SNC 2DI Name: _ANSWERS___

Acids and Bases Worksheet

1. Concentration of acids and bases on the pH scale:

a) Base #1 has a pH of 9. Base #2 has a pH of 13. Which is more basic? How many more times basic is your choice?

13-9 = 4

Base # 2 is more basic; Base #2 is 10 000 times more basic than Base # 1

b) Lemon juice has a pH of 2. Vinegar has a pH of 5. Which is more acidic? How many more times acidic is your choice?

5-2 = 3

Lemon juice is more acidic; Lemon juice is 1000 times more acidic than vinegar

2. What are the products of the following reactions? Write the balanced chemical equations for each reaction (these are synthesis reactions – look back in your notes)

a) nitrogen dioxide plus water produces …

NO_2 + H_2O → HNO_3

b) lithium oxide plus water produces …

Li_2O + H_2O → 2 LiOH

c) magnesium oxide plus water produces …

MgO + H_2O → $Mg(OH)_2$

d) carbon dioxide plus water produces …

CO_2 + H_2O → H_2CO_3

3. Neutralization of acids and bases:

Identify the products (water and salt) produced in each of the following neutralization reactions and balance the reaction.

a) **_2_** HCl (aq) + **___** $Ca(OH)_2$ (aq) → **H_2O + $CaCl_2$**
b) **___** H_2SO_4 (aq) + **_2_** $LiOH$ (aq) → **Li_2SO_4 + 2 H_2O**
c) **___** H_2CO_3 (aq) + **_2_** KOH (aq) → **K_2CO_3 + 2 H_2O**
d) **_2_** H_3PO_4 (aq) + **_3_** $Ba(OH)_2$ (aq) → **$Ba_3(PO_4)_2$ + 6 H_2O**
e) **___** HNO_3 (aq) + **___**$NaOH$ (aq) → **$NaNO_3$ + H_2O**

4. You are required to make the salt $CaSO_4$ in the lab. Write the acid and the base needed to make the acid and write a balanced chemical equation showing the reaction.

$Ca(OH)_{2(aq)}$ + $H_2SO_{4(aq)}$ → $CaSO_{4(aq)}$ + 2 $H_2O_{(l)}$