

pH-pOH Relationships

Activity 1: Apprentice Difficulty Level

Question 1:

Express your understanding of pH, pOH, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	Acid, Base, or Neutral?
A	2.000		
B		7.000	
C	8.500		
D		4.200	
E	5.800		

Question 2:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	Acid, Base, or Neutral?
A	3.000		
B		4.500	
C	7.000		
D		12.100	
E	10.600		

Question 3:

Express your understanding of pH, pOH, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	Acid, Base, or Neutral?
A	7.000		
B		4.000	
C	2.700		
D		11.600	
E	12.400		

Question 4:

Express your understanding of pH, pOH, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	Acid, Base, or Neutral?
A	13.000		
B		8.500	
C	12.200		
D		5.900	
E	7.000		

Activity 2: Master Difficulty Level

Question 5:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H ₃ O ⁺] mol/L	Acid, Base, or Neutral?
A	3.000		$\times 10$	
B	9.000		$\times 10$	
C		6.000	$\times 10$	
D			1.00×10^{-2}	
E			4.00×10^{-11}	

Question 6:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H ₃ O ⁺] mol/L	Acid, Base, or Neutral?
A	8.000		$\times 10$	
B	4.000		$\times 10$	
C		12.000	$\times 10$	
D			1.00×10^{-9}	
E			2.00×10^{-13}	

Question 7:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	Acid, Base, or Neutral?
A	4.000		x10	
B	12.000		x10	
C		3.000	x10	
D			1.00 x 10 ⁻⁹	
E			5.00 x 10 ⁻²	

Question 8:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	Acid, Base, or Neutral?
A	5.000		x10	
B	12.000		x10	
C		1.000	x10	
D			1.00 x 10 ⁻⁵	
E			6.00 x 10 ⁻¹⁰	

Activity 3: Wizard Difficulty Level

Question 9:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	[OH⁻] mol/L	Acid, Base, or Neutral?
A	3.000		x10	x10	
B		6.000	x10	x10	
C		5.250	x10	x10	
D			2.60×10^{-2}	x10	
E			x10	5.30×10^{-4}	

Question 10:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	[OH⁻] mol/L	Acid, Base, or Neutral?
A	5.000		x10	x10	
B		2.000	x10	x10	
C		8.440	x10	x10	
D			4.90×10^{-5}	x10	
E			x10	7.40×10^{-8}	

Question 11:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	[OH⁻] mol/L	Acid, Base, or Neutral?
A	6.000		x10	x10	
B		3.000	x10	x10	
C		12.620	x10	x10	
D			7.50×10^{-1}	x10	
E			x10	2.60×10^{-6}	

Question 12:

Express your understanding of pH, pOH, ion concentrations, and the identity of a solution as being acidic, basic, or neutral by completing the table.

	pH Value	pOH Value	[H₃O⁺] mol/L	[OH⁻] mol/L	Acid, Base, or Neutral?
A	5.000		x10	x10	
B		10.000	x10	x10	
C		4.920	x10	x10	
D			1.80×10^{-13}	x10	
E			x10	2.80×10^{-9}	