

Problem 1

课本练习10简答题的3(每小题4分),4(每小题3分); 练习11简答题的1,3,4,7,10题,每题5分.请在problem1文件夹上传.docx或.pdf文件,命名格式为problem1.docx或problem1.pdf.(总74')

10.3: 89 21 114 711 5 90 212 16 50

11) 89
 21 89
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 21 89 114 711
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 5 16 21 89 90 114 211 711
 5 16 21 50 89 90 114 211 711
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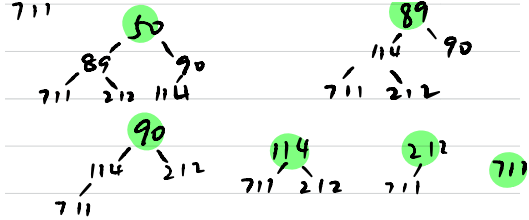
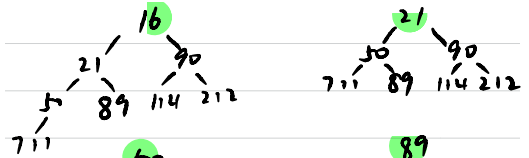
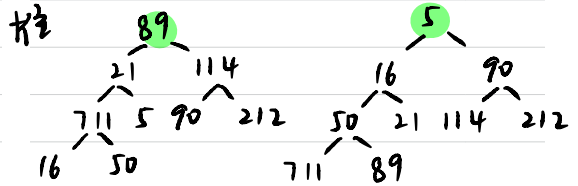
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11) 21 89 114 711 5 90 16 212 50
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4) 89 21 114 711 5 90 212 16 50

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17) 89 21 114 711 5 90 212 16 50

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10.4 (1) $O(N)$ (2) $O(N)$

(3) $O(N \log N)$

$$T(N) = 2T\left(\frac{N}{2}\right) + N$$

$$T(N)/N = T\left(\frac{N}{2}\right)/\frac{N}{2} + 1$$

$$T(N)/N = T(1)/1 + \log_2 N$$

$$\Rightarrow T(N) = N \log N$$

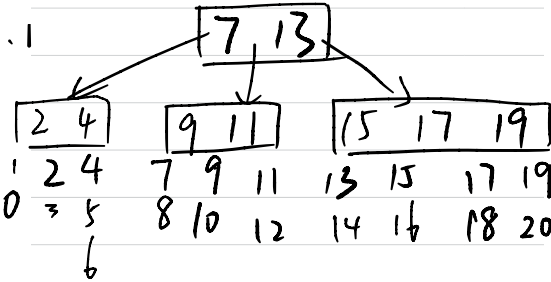
(4) $O(N^2) = \frac{N(N+1)}{2}$

(5) $O(N \log N)$

(6) $O(N) = N$

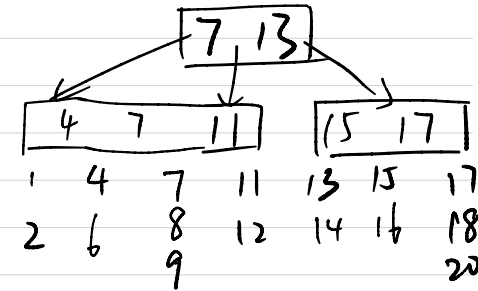
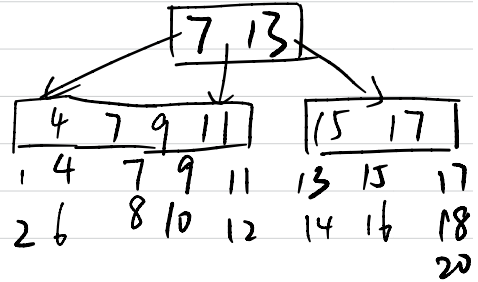
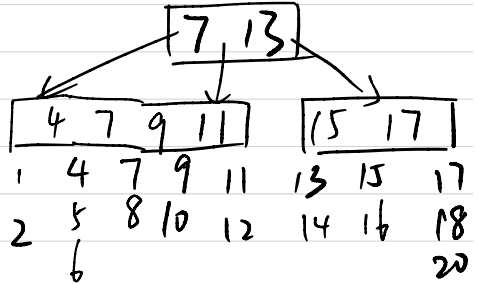
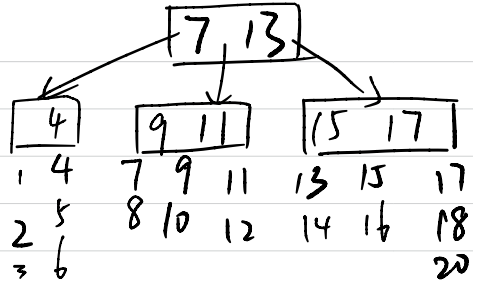
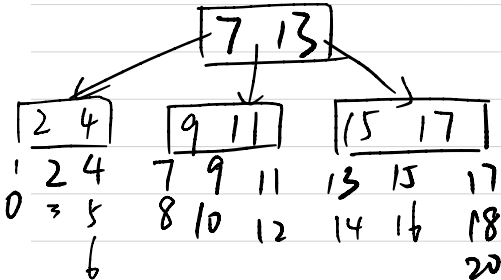
(7) $O(N^2)$

11.1



11.3

Ans) 19 0 3 5 10



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11.4

5 2 34 10 4 23 3 54 33
1 7 12 26 11 40 18 35 15 27

2 ← 2 5 34 ← 10

5 ← 5 10 34 ← 4

10 ← 10 34 4 ← 23

23 ← 23 34 4 ← 3

34 ← 34 3 4 ← 54

54 ← 54 3 4 ← 33

3 ← 3 4 33 ← 1

4 ← 4 33 1 ← 7

7 ← 7 33 1 ← 12

12 ← 12 33 1 ← 26

26 ← 26 33 1 ← 11

33 ← 33 1 11 ← 40

1 ← 1 11 40 ← 18

11 ← 11 18 40 ← 35

18 ← 18 35 40 ← 15

35 ← 35 40 15 ← 27

40 ← 40 15 27

15 ← 15 27

27 ← 27

共4个初始片段

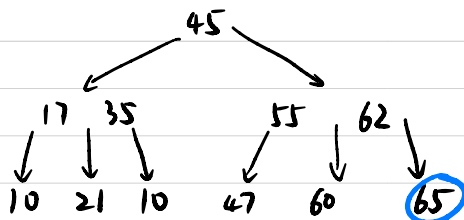
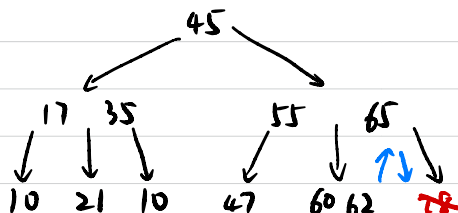
① 2 5 10 23 34 54

② 3 4 7 12 26 33

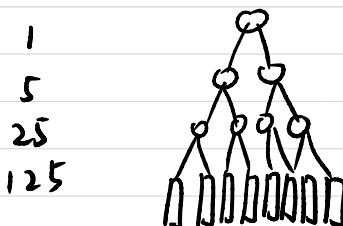
③ 1 11 18 35 40

④ 15 27

11.7



11.10



$$S = 125 \times 11$$

即最多存 1375 个数据.