1). For a 0.090 M solution of HCl, calculate: [H+], pH, pOH, and [OH-]

2). The same calculations for a 1.0 x 10-12 M solution of HBr.

Solution:

1) $[H^+] = 0.090$;

pH = -LOG [0.090] = 1.046;

pOH = 14 – pH = 12.95;

$[OH^-] = 10^{-pOH} = 1.12 \times 10^{-13}$.

2). $[H^+] = 1.0 \times 10^{-12}$;

pH = -LOG $[1.0 \times 10^{-12}]$ = 12;

pOH = 14 – pH = 2;

$[OH^-] = 10^{-pOH} = 0.010$.

1) Answer: $[H^+] = 0.090$;

pH = 1.046;

pOH = 12.95;

$[OH^-] = 1.12 \times 10^{-13}$ = 1.12E-13.

2). $[H^+] = 1.0 \times 10^{-12}$ = 1.00E-12;

pH = 12;

pOH = 2;

$[OH^-] = 0.010$.