

(a) In my case,  $n_1 = 118$ ,  $n_2 = 4$ ,  $n_3 = 75$  and  $n_4 = 1$ .

0	1	2	3	4	5	6	7	8	9	10	11	12
107												
79	107											
79	107	118										
59	79	107	118									
4	59	79	107	118								
4	59	62	79	107	118							
4	23	59	62	79	107	118						
4	23	47	59	62	79	107	118					
4	23	47	59	62	75	79	107	118				
4	19	23	47	59	62	75	79	107	118			
4	19	23	24	47	59	62	75	79	107	118		
1	4	19	23	24	47	59	62	75	79	107	118	
1	4	6	19	23	24	47	59	62	75	79	107	118

(b)

0	1	2	3	4	5	6	7	8	9	10	remarks
54	28	39	8	17	20	21	5	2	15	1	
1	28	39	8	17	20	21	5	2	15		replace root with the far right node on lowest level
39	28	1	8	17	20	21	5	2	15		1st downheap, candidates were indices 1 and 2
39	28	21	8	17	20	1	5	2	15		2nd downheap, candidates were indices 5 and 6 done, no more candidates