

$$Q_n = \frac{\sum_{k=0}^{n-1} R_k}{n}$$

$$Q_n = \frac{\sum_{k=0}^{n-1} W_k R_k}{\sum_{k=0}^{n-1} W_k}$$

$$W_k = \frac{\prod_t p(s_{k+1}|s_k, a_t) \prod (a_t | s_t)}{\prod_t p(s_{k+1}|s_k, a_t) \prod (a_t | s_t)}$$

$$W_k = \prod \frac{\pi(a_t | s_t)}{p(a_t | s_t)}$$

$$C_n = \sum_{k=0}^{n-1} W_k$$

$$Q_{n+1} = \frac{\sum_{k=0}^{n-1} W_k R_k + W_n R_n}{\sum_{k=0}^{n-1} W_k + W_n}$$

$$\sum_{k=0}^{n-1} W_k = C_n$$

$$Q_n = \frac{\sum_{k=0}^{n-1} W_k R_k}{C_n}$$

$$Q_{n+1} = \frac{C_n Q_n + W_n R_n + W_n Q_n - W_n Q_n}{C_n + W_n}$$

$$Q_{n+1} = Q_n + \frac{W_n}{C_n + W_n} (R_n - Q_n)$$