(4) Method 2

$NaOH + HCl \longrightarrow NaCl + H_2O$

$M_1V_1 = M_2V_2$

$NaOH \qquad HCl$

$0.355M \times 0.100L = 0.125M \times V_2$

$0.284L = V_2$ of HCl

(5) $Al(OH)_3 + 3HCl \longrightarrow AlCl_3 + 3H_2O$

$M_1V_1 = M_2V_2$ (x mole Ratio)

$Al(OH)_3 \qquad HCl$

$$\left((0.125M)(100mL) = (0.125M)(?mL) \right)\left(\frac{3HCl}{1Al(OH)_3} \right)$$

$100mL = mL$ of HCl

$$100mL \times \frac{3HCl}{1Al(OH)_3} = 300mL \text{ total of HCl}$$