For a prime factor FFT the following 2D DFT is used:

$$X[k_1, k_2] = \sum_{n_2=0}^{N_2-1} W_{N_2}^{n_2 k_2} \left(\sum_{n_1=0}^{N_1-1} x[n_1, n_2] W_{N_1}^{n_1 k_1} \right)$$

(a) **40 pts)** Complete the following table for the index map for a $N = 12$ and $N_1 = 2$ and $N_2 = 6$ FFT with: $n = 6n_1 + n_2$, and $k = k_1 + 2k_2$

n_1	n_2					
	0	1	2	3	4	5
0	0	1	2	3	4	5
1	6	7	8	9	10	11

k_1	k_2					
	0	1	2	3	4	5
0	0	2	4	6	8	10
1	1	3	5	7	9	11

(b) **(60 pts)** Complete the SFG (for $x[n]$, $X[k]$ and twiddle factors) for the FFT: