

$$\frac{\sum_i w_i x_i}{\sum_i w_i} = \frac{\sum_{i=1}^k w_i x_i + \sum_{i=k+1}^N w_i x_i}{\sum_{i=1}^k w_i + \sum_{i=k+1}^N w_i} \quad (1)$$

$$\frac{\bar{x}^{(k)} + \bar{x}^{(k+1)}}{\bar{w}^{(k)} + \bar{w}^{(k+1)}} \quad (2)$$