

CS????: Course Name

Homework ??

YoungZ2357

Student ID: ????????

Collaborators: No collaborators

Due: Day, Date

1 Problem 1

This is the description about the problem.

1.1 Problem 1 Part 1

Insert an image:



Figure 1: THIS IS ME!!!

1.2 Problem 1 Part 2

Proof example:

$$\begin{aligned} T(n) &= \sum_{i=2}^{\frac{1}{2}n-1} \log(n-2i) + T(0) \\ &= (\log(n) + \log(n-2) + \log(n-4) + \cdots + \log(2)) \\ &= (\log(2 \cdot 4 \cdot \cdots \cdot (n-4) \cdot (n-2) \cdot n)) \\ &= \log(2^{\frac{n}{2}} (1 \cdot 2 \cdot 3 \cdot \cdots \cdot \frac{n}{2})) \\ &= \log(2^{\frac{n}{2}} (\frac{n}{2}!)) \\ &= \frac{n}{2} \log(2) + \log((\frac{n}{2})!) \end{aligned}$$

2 Problem 2

Table example:

i	$p(i)$	$\text{OPT}(i)$	Comparison(use v.s. not use)	interval i included(local)
0	N/A	0	N/A	N/A
1	0	$\text{OPT}(p(1)) + v_1 = 0 + 20 = 20$	$\text{OPT}(p(1)) + v_1 > \text{OPT}(1-1)$	Yes
2	1	$\text{OPT}(p(2)) + v_2 = 20 + 18 = 38$	$\text{OPT}(p(2)) + v_2 > \text{OPT}(1)$	Yes
3	0	$\text{OPT}(p(3)) + v_3 = 0 + 70 = 70$	$\text{OPT}(p(3)) + v_3 > \text{OPT}(2)$	Yes
4	2	$\text{OPT}(4-1) = 70$	$\text{OPT}(p(4)) + v_4 < \text{OPT}(3)$	No
5	1	$\text{OPT}(p(5)) + v_5 = 20 + 90 = 110$	$\text{OPT}(p(5)) + v_5 > \text{OPT}(4)$	Yes
6	4	$\text{OPT}(6-1) = 110$	$\text{OPT}(p(6)) + v_6 < \text{OPT}(5)$	No

Table 1: I actually lost 8 points for this wrong answer

3 Problem 3

Describe with unordered list:

- Point 1
- Point 2
- Point 3