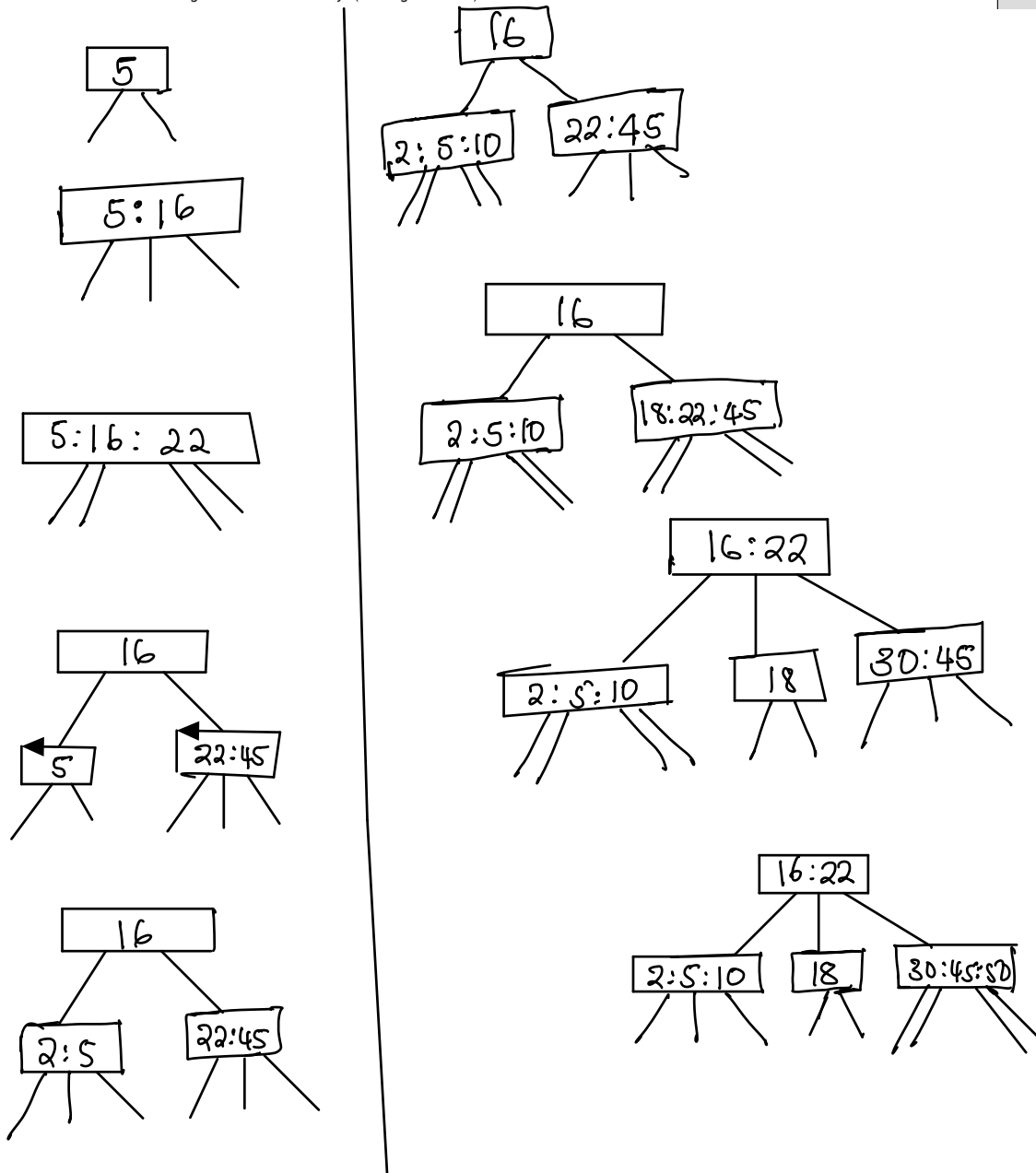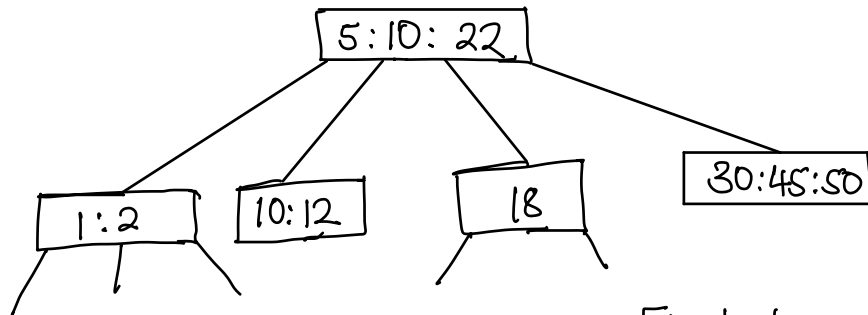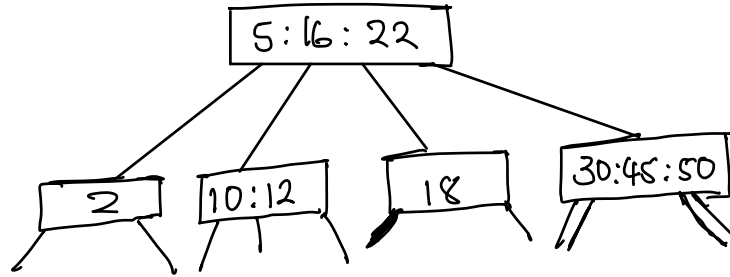# Q1.

Exercises

[based on a problem from Goodrich & Tamassia] Consider the sequence of keys

```
5, 16, 22, 45, 2, 10, 18, 30, 50, 12, 1
```

Draw the result of inserting entires with these keys (in the given order) into

5

5:16

5:16: 22

16
 5   22:45

16
 2:5   22:45

16
 2:5:10   22:45

16
 2:5:10   18:22:45

16:22
 2:5:10   18   30:45

16:22
 2:5:10   18   30:45:50

Q2:

5 : 16 : 22

2   10:12   18   30:45:50

5 : 10 : 22

1:2   10:12   18   30:45:50

Final tree → 2-3-4.

Red, Black Tree.

16

5   22

2   12   18   45

1   10   86   50