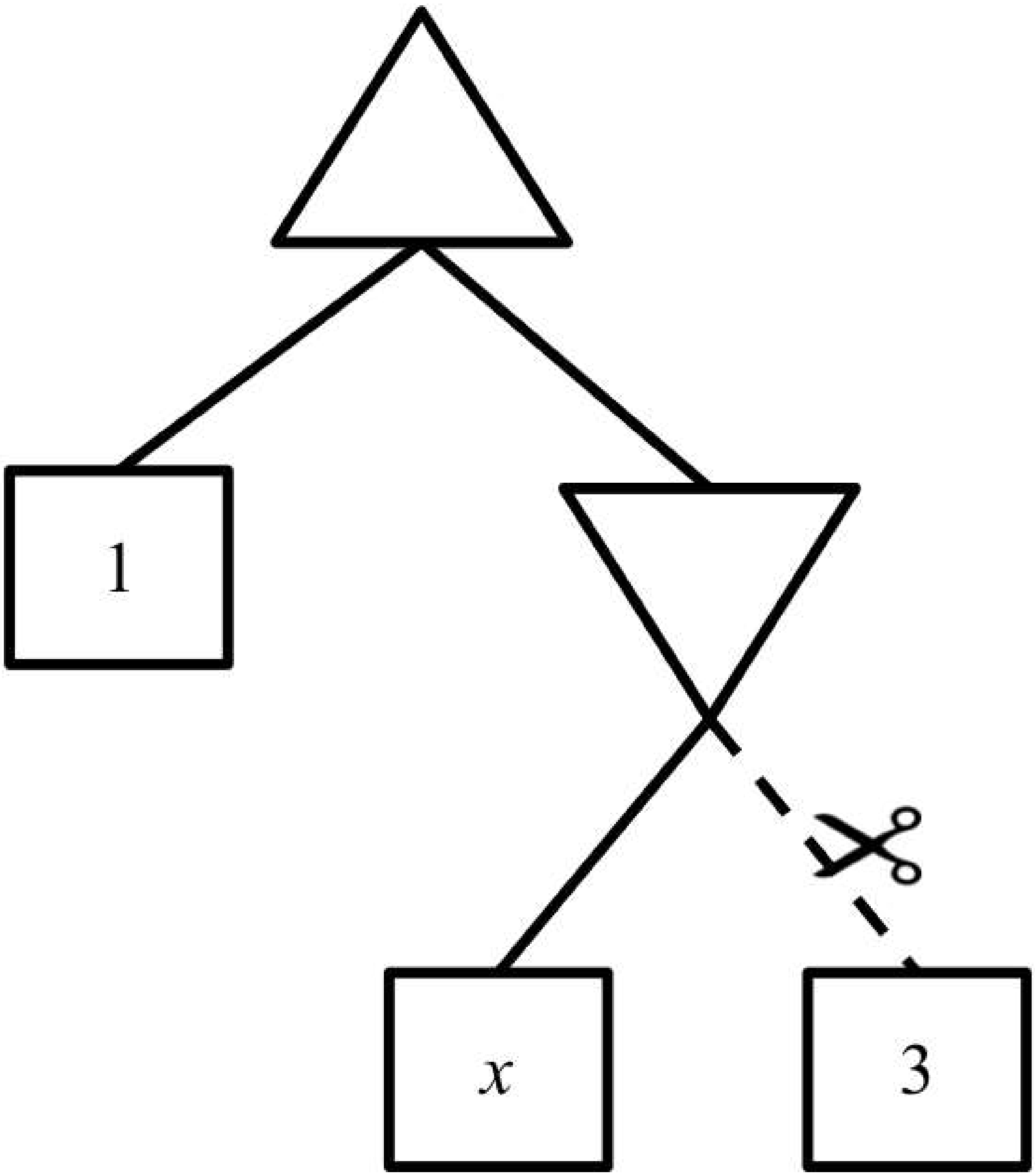
Q7: Games: Alpha-Beta Pruning

Problem 7: Games: Alpha-Beta Pruning

For each of the game-trees shown below, check for which values of x the dashed branch with the scissors will be pruned. If the pruning will not happen for any value of x check "None". If pruning will happen for all values of x check "All".

For all questions, choose the tightest bound possible. For example, if pruning occurs for $x \geq 1$, choose $x \geq 1$ rather than $x \geq 2$. Also, for all questions, assume left-to-right traversal of the tree.

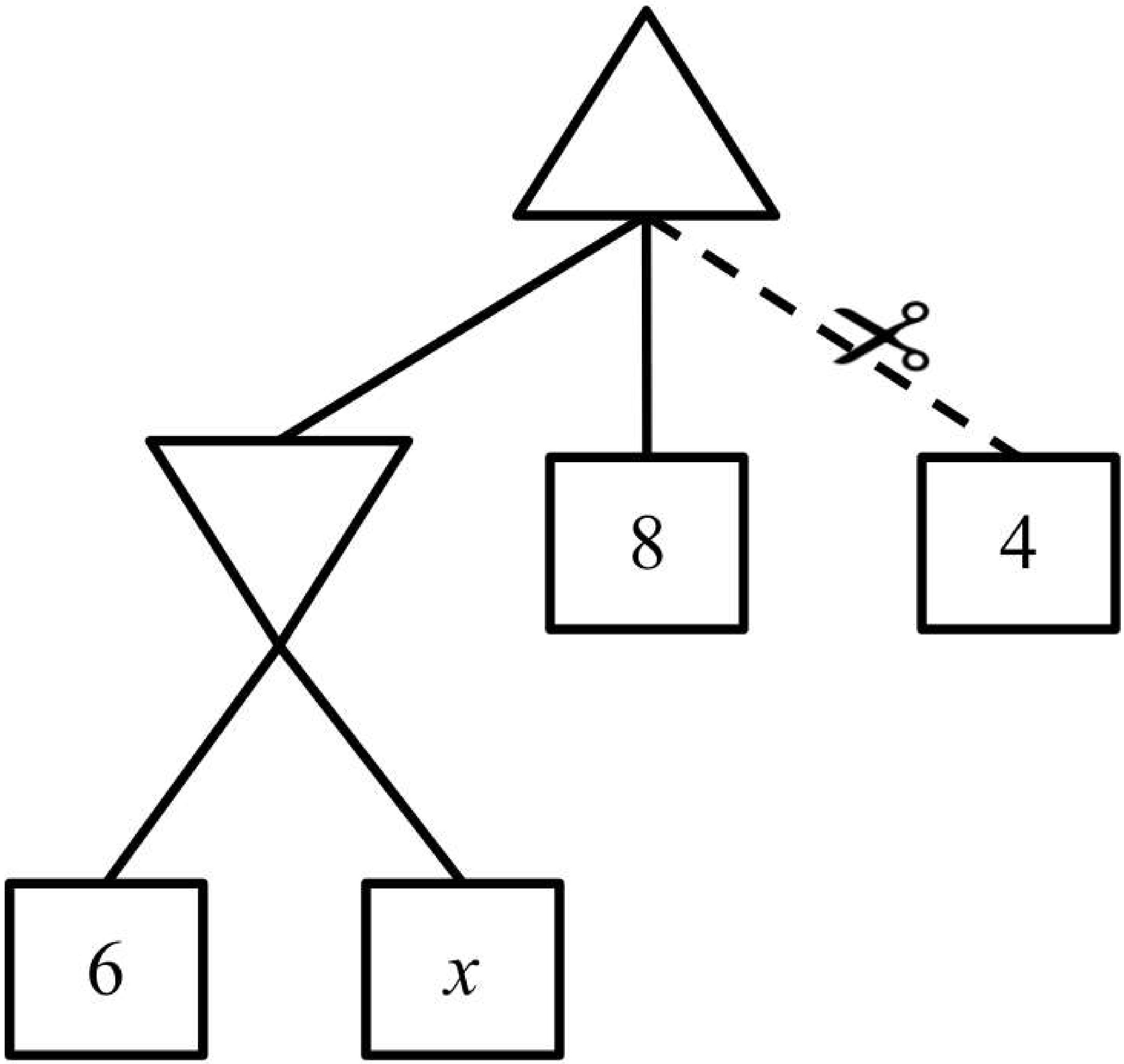
An example is shown below.



Example Tree. Answer: $x \leq 1$.

Part 1

2/2 points (ungraded)



- All
- None ✔
- $x \leq 4$
- $x \geq 4$
- $x \leq 6$
- $x \geq 6$

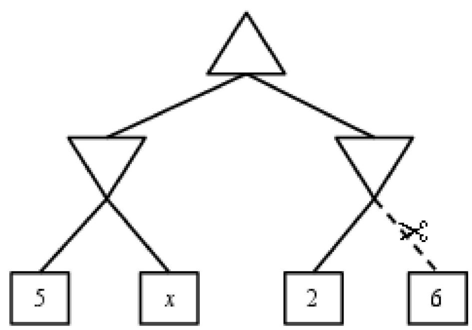
- ○ $x \leq 8$
- ○ $x \geq 8$

Submit

✔ Correct (2/2 points)

Part 2

2/2 points (ungraded)



- ○ All
- ○ None
- ○ $x \leq 2$
- ◉ $x \geq 2$ ✔
- ○ $x \leq 3$
- ○ $x \geq 3$
- ○ $x \leq 6$

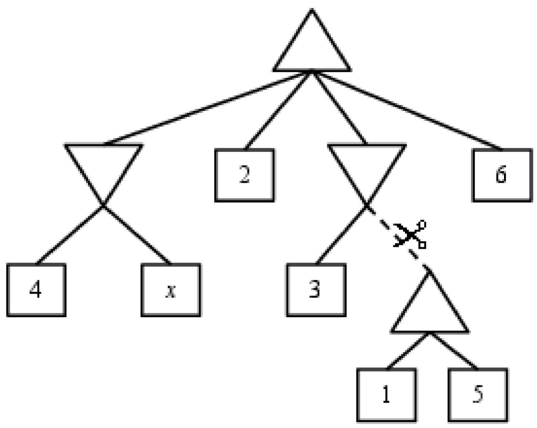
- $x \geq 6$

Submit

Correct (2/2 points)

Part 3

2/2 points (ungraded)



- All
- None
- $x \leq 1$
- $x \geq 1$
- $x \leq 2$
- $x \geq 2$
- $x \leq 3$

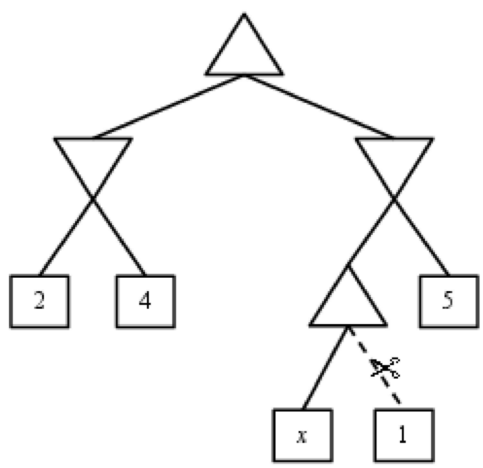
- [x] $x \geq 3$ ✔
- [ ] $x \leq 4$
- [ ] $x \geq 4$
- [ ] $x \leq 5$
- [ ] $x \geq 5$
- [ ] $x \leq 6$
- [ ] $x \geq 6$

Submit

✔ Correct (2/2 points)

Part 4

2/2 points (ungraded)



- [ ] All

- (•) None ✔
- ( ) $x \leq 1$
- ( ) $x \geq 1$
- ( ) $x \leq 2$
- ( ) $x \geq 2$
- ( ) $x \leq 4$
- ( ) $x \geq 4$
- ( ) $x \leq 5$
- ( ) $x \geq 5$

Submit

✔ Correct (2/2 points)