

Solutions

Each answer shows the steps, then the **result**.

2.1

- $\text{p}K_a = 4$

2.2

- Acid A ($\text{p}K_a = 2$)

2.3

- $\text{pH} = \text{p}K_a$

3.1 B

- a smaller $\text{p}K_a$

3.2

(a)

- 3, 5, 9

(b)

- strongest to weakest: $K_a = 10^{-3}$, then 10^{-5} , then 10^{-9} (smallest $\text{p}K_a$ first)

3.3

- The acid form (HA) dominates — below $\text{pH} = \text{p}K_a$ there is more H^+ , which keeps the acid protonated