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| Acids and Bases  Mr. Genest ChemiStry | **H3O+ H3O+ H3O+ H3O+**  **H3O+ H3O+ H3O+ H3O+ H3O+**  **H3O+ H3O+ H3O+ H3O+ H3O+**  **H3O+ H3O+ H3O+ H3O+ H3O+ H3O+**  **H3O+ H3O+ H3O+ H3O+ H3O+** | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. What is the mathematical definition of pH (give the formula)?
2. What two concentrations always give 1x10-14 when multiplied together?
3. **If the concentration of [H+] is 2.33x10-9, calculate the concentration of [OH-]**

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| Start by writing an appropriate formula. Circle the unknown… | Then rearrange to get the unknown alone. | Plug in the known values and solve. |

1. If the concentration of [H+] is 7.30x10-4, calculate the concentration of [OH-]
2. If the concentration of [H+] is 7.30x10-4, calculate the pH
3. If the concentration of [H+] is 2.33x10-9, calculate the pH
4. If the concentration of [OH-] is 2.33x10-9, find the [H+] and then calculate the pH (using your formula from #2 and #1)
5. Calculate the pH of a solution if its [OH−] = 0.000700 M

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| Start by writing an appropriate formula. Circle the unknown… | Then rearrange to get the unknown alone. | Plug in the known values and solve. |

1. Calculate the pH of a 0.025 M solution of [H+]
2. Circle the one compound that would turn litmus paper red.
   1. pure water
   2. 0.10 M C6H12O6(aq)
   3. 0.10 M NaCl(aq)
   4. 0.10 M NaOH(aq)
   5. 0.10 M H2SO4(aq)
3. Circle the one compound that is neither an acid nor a base.
   1. 0.10 M C6H12O6(aq)
   2. 0.10 M H2CO3(aq)
   3. 0.10 M NaOH(aq)
   4. 0.10 M H2SO4(aq)
4. Of the following compounds, circle ONE OR MORE that are electrolytes
   1. 0.10 M HC2H3O2(aq)
   2. 0.10 M C6H12O6(aq)
   3. 0.10 M NaCl(aq)
   4. 0.10 M NaOH(aq)
   5. 0.10 M H2SO4(aq)
5. Circle the compound that would increase the concentration of hydronium in solution.
   1. pure water
   2. 0.10 M C6H12O6(aq)
   3. 0.10 M NaCl(aq)
   4. 0.10 M NH3(aq)
   5. 0.10 M HNO3(aq)
6. The formula for water is H2O. What is the formula for hydronium?\_\_\_\_\_\_\_\_\_\_ (include the correct charge)
7. Write the dissociation reaction for HNO3 (for example, something that looks a little like

A(aq) -> B-(aq) + C+(aq) or maybe A(aq) + H2O(L)-> B+(aq) + C-(aq) .

1. Which one liquid below would you expect to feel slippery?
   1. pure water
   2. 0.10 M C6H12O6(aq)
   3. 0.10 M NaCl(aq)
   4. 0.10 M NaOH(aq)
   5. 0.10 M H2SO4(aq)