Question 1

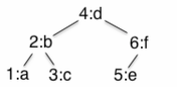
Question 1

1/1 point (graded)

Recall the data definition for a BST:

```
(define-struct node (key val l r))
;; A BST (Binary Search Tree) is one of:
;;  - false
;;  - (make-node Integer String BST BST)
;; interp. false means no BST, or empty BST
;;         key is the node key
;;         val is the node val
;;         l and r are left and right subtrees
;; INVARIANT: for a given node:
;;     key is > all keys in its l(eft)  child
;;     key is < all keys in its r(ight) child
;;     the same key never appears twice in the tree
```

Which of the following nodes represents this BST?




```
(make-node 4 "d"
           (make-node 2 "b"
                      (make-node 3 "c" false false)
                      (make-node 1 "a" false false))
           (make-node 6 "f"
                      false
                      (make-node 5 "e" false false)))
```

```
(make-node 4 "d"
           (make-node 2 "b"
                      (make-node 1 "a" false false)
                      (make-node 3 "c" false false))
           (make-node 6 "f"
                      (make-node 5 "e" false false)
                      false))
```

```
(make-node 4 "d"
           (make-node 6 "f"
                      false
                      (make-node 5 "e" false false)))
           (make-node 2 "b"
                      (make-node 3 "c" false false)
                      (make-node 1 "a" false false))
```

✔

Explanation

The numbers in the left subtree must always be strictly less, and those in the right must be strictly greater.

Submit

Answers are displayed within the problem