

(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 |