Review:

- Answer the following questions about acids.
  - List the properties of acids.
  - What makes an acid strong or weak?
  - How many strong acids are there? List them.
  - What are the differences between Arrhenius acids and Bronsted-Lowry Acids?

May 17-10:11 AM

Review:

- Answer the following questions about acids.
  - List the properties of acids.
    - sour
    - pH < 7
    - react w/metals
    - blue → red
    - not slippery
    - good conductors
  - What makes an acid strong or weak?
    strong acids completely ionize
  - How many strong acids are there? List them.
    $HCl, HBr, HI, H_2SO_4, HClO_4, HNO_3$
  - What are the differences between Arrhenius acids and Bronsted-Lowry Acids?
    ↳ H^+ donor
    ↳ H^+

May 17-10:11 AM

Review:

- Answer the following questions about acids.
  - What is the difference between a polyprotic acid and a monoprotic acid?
  - What is the difference between a ternary acid and a binary acid?
  - Determine if the following acids are polyprotic or monoprotic and ternary or binary:
    - > H_3PO_4 _____ _____
    - > HF _____ _____
    - > C_3H_7COOH _____ _____

May 17-10:12 AM

Review:

- Answer the following questions about acids.
  - What is the difference between a polyprotic acid and a monoprotic acid?

more than 1 H^+ | 1 H^+

  - What is the difference between a ternary acid and a binary acid?

more than 2 elements | 2 elements

  - Determine if the following acids are polyprotic or monoprotic and ternary or binary:
    - > H_3PO_4
    - > HF
    - > C_3H_7COOH

polyprotic | ternary
monopro. | binary
monopro. | ternary

ion

May 17-10:12 AM

Review:

- Answer the following questions about bases.
  - List the properties of bases.
  - What makes a base strong or weak?
  - How many strong bases are there? List them.
  - What are the differences between Arrhenius bases and Bronsted-Lowry bases?

May 17-10:13 AM

Review:

- Answer the following questions about bases.
  - List the properties of bases.
    - slippery
    - bitter taste
    - pH > 7
    - red → blue
    - doesn't react w/metals
    - good conductors
  - What makes a base strong or weak?
    - strong bases completely ionize
  - How many strong bases are there? List them.
    $LiOH, NaOH, KOH, RbOH, Ca(OH)_2, Sr(OH)_2, Ba(OH)_2$
  - What are the differences between Arrhenius bases and Bronsted-Lowry bases?
    - Arrhenius: OH^- anion
    - Bronsted-Lowry: H^+ acceptors

May 17-10:13 AM

Review:

- Answer the following questions about water.
  - What is H_3O^+ and why do we use it?
  - Define amphoteric.

May 17-10:13 AM

Review:

- Answer the following questions about water.
  - What is H_3O^+ and why do we use it?
    - hydronium ion (H^+)
    - actually found in nature
  - Define amphoteric.
    - can be an acid or base

$H_2O \rightarrow HOH$

May 17-10:13 AM

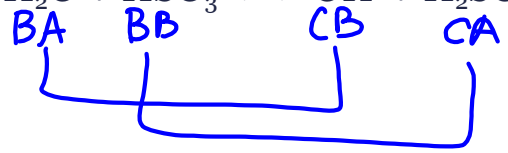
Review:

- Identify the acid, base, conjugate acid, and conjugate base in the following equations.
  - $H_2O + HSO_3 <--> OH^- + H_2SO_3$
  - $H_2O + HNO_2 <--> NO_2^- + H_3O^+$

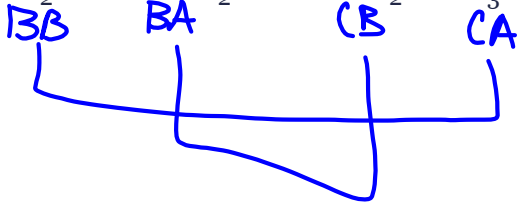
May 17-10:13 AM

Review:

- Identify the acid, base, conjugate acid, and conjugate base in the following equations.
  - $H_2O + HSO_3 <--> OH^- + H_2SO_3$



  - $H_2O + HNO_2 <--> NO_2^- + H_3O^+$



May 17-10:13 AM

Review:

- A solution has an $[H^+]$ of 1.2×10^{-5} M.
  - What is its pH?
  - Is this solution acidic or basic? Explain your answer.

May 17-10:13 AM

Review:

- A solution has an $[H^+]$ of 1.2×10^{-5} M.
  - What is its pH?

$pH = -\log[H^+] = -\log(1.2 \times 10^{-5}) = 4.9$

  - Is this solution acidic or basic? Explain your answer.

< 7

0 – 14

May 17-10:13 AM

Review:

- An HI solution has a pH of 3.10.
  - Calculate the concentration of the hydrogen ion.
  - Is this solution acidic or basic? Explain your answer.

May 17-10:14 AM

Review:

- An HI solution has a pH of 3.10.
  - Calculate the concentration of the hydrogen ion.

$[H^+] = 10^{-pH} = 10^{-3.10}$

$= 7.94 \times 10^{-4} M$

  - Is this solution acidic or basic? Explain your answer.

< 7

May 17-10:14 AM

Review:

- A solution has a pOH of 5.30.
  - What is the pH of the solution?
  - Is this solution acidic or basic? How do you know?

May 17-10:15 AM

Review:

- A solution has a pOH of 5.30.
  - What is the pH of the solution?

$14 = pH + pOH$

$14 = pH + 5.30$

$14 - 5.30 = 8.70$

  - Is this solution acidic or basic? How do you know?

>7

May 17-10:15 AM

Review:

- **A student performs a titration using a standardized solution of $Sr(OH)_2$ to determine the concentration of HBr.**
  - What type of compound is HBr? How do you know?
  - What type of compound is $Sr(OH)_2$? How do you know?
  - What type of reaction is this? What will the products be?
  - Write the balanced equation for the reaction.

May 17-10:15 AM

Review:

- **A student performs a titration using a standardized solution of $Sr(OH)_2$ to determine the concentration of HBr.**
  - What type of compound is HBr? How do you know?

    acid — H^+
  - What type of compound is $Sr(OH)_2$? How do you know?

    base — OH^-
  - What type of reaction is this? What will the products be?

    neutralization
  - Write the balanced equation for the reaction.

$2HBr + Sr(OH)_2 \rightarrow SrBr_2 + 2H_2O$

May 17-10:15 AM