

4.6

Suppose that

N=number of nodes;

A=number of nodes with one child;

B=number of full nodes;

L=number of leaves;

Then we can find that  $N=A+B+L$ ;

What's more, there are  $N-1$  pointers in a tree with  $N$  nodes. Nodes of one child provide  $A$  pointers and full nodes provide  $2B$  pointers. Thus  $N-1=A+2B$

$$\begin{cases} N-1 = A + 2B \\ N = A + B + L \end{cases} \leftrightarrow B + 1 = L$$

4.8

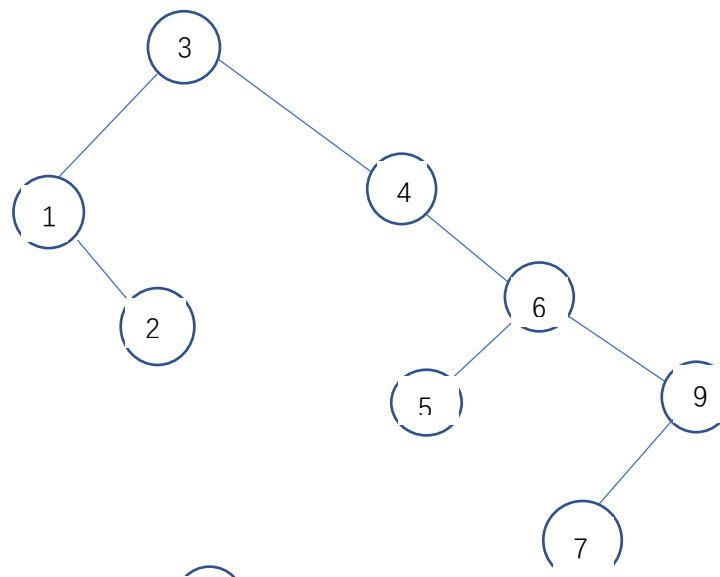
Prefix: -\*\*ab+cde

Infix: a\*b\*c+d-e

Postfix: ab\*cd+\*e-

4.9

a.



b.

