BST Worksheet

Suppose that we have numbers between 1 and 1000 in a binary search tree and we want to search for the number 363. Which of the following sequences could not be the sequence of nodes examined?

1. 2, 252, 401, 398, 330, 344, 397, 363.

2. 924, 220, 911, 244, 898, 258, 362, 363.

3. 925, 202, 911, 240, 912, 245, 363.

   In step 3 we go from 911 to 240 which means we take the left path. In the very next step, we hit 912 which cannot be contained in a left subtree of the 911 node.

4. 2, 399, 387, 219, 266, 382, 381, 278, 363.

5. 935, 278, 347, 621, 299, 392, 358, 363.

   After taking the right path from 347 we encounter the value 299 which cannot be contained in a right subtree of the 347 node.