Buffer Prep Calcs a.a. = acetic acid

- What volume of 2.5 M Sodium acetate is needed to make 250 mL acetic acid / Acetate buffer @ assigned pH?

$$M_1 V_1 = M_2 V_2$$

- if $[Ac^-] = 0.2M$, what is concentration of a.a. in the 250 mL buffer soln at assigned pH?

$$pH = pka + \log \frac{[Ac^-]}{[HAc]} \Rightarrow \text{assigned } pH = 4.47 - \log \frac{[HAc]}{[Ac^-]}$$

$$[HAc] = \left(10^{(4.47 - \text{assigned pH})}\right)\left((0.2M)\right)$$

($0.2M$ ← $[Ac^-]$)

- Volume of 6 M a.a. needed to prepare 250 mL buffer soln at assigned pH?

$$M_1 V_1 = M_2 V_2$$

$$V\ 6.0M\ a.a. = [HAc](250\ mL) / (6.0M)$$

- Mass $NaHCO_3$ needed to make buffer soln in 0.10 M Sodium hydrogen Carbonate?

Mw $NaHCO_3$ = 84.01 g/mol

V = 0.250 L

I trust you can go from molarity to grams by now. 😊