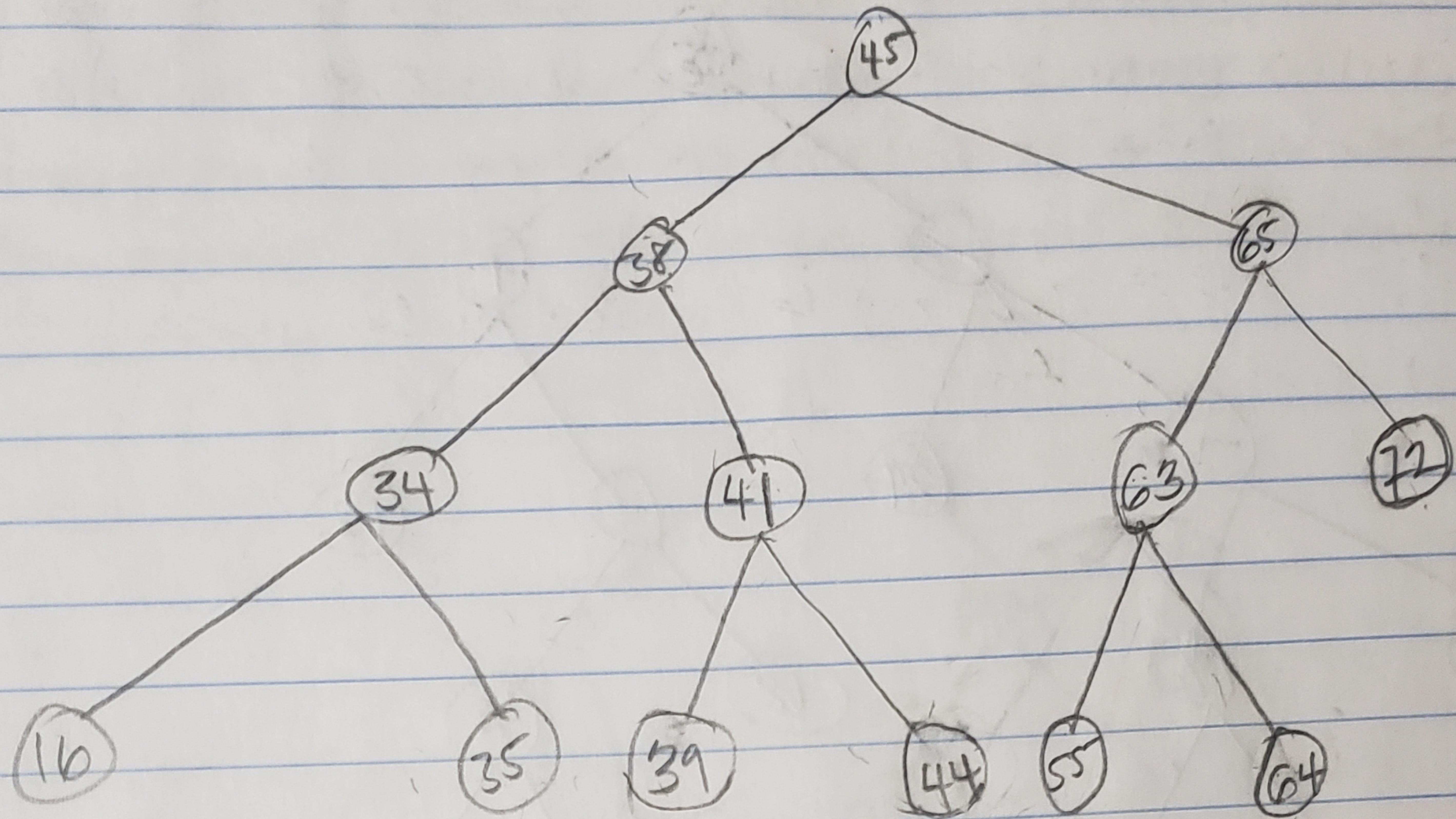


1 - Given the following binary tree:



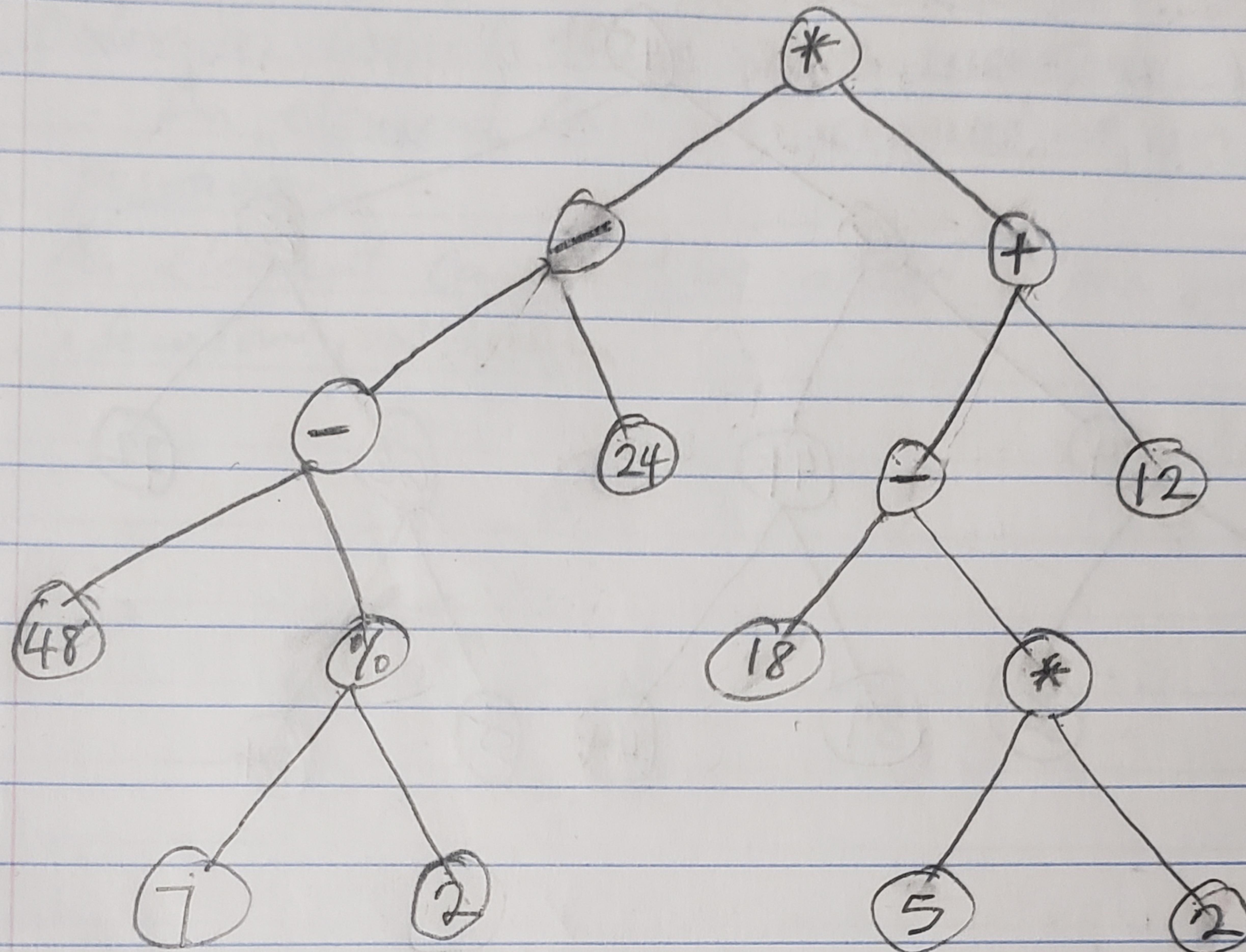
1a- The inorder traversal of the tree is as follow:
16 34 35 38 39 41 44 45 55 63 64 65 72

1b- The preorder traversal of the tree is as follow:
45 38 34 16 35 41 39 44 65 63 55 64 72

1c- The postorder traversal of the tree is as follow:
16 35 34 39 44 41 38 55 64 63 72 65 45

1d- The height of the tree is level 4.
Level 2 Nodes include: 38 41 65

2 Given the following binary tree:



2a The inorder includes:

$$48 - 7 \% 2 / 24 * 18 - 5 * 2 + 12$$

2b The postorder traversal includes:

$$48 \text{ } 7 \text{ } 2 \text{ } \% \text{ } - \text{ } 24 \text{ } - \text{ } 18 \text{ } 5 \text{ } 2 \text{ } * \text{ } - \text{ } 12 \text{ } + \text{ } *$$

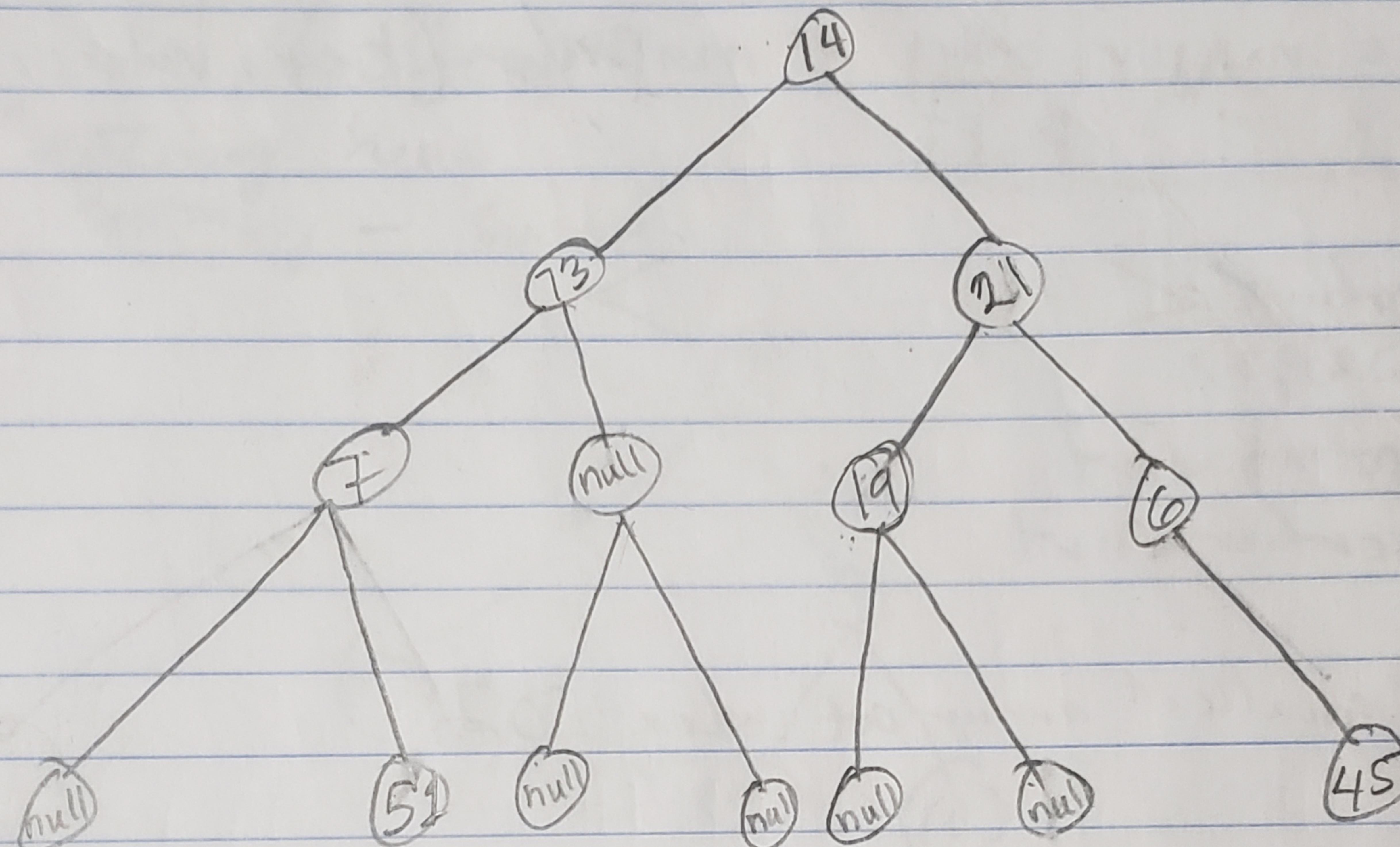
2c If using integer division, it evaluates to 37.

2d When using float division, it evaluates to 37.25.

3

The elements in a binary tree are to be stored in an array. Each element is a nonnegative int value.

a. What value can you use as a dummy value, if the binary tree is not complete? b. Show the content of the array, given the tree illustrated below.

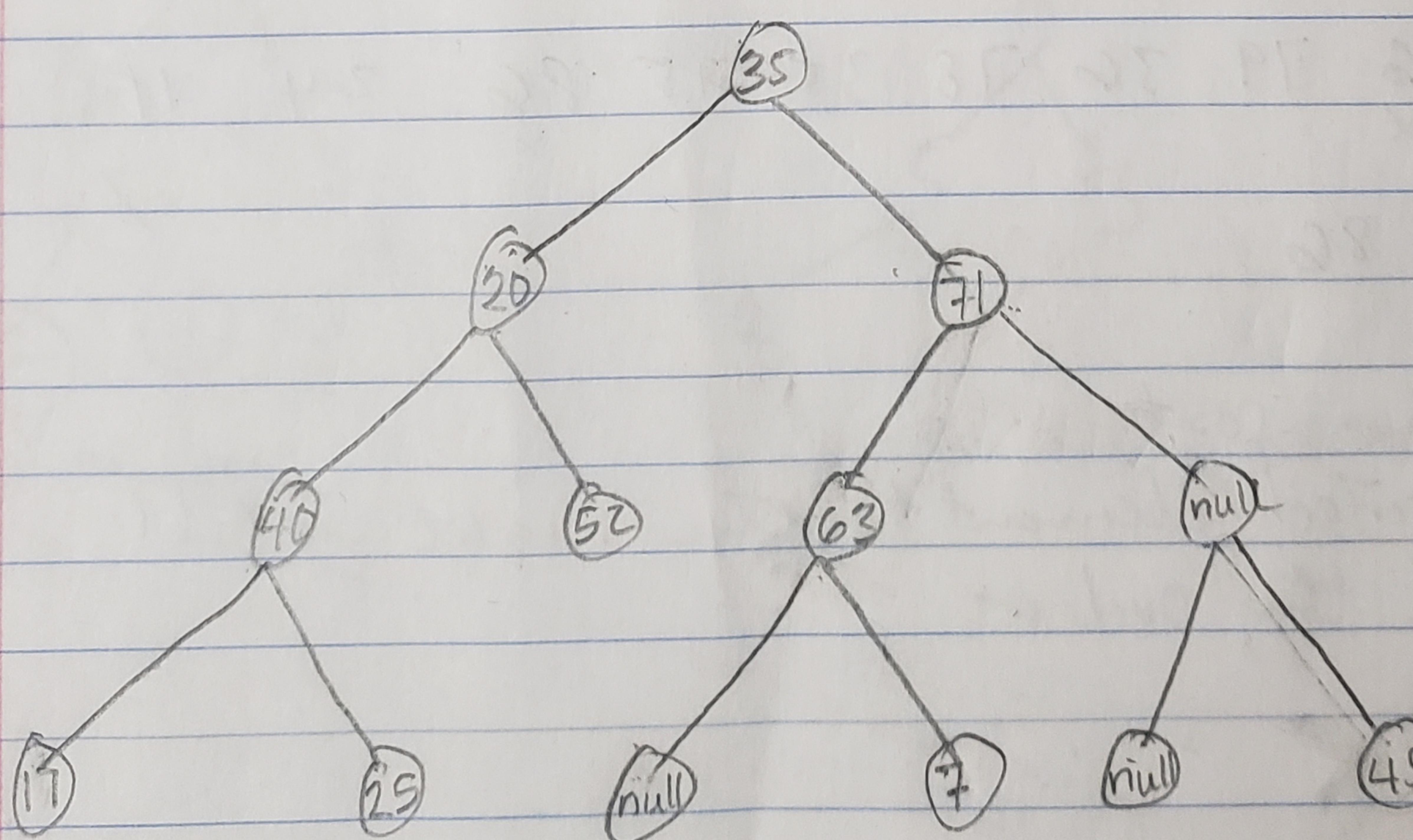


0	14
1	73
2	21
3	7
4	null
5	19
6	6
7	null
8	5
9	null
10	null

(4)

Given the array pictured below, draw the binary tree that can be created from its elements.

11	null
12	null
13	45



14	0	35
1	20	
2	71	
3	40	
4	52	
5	63	
6	null	
7	17	
8	25	
9	null	
10	7	
11	null	
12	45	