

H₂O

Formic Acid $\text{HC}(=\text{O})\text{OH}$ ^{.1M} $K_a = 1.8 \times 10^{-4}$

Sodium Formate (NaCO_2H)

Nitric Acid (HNO_3)

Buffer 7.0

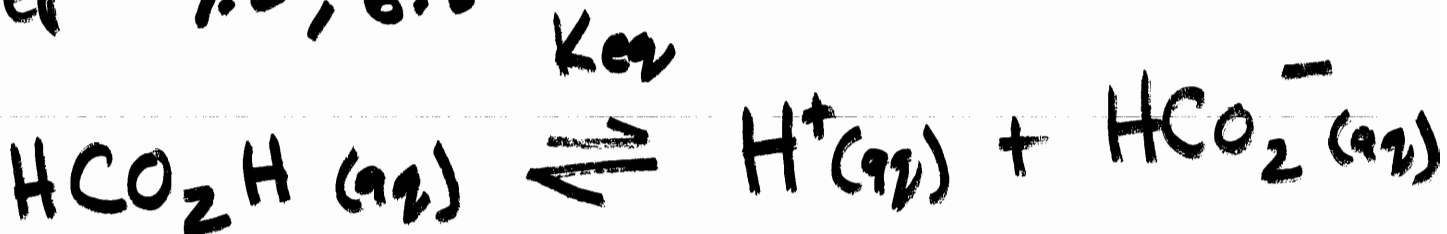
#1 8.2 —

#2 1.9 —

#3 2.4 —

#4 7.2

Water 7.5, 6.8





$$K_{eq} = 1 \times 10^{-9} = \frac{[H^+][A^-]}{[HA]}$$

0.1 M HA
 $x = [H^+]$

$$\frac{1 \times 10^{-9}}{.1 - x} = \frac{(x)(x)}{.1 - x}$$

$$\approx \frac{x^2}{.1}$$

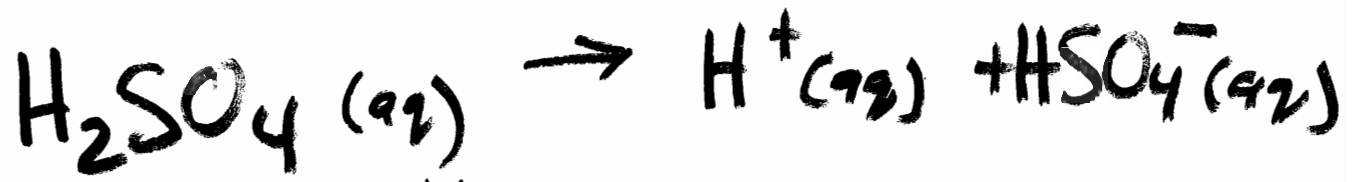
$$x^2 = (1 \times 10^{-9})(.1)$$

$$= (1 \times 10^{-10})$$

$$x = 1 \times 10^{-5}$$

	HA	H ⁺	A ⁻
i	.1	0	0
Δ	-x	+x	+x
f	.1-x	x	x

$$\% \text{ ioniz} = \frac{[H^+]_{eq}}{[HA]_0} \times 100 = \frac{1 \times 10^{-5}}{0.1} \times 100 = .01\%$$



Poly protic

Carbonate (H_2CO_3) ($\text{CO}_2 + \text{H}_2\text{O}$)

Phosphoric (H_3PO_4)