INFORMATION RETRIEVAL – SHORT EXERCISES VI – INDEX CONSTRUCTION AND COMPRESSION

I. Consider the following fragment of a term-based positional index in the format:

term: doc1: <position1,position2,…>; doc2: <position1,…>; etc.

Gates: 1: <3>; 2: <6>; 3: <2,17>; 4: <1>;

IBM: 4: <3>; 7: <14>;

Microsoft: 1: <1>; 2: <1,21>; 3: <3>; 5: <16,22,51>;

The **/k** operator, **word1 /k word2** finds occurrences of word1 within k words of word2 (on either side), where **k** is a positive integer argument. Which document(s) satisfy the query "**Gates /2 Microsoft**"?

Answer: 1: [3] 3: [2]
1: [1] 3: [3]

II. Build a suffix array for "couscous$" using the *qsufsort* algorithm.

	i	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
h	x_i	c	o	u	s	c	o	u	s	$
	A[i]	9	1	5	2	6	4	8	3	7
	V[A[i]]	1	3	3	5	5	7	7	9	9
1	**V[A[i]+h]**		5	5	9	9	3	1	7	7
	A[i]	9	1	5	2	6	8	4	3	7
	V[A[i]]	1	3	3	5	5	6	7	9	9
2	**V[A[i]+h]**		9	9	7	6			3	1
	A[i]	9	1	5	6	2	8	4	7	3
	V[A[i]]	1	3	3	4	5	6	7	8	9
4	**V[A[i]+h]**		3	1						
	A[i]	9	5	1	6	2	8	4	7	3

III. Encode 15 in γ. Answer: 0001111

IV. Decode 00111000001 written in the δ-code. Answer: N+1 = 00111 = 7 => N = 6
Answer: 2^6 + 1 = 65