

$$X(n) = 4X(n-1) \quad n > 1, X(1) = 7$$

$$X(n) = 4X(n-1)$$

$$X(n-1) = 4X(n-2)$$

$$X(n-2) = 4X(n-3)$$

$$X(n-1) = 16X(n-3) = 4(4X(n-3))$$

$$X(n) = 64X(n-3) = 4(16X(n-3))$$

$$\text{After } K \text{ iterations} \rightarrow X(n) = 4^K X(n-K)$$

$$\text{Call } n-K=1 \rightarrow K=n-1 \text{ \& } X(n) = 4^{n-1} (7)$$

$$X(n) = \left(\frac{7}{4}\right) 4^n$$