

$n = 9$ .

The weights of internal nodes (successful searches) are  $P$ ;  
weights of external nodes (unsuccessful searches) are  $Q$ ;

$$P = (21, 68, 84, 2, 69, 38, 84, 51, 71)$$

$$Q = (43, 31, 19, 20, 69, 31, 55, 16, 70, 38)$$

Entries  $c[ij]$  are added to table in order  $t = 0, 1, 2, \dots, n$ , where  $t = j - i$ .

	0	1	2	3	4	5	6	7	8	9
0	0									
1	0	0								
2	0	0	0							
3	0	0	0	0						
4	0	0	0	0	0					
5	0	0	0	0	0	0				
6	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0		
8	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0

Table 1:  $t = 0$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95								
1	0	0	118							
2	0	0	0	123						
3	0	0	0	0	91					
4	0	0	0	0	0	169				
5	0	0	0	0	0	0	124			
6	0	0	0	0	0	0	0	155		
7	0	0	0	0	0	0	0	0	137	
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 2: Step  $t = 1$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227							
1	0	0	118	340						
2	0	0	0	123	285					
3	0	0	0	0	91	282				
4	0	0	0	0	0	169	386			
5	0	0	0	0	0	0	124	348		
6	0	0	0	0	0	0	0	155	413	
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 3: Step  $t = 2$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504						
1	0	0	118	340	502					
2	0	0	0	123	285	576				
3	0	0	0	0	91	282	499			
4	0	0	0	0	0	169	386	686		
5	0	0	0	0	0	0	124	348	606	
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 4: Step  $t = 3$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725					
1	0	0	118	340	502	793				
2	0	0	0	123	285	576	796			
3	0	0	0	0	91	282	499	821		
4	0	0	0	0	0	169	386	686	1006	
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 5: Step  $t = 4$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725	1016				
1	0	0	118	340	502	793	1103			
2	0	0	0	123	285	576	796	1120		
3	0	0	0	0	91	282	499	821	1141	
4	0	0	0	0	0	169	386	686	1006	1361
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 6: Step  $t = 5$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725	1016	1326			
1	0	0	118	340	502	793	1103	1436		
2	0	0	0	123	285	576	796	1120	1499	
3	0	0	0	0	91	282	499	821	1141	1496
4	0	0	0	0	0	169	386	686	1006	1361
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 7: Step  $t = 6$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725	1016	1326	1723		
1	0	0	118	340	502	793	1103	1436	1815	
2	0	0	0	123	285	576	796	1120	1499	1896
3	0	0	0	0	91	282	499	821	1141	1496
4	0	0	0	0	0	169	386	686	1006	1361
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 8: Step  $t = 7$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725	1016	1326	1723	2102	
1	0	0	118	340	502	793	1103	1436	1815	2279
2	0	0	0	123	285	576	796	1120	1499	1896
3	0	0	0	0	91	282	499	821	1141	1496
4	0	0	0	0	0	169	386	686	1006	1361
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 9: Step  $t = 8$ .

	0	1	2	3	4	5	6	7	8	9
0	0	95	227	504	725	1016	1326	1723	2102	2566
1	0	0	118	340	502	793	1103	1436	1815	2279
2	0	0	0	123	285	576	796	1120	1499	1896
3	0	0	0	0	91	282	499	821	1141	1496
4	0	0	0	0	0	169	386	686	1006	1361
5	0	0	0	0	0	0	124	348	606	961
6	0	0	0	0	0	0	0	155	413	719
7	0	0	0	0	0	0	0	0	137	383
8	0	0	0	0	0	0	0	0	0	179
9	0	0	0	0	0	0	0	0	0	0

Table 10: Final entry:  $t = 9$ .

	0	1	2	3	4	5	6	7	8	9
0	0	1	2	2	3	3	3	5	5	5
1	0	1	2	3	3	3	3	5	5	5
2	0	0	2	3	3	3	5	5	5	7
3	0	0	0	3	4	5	5	6	7	7
4	0	0	0	0	4	5	5	6	7	7
5	0	0	0	0	0	5	6	7	7	7
6	0	0	0	0	0	0	6	7	7	8
7	0	0	0	0	0	0	0	7	8	9
8	0	0	0	0	0	0	0	0	8	9
9	0	0	0	0	0	0	0	0	0	9

Table 11:  $K_c(i, j)$ . Shaded entries correspond to optimal subtrees appearing in final tree.

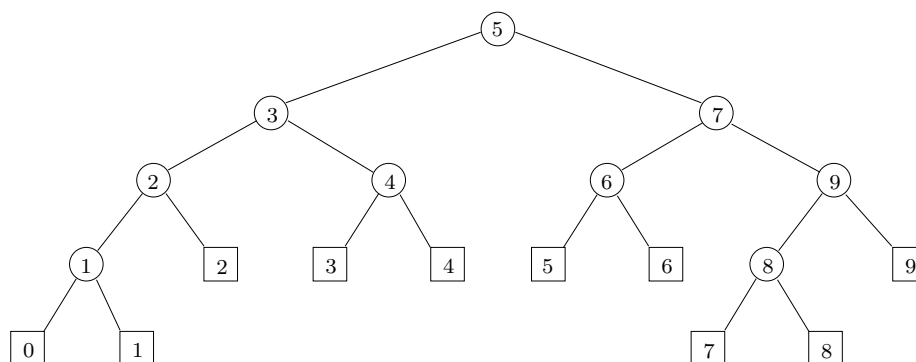


Figure 1: The Optimal tree. Internal labels are  $p_i$  indices; leaf labels are  $q_i$  indices.