PURPOSE HOW DO WE ? DETECT ACIDS + . BASES?

- (#1) INDICATORS CHANGE COLORS TO SHOW ACID OR BASE
- FI ELECTRONIC METERS GIVE EXACT DECIMAL PH NUMBERS.
- #3 HOW DO THEIR FORMULAS

Formulas with (Metal & OH) 15 USUALLY A BASE

NH3 is a base.

Formulas that start with are often acids.

Substances that give Ht during a reaction are acids.

Substances that prime acids.

Substances that prime acids.

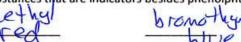
receive H+ during a reaction are bases.

Do 3, 4A
6, 12
For a stamp.



## Colored indicators -

- (page 590 in our Wilbraham Chemistry Textbook)
   An indicator is a valuable tool for measuring pH. Why?
- 2. (p. 589) What color is phenolphthalein when the pH is 2? COLORLESS!
- 3. (p. 589) What color is phenolphthalein when the pH is 10?
- 4. (p. 589) Name two other substances that are indicators besides phenolphthalein:



Math -

5. Fill in the chart using the rule: [H+] multiplied by [OH-] equals 1x10<sup>-14</sup>

Test tube	concentration of hydronium (mol/L)	concentration of hydroxide (mol/L)
А	1 x 10 <sup>-10</sup>	1×10-4
В	1 x 10 <sup>-5</sup>	1 × 10 - 9
С	1×10-6	1 x 10 <sup>-8</sup>
D	1 x 10 <sup>-7</sup>	1×107
E	1 - 10-7	1 x 10 <sup>-7</sup>

6. Using page 584 from your textbook fill in the chart:

concentration of hydronium (mol/L)		concentration of hydroxide (mol/L)	PAR AND CO
1×10-6	5	1 × 10-9	coff
1 × 10	2	× 10-12	lem

coffee lemon juice Now switch!

Who is writing on this side:

Who is helping on this side:

## Colored indicators -

- 7. (p. 590) What color is bromocresol green when the pH is 1?
- 8. (p. 590) What color is bromocresol green when the pH is 5? Green / blve
- 9. (p. 590) What color is bromocresol green when the pH is 10?
- 10. Fill in the chart using the rule: pH = log[H+]

Test tube	(+1)	. На
F	5.22 x 10 <sup>-10</sup>	9.282
G	1 x 10 <sup>-15</sup>	15
Н	1 × 10-17	17
i	1.58 × 10-12	11.8

Math

artilog (-11.8)

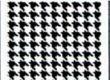
11. Using page 584 from your textbook fill in the chart:

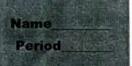
concentration of hydronium (mol/L)	concentration of hydroxide (mol/L)	
1 × 10-12	1 × 10-2	washing sod
1 × 10-7	1×10-3	pure water



CleMistry: http://gemest.weebly.com

help every day at lunch and Tues, & Thurs after





- 1. If a beaker contains 0.00000593 moles of H+ ions, in 30.0 mL of water,

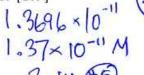
b. what is the pH? 
$$pH = -\log(1.98 \times 10^{-4} M)$$

- 1. (Memorized Formula #1) What is the mathematical definition of pH (give the formula)?
- (Memorized Formula #2) What two concentrations always give 1x10<sup>-14</sup> when multiplied 2. hydraxide reacont ration together?
- If the concentration of [H+] is 2.33x10<sup>-9</sup>, calculate the concentration of [OH-]
  Start by writing an appropriate formula. | Then rearrange to get the unknown alone. | Plug in the known val 3.

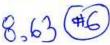
Terrory of the Person

$$\frac{1 \times 10^{-14} = [H^{+}]OH^{-7}}{H^{+}} = OH^{-} \qquad \frac{1 \times 10^{-14}}{2.33 \times 10^{-9}} = 4.329 \times 10^{-6}$$

If the concentration of [H+] is 7.30x10<sup>-4</sup>, calculate the concentration of [OH-] 4.



- If the concentration of [H+] is  $7.30 \times 10^{-4}$ , calculate the pH 5.
- 3.14 #5
- \*\* If the concentration of [H+] is 2.33x10<sup>-9</sup>, calculate the pH and post 6.



If the concentration of [OH-] is 2.33x10<sup>-9</sup>, find the [H+] and then calculate the pH (you will

$$1 \times 10^{-14} = 10^{-$$



This is to certify that

## Evan Genest

has participated in

## CS50 for Educators

a workshop held 29 April 2016 – 1 May 2016 with 16 hours of in-person instruction and 15 hours of preparatory work.

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