

6a) $50.00 \times 10^{-3} \text{ L} \frac{0.200 \text{ mol}}{1 \text{ L}} = 1.00 \times 10^{-2} \text{ mol NaOH}$
 is neutralized



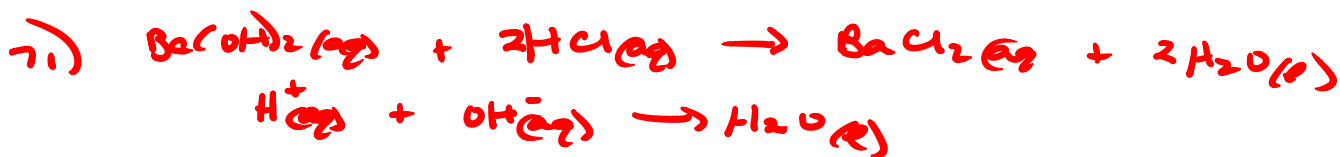
$1.00 \times 10^{-2} \text{ mole NaOH} \frac{1 \text{ mole HCl}}{1 \text{ mole NaOH}} \Bigg| \frac{1 \text{ L}}{0.100 \text{ mole HCl}} = 0.100 \text{ L}$



$1.00 \times 10^{-2} \text{ mol NaOH} \frac{1 \text{ mole HNO}_3}{1 \text{ mole NaOH}} \Bigg| \frac{1 \text{ L}}{0.150 \text{ mole HNO}_3} = 6.67 \times 10^{-2} \text{ L}$



$1.00 \times 10^{-2} \text{ mole NaOH} \frac{1 \text{ mole HC}_2\text{H}_3\text{O}_2}{1 \text{ mole NaOH}} \Bigg| \frac{1 \text{ L}}{0.200 \text{ mole HC}_2\text{H}_3\text{O}_2} = 5.00 \times 10^{-2} \text{ L}$



$0.0750 \text{ L} \frac{0.250 \text{ mol HCl}}{1 \text{ L}} = 1.88 \times 10^{-2} \text{ mol HCl}$

$0.225 \text{ L} \frac{0.0550 \text{ mole Ba(OH)}_2}{1 \text{ L}} = 1.24 \times 10^{-2} \text{ mole Ba(OH)}_2$

H^+	+	OH^-	\rightarrow	H_2O
1.88×10^{-2}		$2(1.24 \times 10^{-2})$		
-		-		
1.88×10^{-2}		1.88×10^{-2}		
0				6.0×10^{-3}

$M_{\text{OH}^-} = \frac{6.0 \times 10^{-3} \text{ mol}}{0.0750 + 0.2250 \text{ L}}$
 $= 2.0 \times 10^{-2} \text{ M}$



$$2.416 \times 10^{-2} \text{ L} \frac{0.106 \text{ mole NaOH}}{\text{L}} \left| \frac{1 \text{ mole HCl}}{1 \text{ mole NaOH}} \right. = 2.56 \times 10^{-3} \text{ mole HCl}$$

$$M_{\text{HCl}} = \frac{2.56 \times 10^{-3} \text{ mole}}{2.500 \times 10^{-2} \text{ L}} = 0.102 \text{ M HCl}$$



$$3.500 \times 10^{-2} \text{ L HNO}_3 \frac{0.0500 \text{ mole HNO}_3}{\text{L}} \left| \frac{1 \text{ mole Ca(OH)}_2}{2 \text{ mole HNO}_3} \right| \frac{1 \text{ L}}{0.0200 \text{ mol Ca(OH)}_2} =$$

$$0.0438 \text{ L}$$