

## Chem 1020 pH Calculations Worksheet

Fill in the empty blanks, and tell whether the solution will be acidic, basic, or neutral.

\*Perform the starred problems *without* a calculator.

Fun fact: for a pH or pOH value, the only sig figs are the numbers to the right of the decimal point. So, pH = 4.73 has 2 sig figs. Why? The digits to the left of the decimal correspond with the power of 10, and thus have no uncertainty. All of the values in this table have 3 sig figs!

(Please let me know ASAP if you think any of these values are incorrect.)

	$[\text{H}_3\text{O}]^+$	$[\text{OH}]^-$	pH	pOH	Acidic/Basic/Neutral
1.	$2.35 \times 10^{-3}$	$4.26 \times 10^{-12}$	2.629	11.371	acidic
2.	$2.03 \times 10^{-7}$	$4.93 \times 10^{-8}$	6.693	7.307	acidic
3.	$4.79 \times 10^{-9}$	$2.09 \times 10^{-6}$	8.320	5.680	basic
4.	$1.86 \times 10^{-4}$	$5.37 \times 10^{-11}$	3.730	10.270	acidic
5.	$3.72 \times 10^{-10}$	$2.69 \times 10^{-5}$	9.429	4.571	basic
6.	$1.00 \times 10^{-7}$	* $1.00 \times 10^{-7}$	7.000	7.000	neutral
7.	$2.63 \times 10^{-3}$	$3.80 \times 10^{-12}$	2.580	11.420	acidic
8.	$1.82 \times 10^{-9}$	$5.50 \times 10^{-6}$	8.740	5.260	basic
9.	* $1.00 \times 10^{-3}$	$1.00 \times 10^{-11}$	3.000	11.000	acidic
10.	$2.34 \times 10^{-13}$	$4.27 \times 10^{-2}$	12.630	1.370	basic
11.	$1.00 \times 10^{-8}$	$1.00 \times 10^{-6}$	*8.000	6.000	basic
12.	$1.10 \times 10^{-12}$	$9.12 \times 10^{-3}$	11.960	2.040	basic