**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section: \_\_\_\_\_** 11/29/2012

**Acids and Bases Homework (SPI.9.12)**

**Part I: Acids vs. Bases**

1. Full in the following table to correctly characterize acids and bases:

|  |  |  |
| --- | --- | --- |
|  | **Acids** | **Bases** |
| *pH* | Less than 7 |  |
| *Conducts electricity?* |  |  |
| *What color does it turn litmus paper?* |  |  |
| *How does it feel?* | Varies |  |
| *How does it taste?* |  |  |
| *What ions does it produce in solution?* |  |  |

1. For the following, choose *acid* or *base*.
2. tomato juice; pH = 5
3. pH > 7
4. Turns blue litmus paper red
5. Lemon juice
6. Corrodes a nail
7. Releases hydronium ions in solution
8. pH of 7.6

**Part II: pH and pH Scale**

1. Create a pH scale indicating *pH, acids, bases, and neutral substances. Give examples of each.*
2. Describe the following substances as *acids or bases* and *strong or weak* based on their pH.

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | **pH** | **Acids or Base?** | **Strong or Weak?** |
| *Sea water* | 7.8 |  |  |
| *Detergent* | 10.1 |  |  |
| *Lemon juice* | 2.1 |  |  |
| *Stomach acid* | 1.7 |  |  |
| *Ammonia* | 12.3 |  |  |
| *Milk* | 6.8 |  |  |
| *Drain cleaner* | 13.5 |  |  |
| *Battery acid* | 1.0 |  |  |
| *Oven cleaner* | 13 |  |  |

|  |  |
| --- | --- |
| ***Circle the stronger acid*** | ***Circle the stronger base*** |
| pH= 3 OR pH =5 | pH= 12 OR pH =14 |
| pH= 1 OR pH =1.1 | pH= 10 OR pH =13 |
| pH= 4 OR pH =6 | pH= 8.5 OR pH= 9.5 |

|  |  |
| --- | --- |
| ***Which has the higher concentration of [H3O+]?*** | ***Which has the higher concentration of [OH-]?*** |
| pH= 4 OR pH =6 | pH= 12 OR pH =14 |
| pH= 3 OR pH =5 | pH= 8.5 OR pH= 9.5 |
| pH= 1 OR pH =1.1 | pH= 10 OR pH =13 |

|  |
| --- |
| **Part IV: I OWN THIS!! Independent Practice**  |

1. **Which is the pH of a weak acid?**
	1. 2 b. 6 c. 8 d. 13
2. **Which is the pH of a strong base?**
	1. 2 b. 6 c. 8 d. 13
3. **Which is the pH of a weak base?**
	1. 2 b. 6 c. 8 d. 13
4. **Which is the pH of a strong acid?**
	1. 2 b. 6 c. 8 d. 13
5. **How can you identify if a solution is an acid or a base?**
6. **Would you expect the pH of soap to be 4 or 9? Explain why**
7. **Is the compound H3PO4 an acid or a base? How do you know?**
8. **Based on the table, which substance is a base?**
9. substance 1
10. substance 2
11. substance 3
12. substance 4