

# LEFT-ROTATE( $T, x$ )

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1   $y = x.right$ 
2   $x.right = y.left$            // turn  $y$ 's left subtree into  $x$ 's right subtree
3  if  $y.left \neq T.nil$        // if  $y$ 's left subtree is not empty ...
4       $y.left.p = x$            // ... then  $x$  becomes the parent of the subtree's root
5   $y.p = x.p$                  //  $x$ 's parent becomes  $y$ 's parent
6  if  $x.p == T.nil$            // if  $x$  was the root ...
7       $T.root = y$              // ... then  $y$  becomes the root
8  elseif  $x == x.p.left$        // otherwise, if  $x$  was a left child ...
9       $x.p.left = y$            // ... then  $y$  becomes a left child
10 else  $x.p.right = y$          // otherwise,  $x$  was a right child, and now  $y$  is
11  $y.left = x$                  // make  $x$  become  $y$ 's left child
12  $x.p = y$ 
```