

TREE-INSERT(T, z)

```
1   $x = T.root$            // node being compared with  $z$ 
2   $y = NIL$               //  $y$  will be parent of  $z$ 
3  while  $x \neq NIL$       // descend until reaching a leaf
4       $y = x$ 
5      if  $z.key < x.key$ 
6           $x = x.left$ 
7      else  $x = x.right$ 
8   $z.p = y$               // found the location—insert  $z$  with parent  $y$ 
9  if  $y == NIL$ 
10      $T.root = z$        // tree  $T$  was empty
11 elseif  $z.key < y.key$ 
12      $y.left = z$ 
13 else  $y.right = z$ 
```