Which of the following will act as a Lewis Acid?
A: PH₃,
B: AlCl₃
C: HCN

HA + H₂O ⇌ H₃O⁺ + A⁻

The following picture represents solutions of a weak acid HA that may also contain a salt NaA. Which solution has the highest pH?

Predict a pH value for 0.1 M NaOH.
A: 1
B: 7
C: 13
CH₃COOH $\rightleftharpoons$ CH₃COO⁻ + H⁺ \hspace{1cm} \text{pK}_a=5

To make more CH₃COOH, add

A: KOH
B: KCH₃COO

Which of the following combinations of chemicals could be used to make a buffer solution?

A: HCl / NaOH
B: HCl / NH₃
C: HCl / H₃PO₄
D: NaOH / NH₃

What is the correct expression for the solubility product constant for Mg₃(PO₄)₂?

A: \( K_{sp} = [\text{Mg}^{2+}] [\text{PO}_4^{3-}] \)
B: \( K_{sp} = [\text{Mg}^{2+}]^2 [\text{PO}_4^{3-}]^3 \)
C: \( K_{sp} = [\text{Mg}^{2+}]^3 [\text{PO}_4^{3-}]^2 \)

We add enough FeCl₃ to a pH = 2.0 solution to give [Fe³⁺] = 1.0 x 10⁻⁵ M. If \( K_{sp} \) for Fe(OH)₃ is 6.3 x 10⁻³⁸, determine which of the following is true.

A: a precipitate forms
B: a precipitate does not form
C: the system is at equilibrium