Cutting a rod

（a)

Draw the recursion tree for a rod of length 5

CR(5)

CR(4) CR(3) CR(2) CR(1)

CR(3) CR(2) CR(2) CR(1) CR(1) CR(0) CR(0)

CR(2) CR(1) CR(1) CR(0) CR(1)CR(0) CR(0) CR(0)

CR(1)CR(0) CR(0) CR(0) CR(0)

CR(0)

(b)

length | 1 2 3 4 5 6 7 8

price | 1 5 8 9 10 17 17 20

assume length n = 4

P1=1 P2=5 P3=8 P4=9 by greedy 8/3= 2.667 has max density

so we cut of the piece of length 3 the remaining will be length 1 with price 1 total price will be 8+1=9

but optimal solution will be when we cut off length 2 . and will give us 5+5=10 which is better than 9.