**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_Date\_\_\_\_\_\_\_\_**

Homework Problems for pH and pOH & Predicting Neutralization Reactions

**Equations:**

**1. Calculate the pH of the following solutions:**

a) [H+] = 2.68 10-10 M

b) [OH] = 5.71 10-1 M

c) pOH = 7.5

d) [H+] = 4.93 10-7 M

e) [H+] = 1.00 10-7 M

f) [OH-]= 1.00 10-4M

g) pOH = 10.2

**2. Calculate the pOH of the following solutions:**

a) [OH-]= 5.02 10-2 M

b) [H+] = 3.79 10-8 M

c) pH = 2.8

d) [OH-] = 1.00 10-3M

e) [H+] = 2.5 10-13 M

**3. Predict the products of the following Neutralization Reactions (you don’t have to balance but you do need to remember your charges):**

1. HCl + Na(OH) → \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. H3(PO4) + Ca(OH)2 → \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. H2(SO4) + Mg(OH)2 → \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. H(NO3) + Al(OH)3 → \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. H2(CO3) + K(OH) → \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. Predict which acids and bases made these salts and water in the following neutralization reactions (you don’t have to balance but you do need to remember your charges):**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_→ Ca(NO3)2 + H(OH)
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_→ KF+ H(OH)
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_→ Al2(SO4)3 + H(OH)
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_→ MgCl2 + H(OH)
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_→ Na3(PO4) + H(OH)