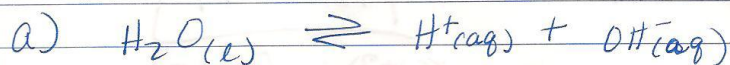


18.1 HW problems

Grey textbook - pg. 711

#16.30



b)  $K_w = [H^+][OH^-]$

\*note no  $[H_2O]$  as it is pure liquid and its concentration will not measurably change.

c)  $[OH^-] > [H^+]$

\*not related to pH. - not the definition of acidity/basicity

16.33  $[H^+] = 3.5 \times 10^{-8} M$   
 $[OH^-] = \quad \quad \quad "$

16.39	$[H^+] M$	$[OH^-] M$	pH	pOH	Acidic or Basic?
	$7.5 \times 10^{-5}$	$1.3 \times 10^{-12}$	2.12	11.88	acidic
	$2.8 \times 10^{-5}$	$3.6 \times 10^{-10}$	4.56	9.44	acidic
	$5.6 \times 10^{-9}$	$1.8 \times 10^{-6}$	8.25	5.75	basic
	$5.0 \times 10^{-9}$	$2.0 \times 10^{-6}$	8.30	5.70	basic

16.39 done

No. 41

$$pH = 7.40$$

$$K_w = 2.4 \times 10^{-14} @ 37^\circ C$$

$$[H^+] = 10^{-7.40} = 4 \times 10^{-8} M$$

$$K_w = 2.4 \times 10^{-14} = [H^+] \times [OH^-]$$

$$[OH^-] = \frac{2.4 \times 10^{-14}}{4 \times 10^{-8}} = 6 \times 10^{-7} M$$

$$pOH = -\log(6 \times 10^{-7}) = 6.22$$