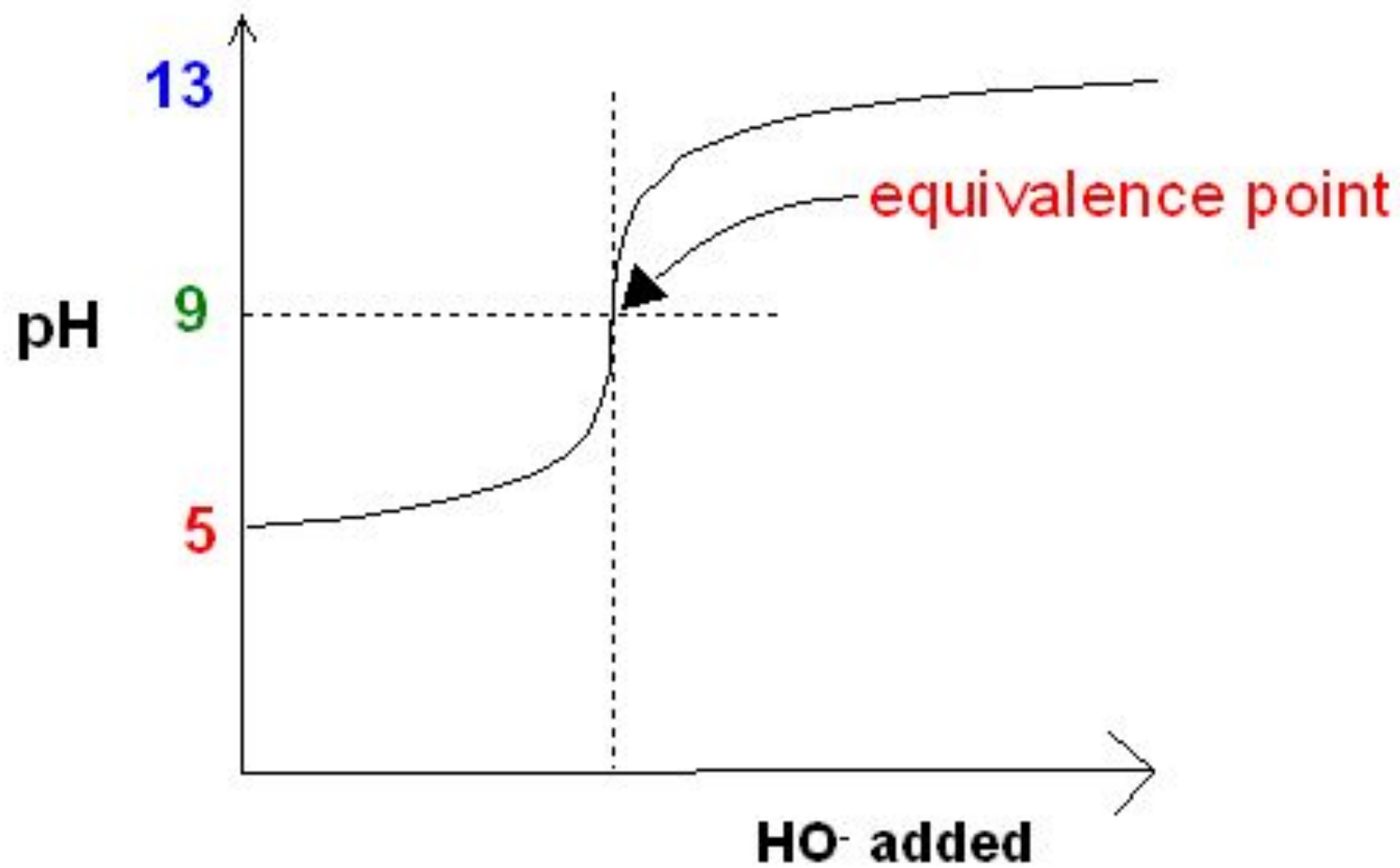
WEAK ACID + STRONG BASE



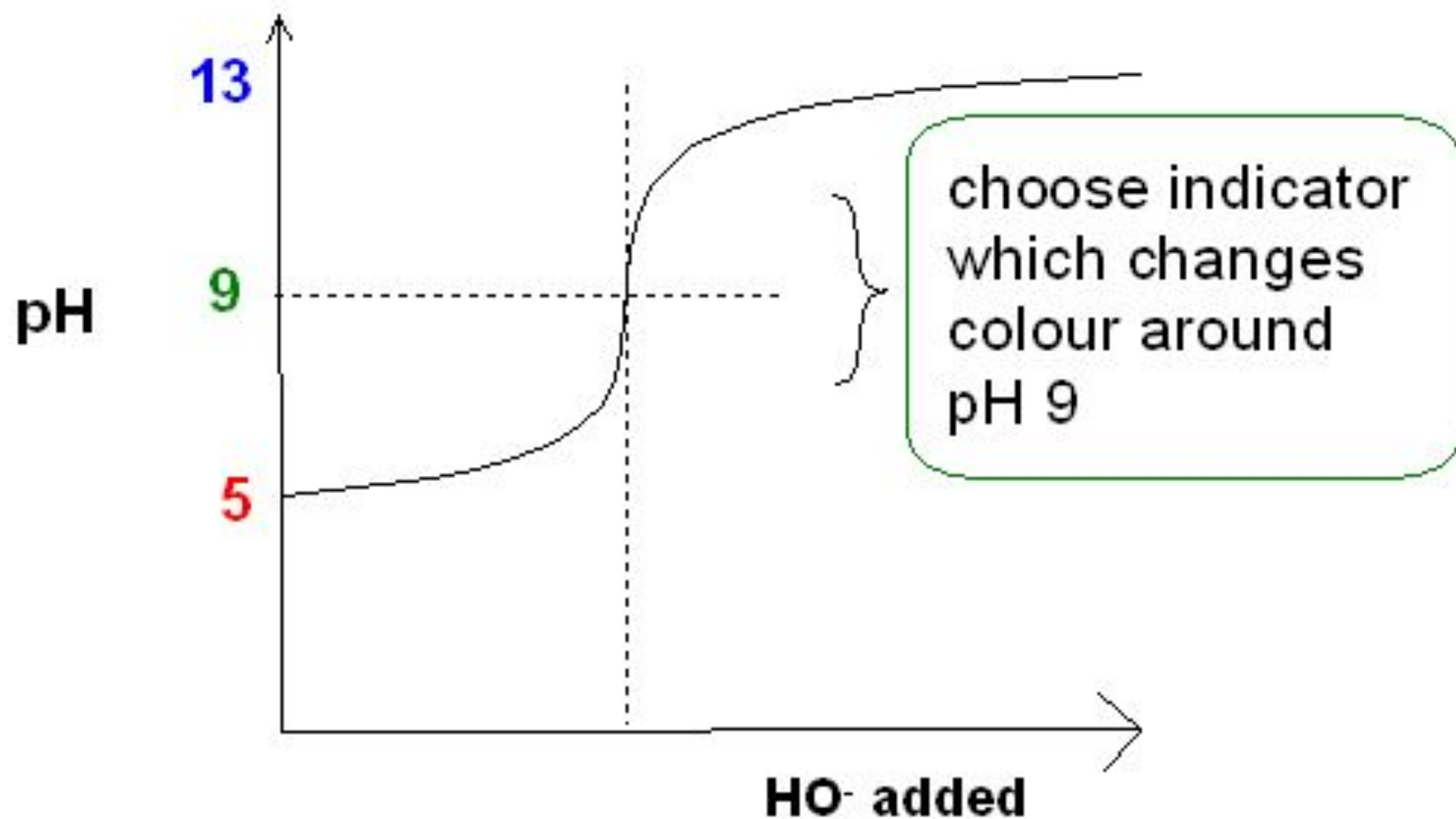
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final pH = 13
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WEAK ACID + STRONG BASE

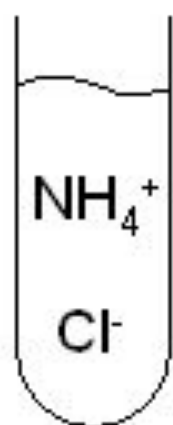


WEAK ACID + STRONG BASE



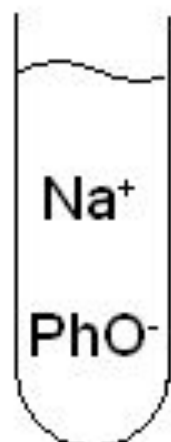
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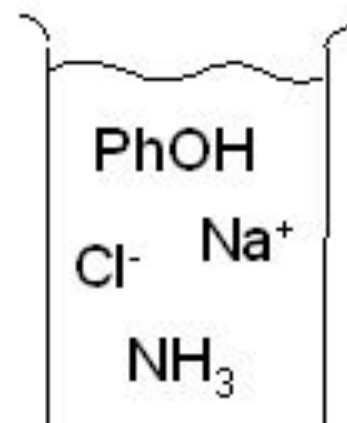


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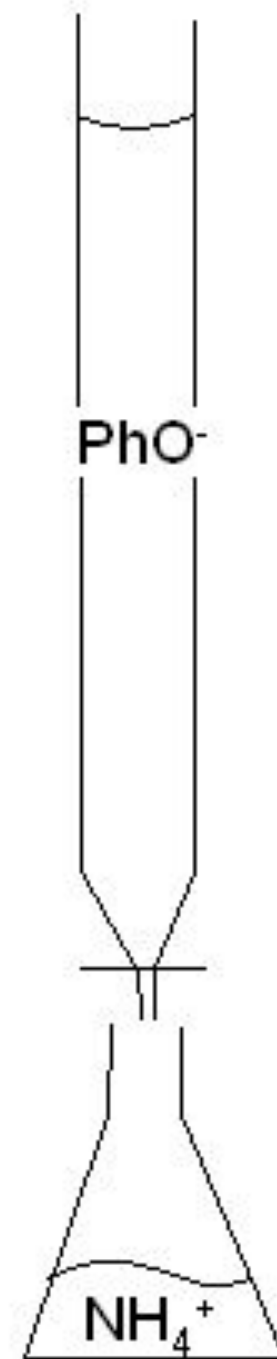
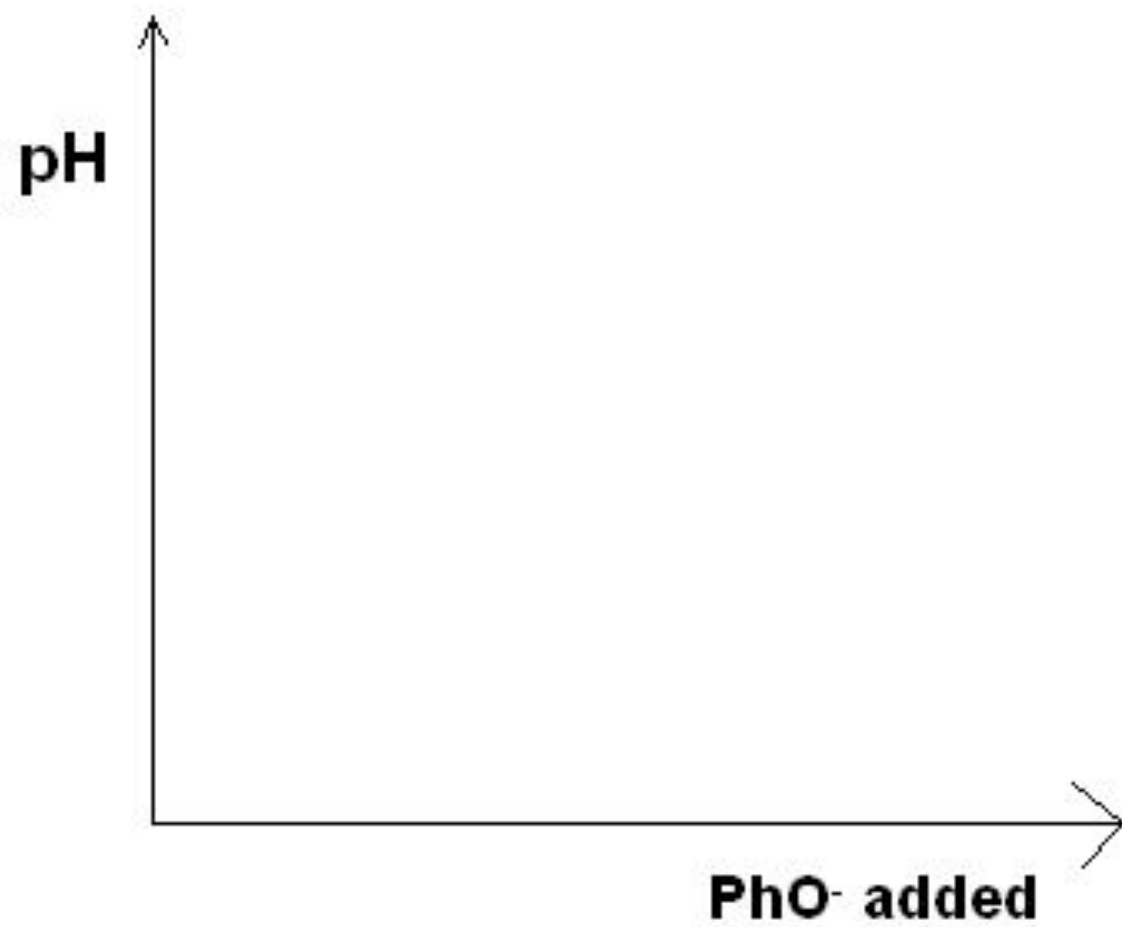
WEAK BASE



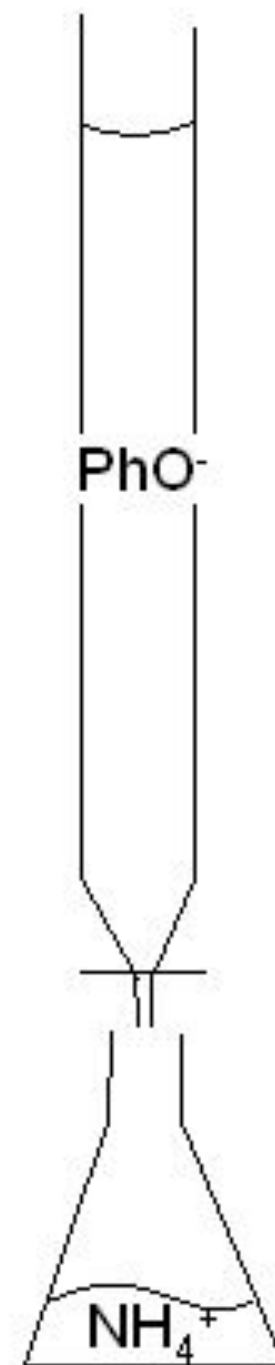
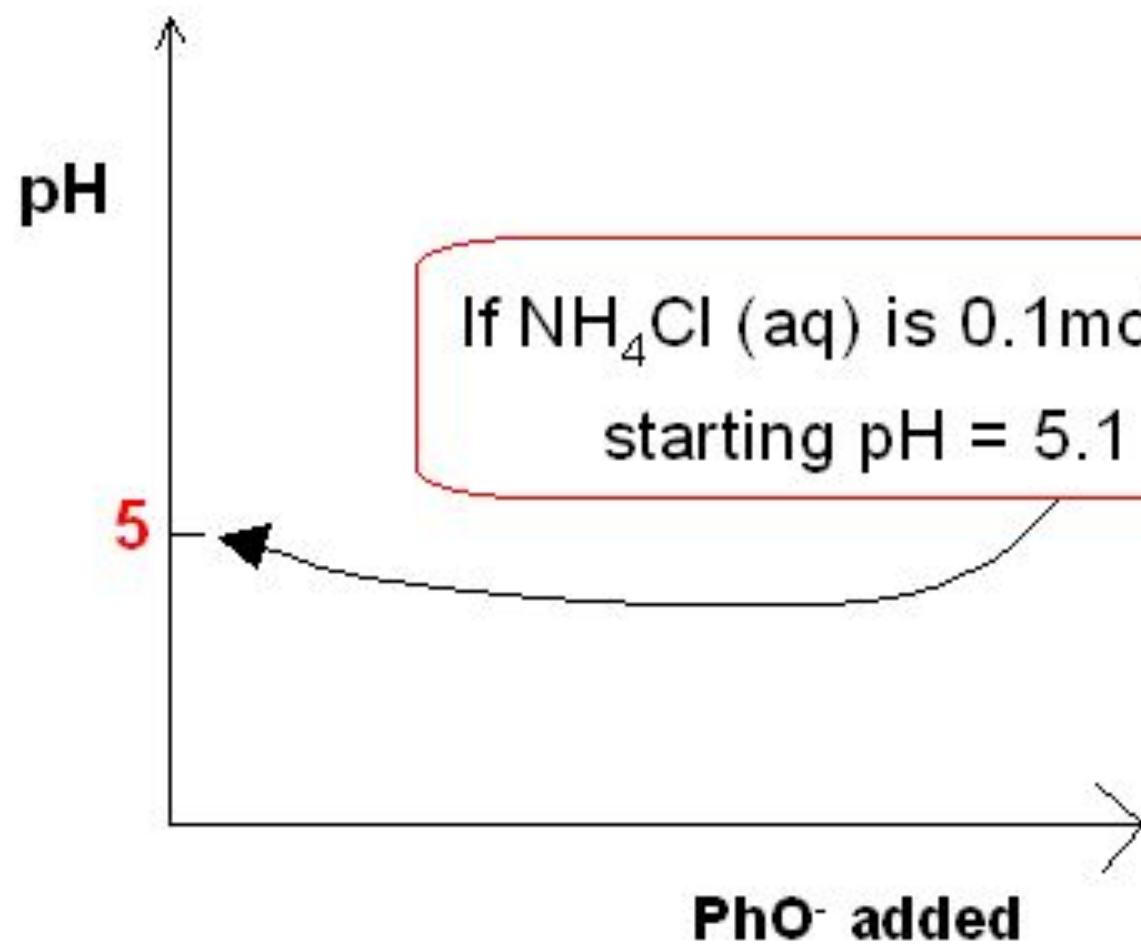
INCOMPLETE
⇌
REACTION



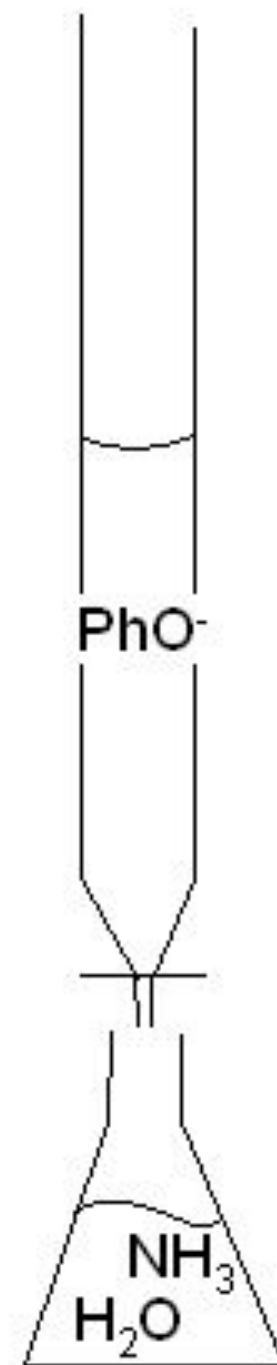
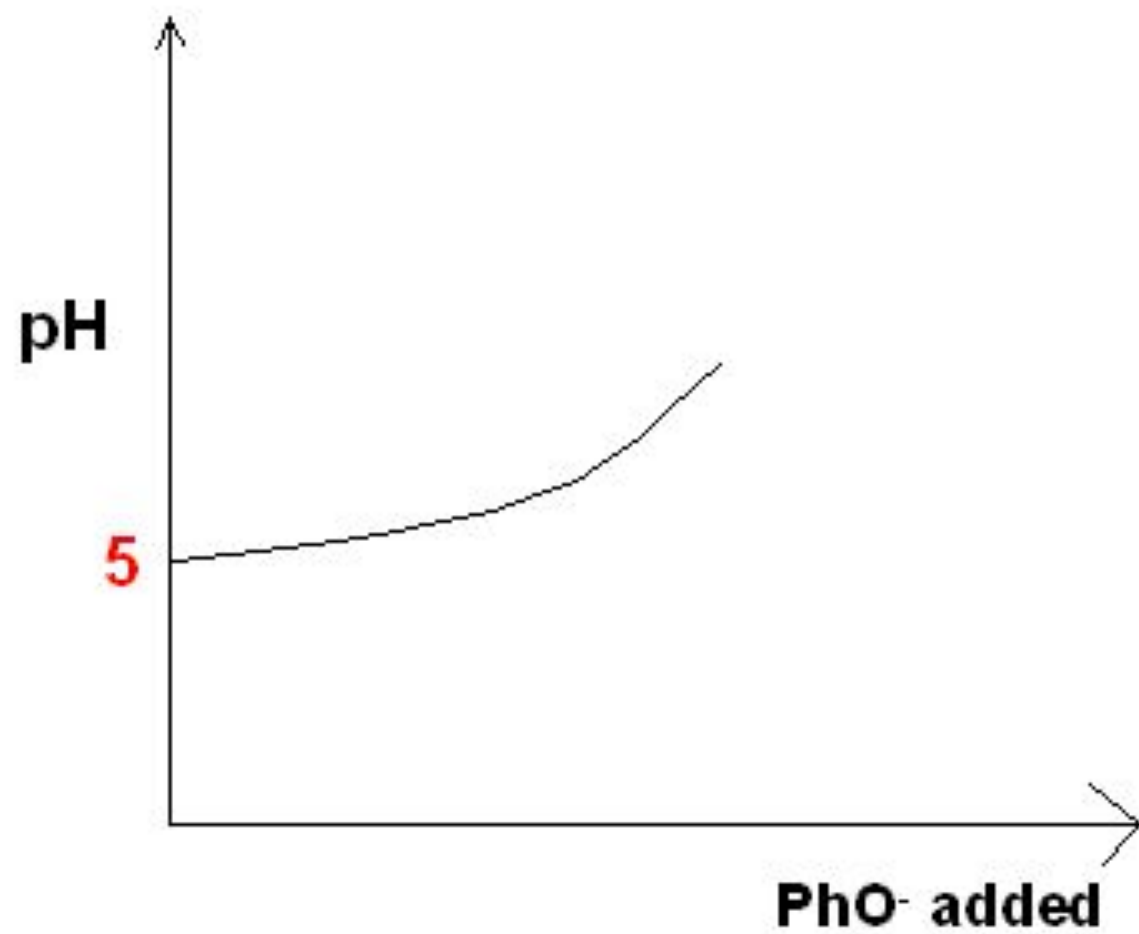
WEAK ACID + WEAK BASE



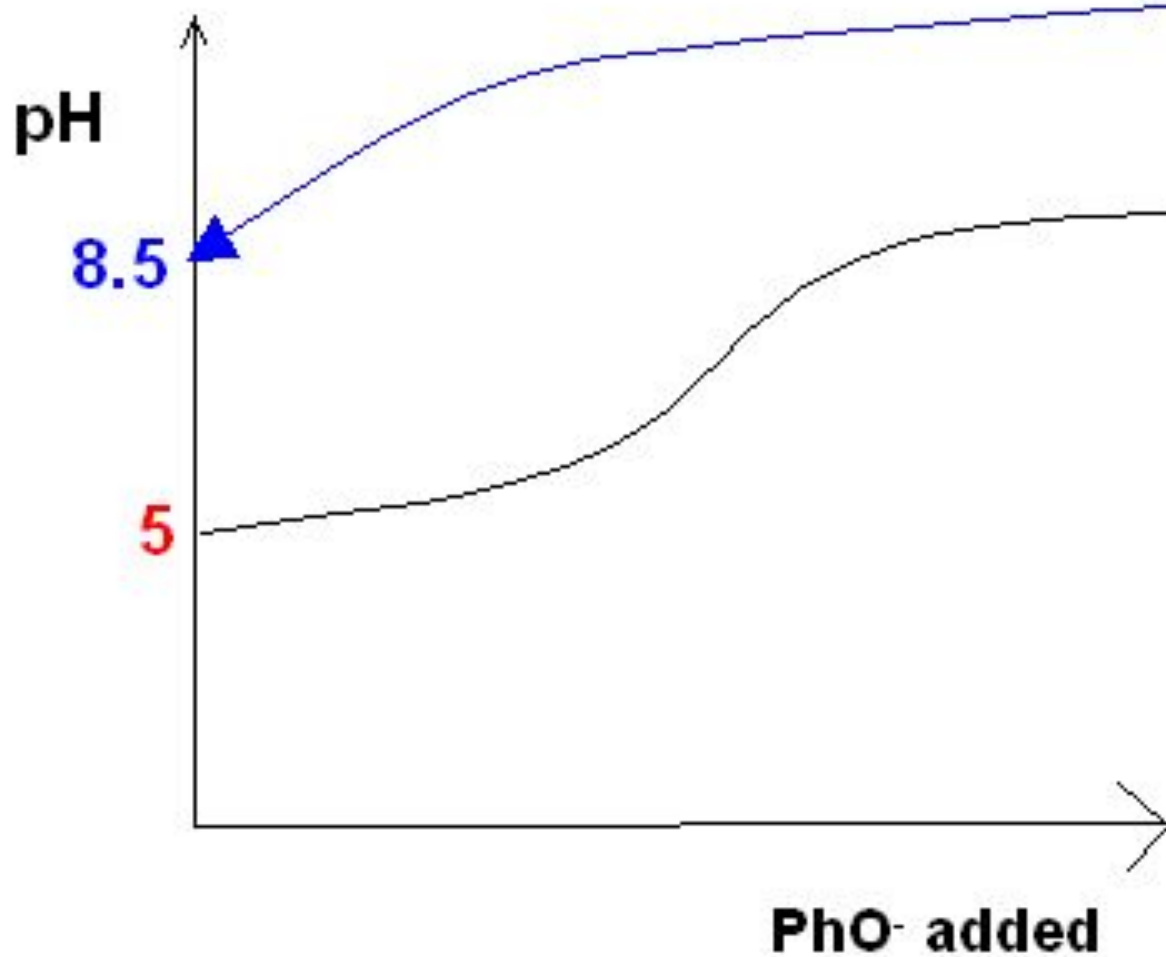
WEAK ACID + WEAK BASE



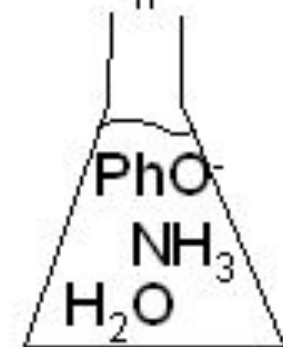
WEAK ACID + WEAK BASE



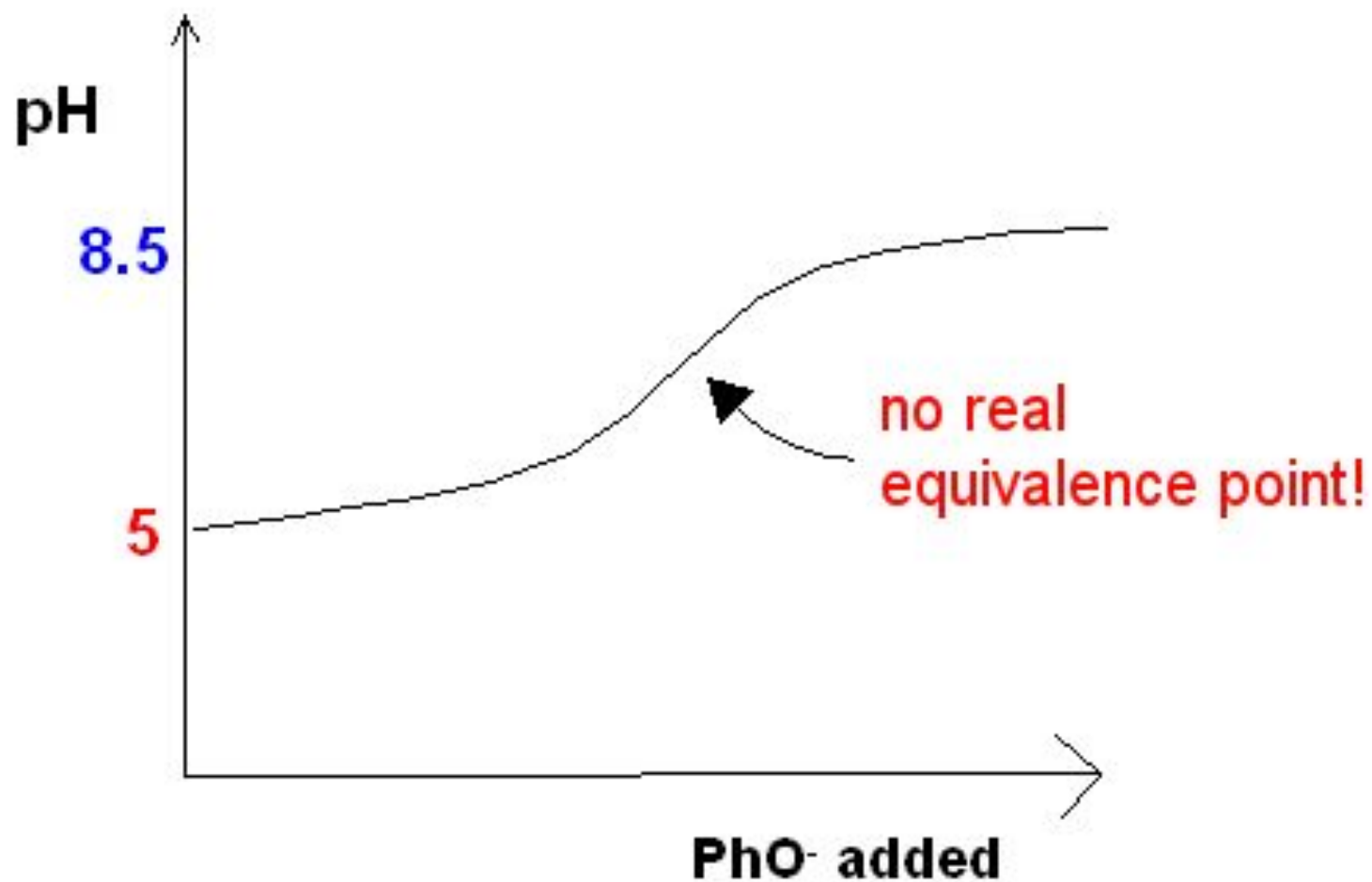
WEAK ACID + WEAK BASE



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final pH = 8.5
(approx)



WEAK ACID + WEAK BASE



WEAK ACID + WEAK BASE

