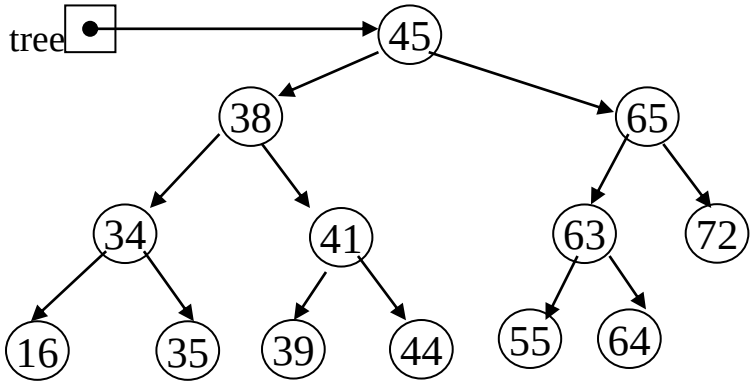
1. Given the following binary tree:



(a) What is the inorder traversal of the tree?

16 → 34 → 35 → 38 → 39 → 41 → 44 → 45 → 55 → 63 → 64 → 65 → 72

(b) What is the preorder traversal of the tree?

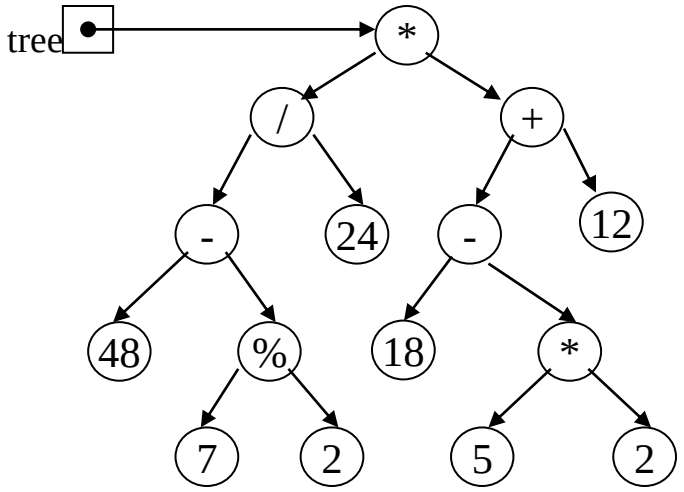
45 → 38 → 34 → 16 → 35 → 41 → 39 → 44 → 65 → 63 → 55 → 64 → 72

(c) What is the postorder traversal of the tree?

16 → 35 → 34 → 39 → 44 → 41 → 38 → 55 → 64 → 63 → 72 → 65 → 45

(d) What is the height of the tree? What nodes are on level 2?
The height of the tree is 4. Nodes in level 2 (root is 0) are: 34, 41, 63, 72

2. Given the following binary expression tree:



(a) What is the inorder traversal of the tree?

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

(b) What is the postorder traversal of the tree?

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

(c) What does it evaluate to if using integer division? **20**

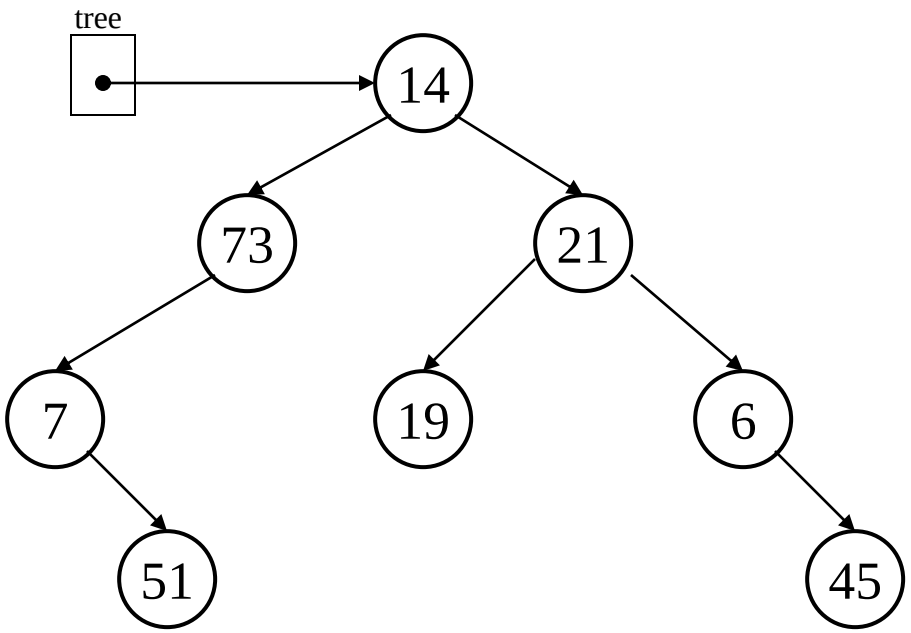
(d) What does it evaluate to if using float division? **39.1667**

3. The elements in a binary tree area 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? null

b. Show the contents 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]	51
[9]	null
[10]	null
[11]	null
[12]	null
[13]	null
[14]	45



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

[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