Initial state probabilities					
1	2	3	4	5	6
1/6	1/6	1/6	1/6	1/6	1/6

Observations vector (Y1…YT)													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	1	1	2	2	1	1	1	1	2	2	1	2

Transition Probabilities (Matrix A)						
	1	2	3	4	5	6
6	0.3				0.3	0.4
5				0.3	0.4	0.3
4			0.3	0.4	0.3	
3		0.3	0.4	0.3		
2	0.3	0.4	0.3			
1	0.4	0.6				

Emission probabilities (Matrix B)		
Level	Det	No Det
6	0	1
5	0	1
4	0	1
3	0.1	0.9
2	0.5	0.5
1	0.9	0.1

Computing alpha 1							
	alpha0	P(X=1)	alpha0 * P(X=1)	P(X=2)	alpha0 * P(X=2)	P(X=3)	alpha0 * P(X=3)
6	1/6	0.3	0.05		0		0
5	1/6		0		0		0
4	1/6		0		0	0.3	0.05
3	1/6		0	0.3	0.05	0.4	0.0667
2	1/6	0.3	0.05	0.4	0.0667	0.3	0.05
1	1/6	0.4	0.0667	0.6	0.1		0
		Sum	0.1667	Sum	0.2167	Sum	0.1667
		Sum*P(B=1 | ND)	0.0167	Sum*P(B=2 | ND)	0.1083	Sum*P(B=3 | ND)	0.1500

Hidden State of X (probability mass function)						
	alpha0	alpha1	alpha2	alpha3	alpha4	alpha5
6	1/6					
5	1/6					
4	1/6					
3	1/6	0.1500				
2	1/6	0.1083				
1	1/6	0.0167				
		No detection	No detection	No detection	No detection	Detection