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What is the possible number of binary trees that can be created with 3 nodes, giving the sequence N,M,L when traversed in post-order.

Select one:

- **a. 5**
- **b. 8**
- **c. 15**
- **d. 3**

Given two keys K1 & K2, To write an algorithm that prints all the elements between them with K1<=K2 in a BST,

Select one:

- **a. Linear solution is possible without using any extra space**
- **b. No linear solution exist**
- **c. Solution need 2 extra spaces**
- **d. Solution need 1 extra space**

While inserting the elements 71, 65, 84, 69, 67, 83 in an empty binary search tree (BST) in the sequence shown, the element in the lowest level is

Select one:

- **a. 67**
- **b. 83**
- **c. 65**
- **d. 69**

When searching for the key value 60 in a binary search tree, nodes containing the key values 10, 20, 40, 50, 70 80, 90 are traversed, not necessarily in the order given. How many different orders are possible in which these key values can occur on the search path from the root to the node containing the value 60?

Select one:

- **a. 64**
- **b. 35**

c. 5040

d. 128

A binary search tree is generated by inserting in order the following integers:
50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24.

The number of nodes in the left subtree and right subtree of the root respectively is

Select one:

a. (7,4)

b. (3,8)

c. (8,3)

d. (4,7)

Consider an undirected graph G where self-loops are not allowed. The vertex set of G is
{(i, j): 1 <= i <= 12, 1 <= j <= 12}.

There is an edge between (a, b) and (c, d) if |a − c| <= 1 and |b − d| <= 1. The number of edges in this graph is _____.

Select one:

a. 506

b. 502

c. 510

d. 500

Suppose we are sorting an array of Seven integers using heapsort, and we have just finished some heapify (either maxheapify or minheapify) operations. The array now looks like this:

16 14 15 10 12 27 28.

How many heapify operations have been performed on root of heap?

Select one:

a. 2

b. 1

c. 3 or 4

d. 5 or 6

The following postfix expression with single-digit operands is evaluated using a stack:
8 2 3 ^ / 2 3 * + 5 1 * -

Note that ^ is the exponentiation operator. The top two elements of the stack after the first * is evaluated are:

Select one:

- **a. 6, 1**
- **b. 5, 7**
- **c. 3, 2**
- **d. 1, 5**

The five items: A, B, C, D, and E are pushed in a stack, one after other starting from A. The stack is popped four items and each element is inserted in a queue. The two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack. The popped item is

Select one:

- **a. C**
- **b. B**
- **c. D**
- **d. A**

The minimum number of interchanges needed to convert the array 89, 19, 40, 17, 12, 10, 2, 5, 7, 11, 6, 9, 70 into a heap with the maximum element at the root is

Select one:

- **a. 2**
- **b. 1**
- **c. 0**
- **d. 3**