

#LI ZONGZE# 收件人: ⊗ Lihui CHEN

Dear Professor Chen,

← 答复 ← 全部答复 → 转发 🔯 周日 2025/5/4 11:09

I hope this email finds you well. I'm writing to follow up on my previous message regarding pruning and node exploration in tree search (Figure 1). Since I haven't yet received a response, I wanted to kindly reiterate the query and provide additional clarity to facilitate your review.

After further analysis, I've identified four possible interpretations of the scenario (illustrated in Figures 2–5). To resolve the ambiguity in pruning behavior when a node has multiple parents, could you please confirm which of the following is correct?

o Do not explore node V.

1. Answer 1 (Figure 2):

- Propagate R = 5 upward and update T = 5.
- 2. Answer 2 (Figure 3):

Propagate R = 6 upward and update T = 6.

o Explore node V, update R from 5 to 6.

3. Answer 3 (Figure 4):

o Perform pruning on the R-V branch while allowing S-V exploration.

o Duplicate node V (create two copies).

4. Answer 4 (Figure 5):

- Keep node V as a single instance.
- o Prune the R-V branch but allow normal exploration of the S-V branch.

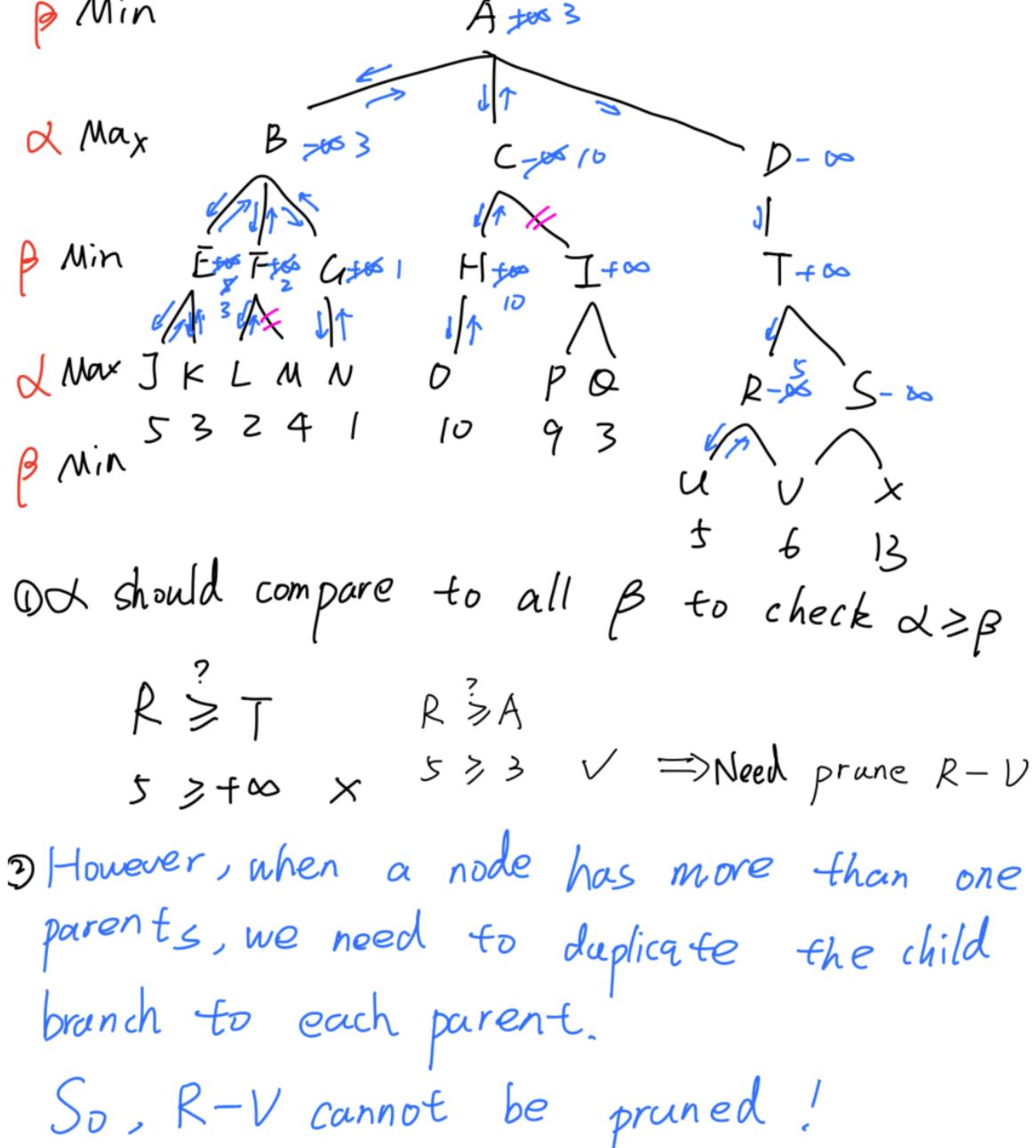
The crux of the confusion lies in whether node duplication is required (Answer 3) or if selective pruning

(Answer 4) can apply to specific branches without duplication. Your expertise in confirming the correct approach would be invaluable to resolving this conceptual challenge.

I've reattached Figures 2–5 for your convenience. Thank you for your time and guidance—I truly appreciate your support.

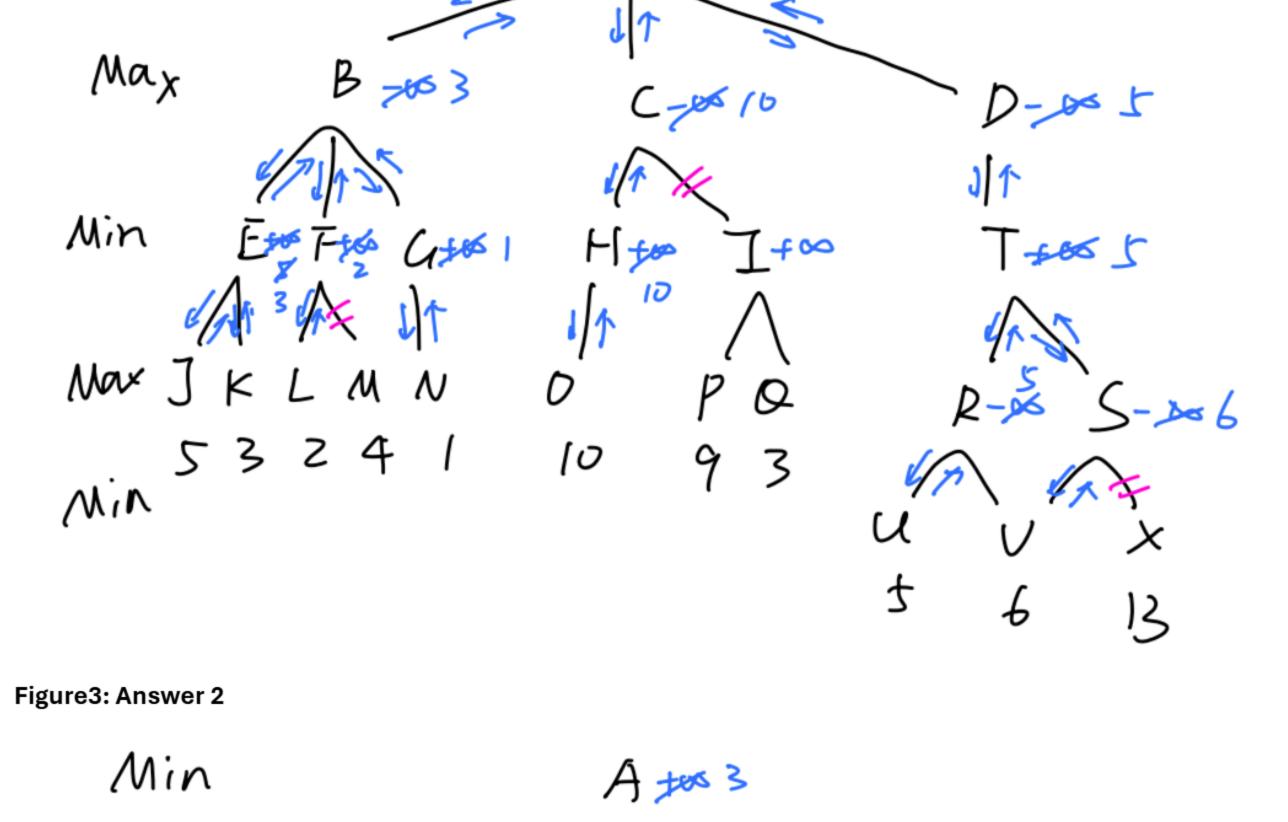
Best regards, Zongze Li

Figure 1: Quesiton



Min

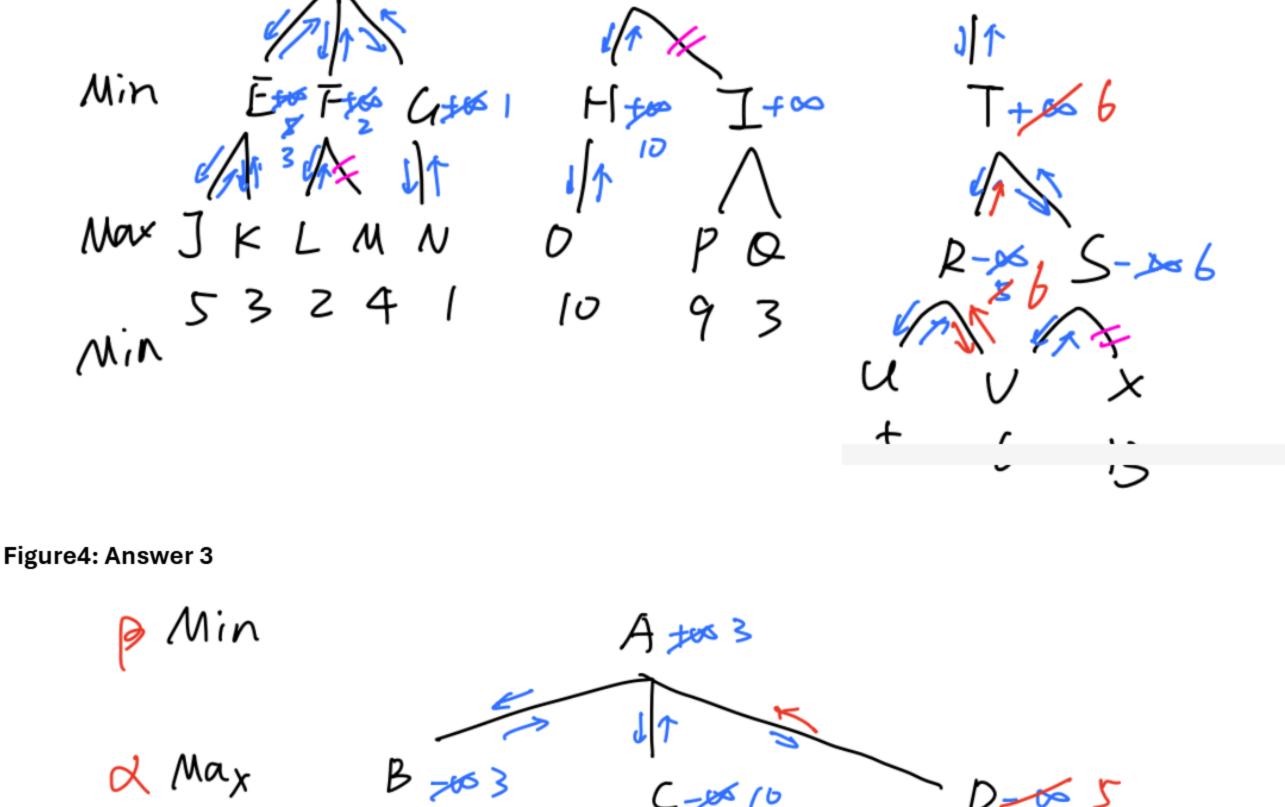
Figure 2: Answer 1

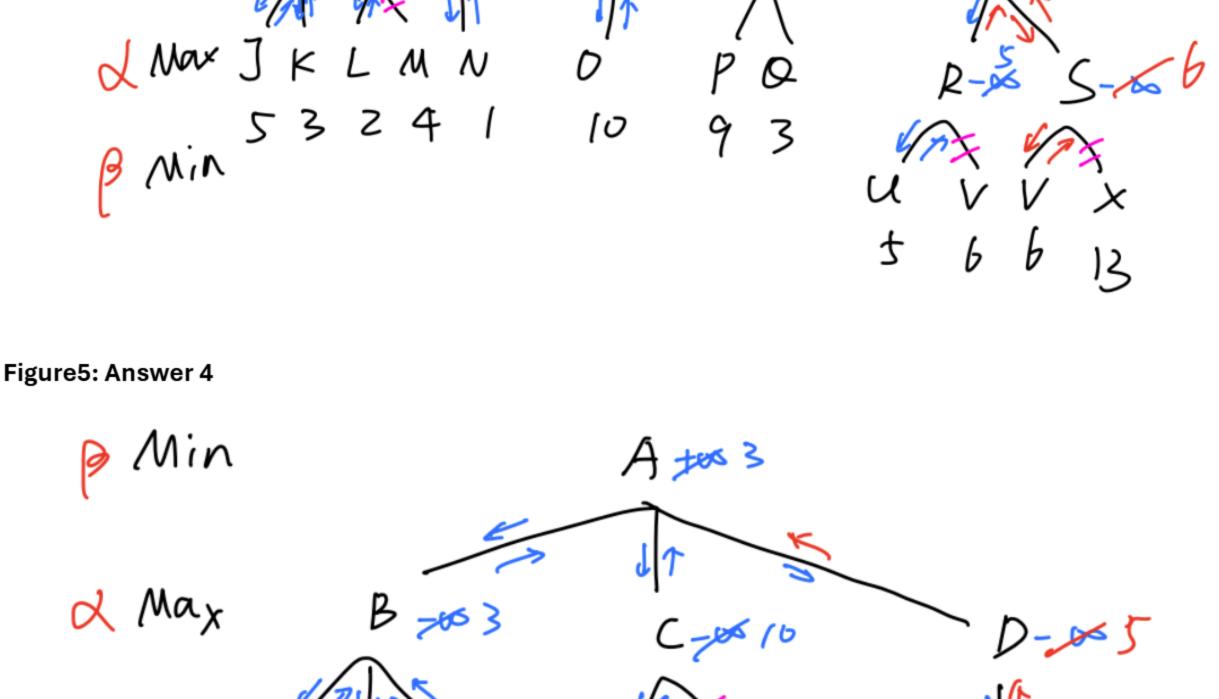


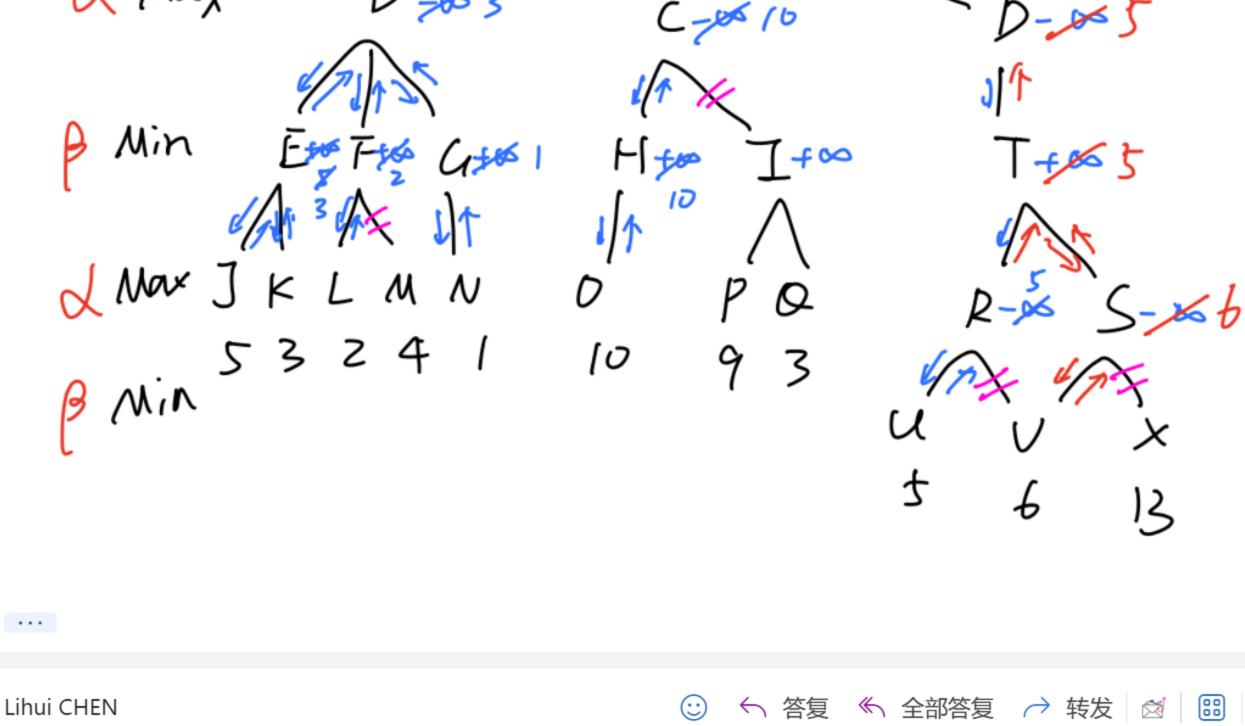
A 🛰 3

Max

B > 3







周日 2025/5/4 22:57

Hi ZongZe, only one node V in your Fig below has more than one parents. So if V needs to be visited from any of its parent, it cannot be pruned.

M, I, P, Q, and X

收件人: ❷ #LI ZONGZE#

nodes no need to be visited:

LC

Lihui • • •

Cheers,

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In the figure, R-V can be pruned but S-V still exists, so node V cannot be pruned. Yes, S-X can be pruned. So the following

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