

Fill in the missing numbers in the two tables:

$[\text{H}_3\text{O}^+]$ or $[\text{H}^+]$	$[\text{H}_3\text{O}^+]$ in Scientific Notation	pH	pOH
0.1 M			
0.01 M			
0.001 M			
0.0007 M			
0.0001 M			
0.000001 M			
0.0000003 M			
0.0000001 M			
0.0000000001 M			
0.00000000002 M			

pH	$[\text{H}_3\text{O}^+]$ or $[\text{H}^+]$	pOH	$[\text{OH}^-]$
3.2			
8.2			
		6.4	
	0.0050 M		
			0.0050 M
			2.3×10^{-5} M
	7.8×10^{-4} M		

pOH	$[\text{H}_3\text{O}^+]$ or $[\text{H}^+]$
2.5	
8.2	

CHALLENGE:

pH	$[\text{OH}^-]$
4.9	
5.3	

Helpful equivalencies: $\text{pH} + \text{pOH} = 14$ $[\text{H}^+] \times [\text{OH}^-] = 1.0 \times 10^{-14} = K_w$ $\text{pH} = -\log[\text{H}^+]$ $\text{pOH} = -\log[\text{OH}^-]$