

HW 5

① (a) $a(n+4) = 0 \cdot a(n+3) - 5a(n+2) + 0 \cdot a(n+1) - 6a(n)$

(b) $A = \begin{bmatrix} 0 & -5 & 0 & -6 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$

(c) i) $-6(0) - 5(3) = -15 = a(4)$ $-5(4) - 6(2) = -32 = a(5)$

ii) $A^2 = \begin{bmatrix} 5 & 0 & 6 & 0 \\ 0 & -5 & 0 & -6 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix} \begin{bmatrix} 4 \\ 3 \\ 2 \\ 0 \end{bmatrix} = \begin{bmatrix} -32 \\ -15 \\ 4 \\ 3 \end{bmatrix}$ -32 ✓

② $L = \begin{bmatrix} 0 & 1.5 & .9 & .5 & .3 \\ .8 & 0 & 0 & 0 & 0 \\ 0 & .7 & 0 & 0 & 0 \\ 0 & 0 & .6 & 0 & 0 \\ 0 & 0 & 0 & .6 & 0 \end{bmatrix}$