

Solutions

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

2.1

- They are equal (in the stoichiometric ratio)

2.2

- $\text{p}K_a$

2.3

- 7

3.1 B

- greater than 7

3.2

(a)

- 10.0 mL (half of 20.0)

(b)

- $\text{p}K_a = \text{pH} = 4.7$; $K_a = 10^{-4.7} = 2.0 \times 10^{-5}$

3.3

- At equivalence all the acid has become its conjugate base A^- , which is a weak base and reacts with water to give OH^- , raising the pH above 7