pH Scale

Name: _____

1) What is the concentration of OH- ions in chocolate milk if the [H⁺] is 4.5 x 10⁻⁷ M? Is chocolate milk, acidic, basic, or neutral?

2) What is the [H⁺] in black coffee if the [OH⁻] = 1.3 x 10⁻⁹ M? Is the coffee acidic, basic, or neutral?

3) Calculate the pH and pOH of the following solutions and state whether the solution is acidic, basic, or neutral:

a) [H⁺] = 1.0 x 10⁻⁵ M

c) [H⁺] = 4.2 x 10⁻⁹ M

b) [OH⁻] = 1.0 M

d) [OH⁻] = 3.0 x 10⁻⁴ M

4) Calculate the [H⁺] and [OH⁻] for the solutions whose pH values given below:

a) pH = 4.00

c) pH = 12.66

b) pH = 5.52

d) pH = 7.85

5) A HNO₃ solution is found to have 1.12 g of HNO₃ in every 500 mL of solution. What is the pH of the solution?

Answers: 1) 2.2 x 10⁻⁸ M, acid   3b) pH = 14, pOH = 0   3c) pH = 8.4, pOH = 5.6
4b) [H⁺] = 3.0 x 10⁻⁶ M, [OH⁻] = 3.3 x 10⁻⁹ M   5) 1.4   Adv Chem