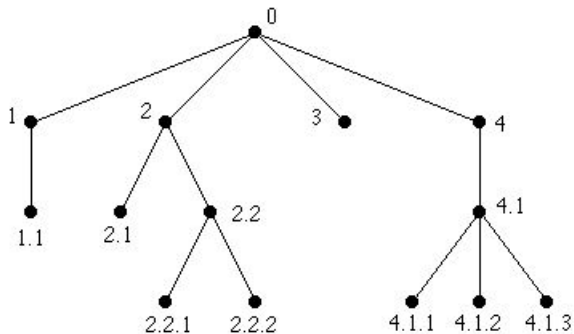




— Page references correspond to locations of Extra Examples icons in the textbook.

p.711, icon at Example 1

#1. Write in lexicographic ordering the universal address system labels for the following tree.

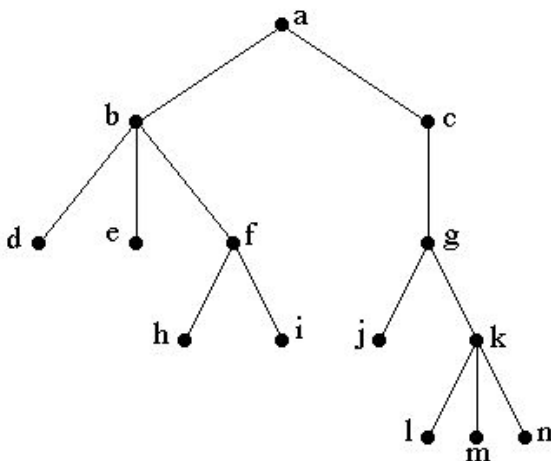


Solution:

$0 < 1 < 1.1 < 2 < 2.1 < 2.2 < 2.2.1 < 2.2.2 < 3 < 4 < 4.1 < 4.1.1 < 4.1.2 < 4.1.3$.

p.712, icon at Example 2

#1. Use a preorder traversal to list the vertices of the following tree.

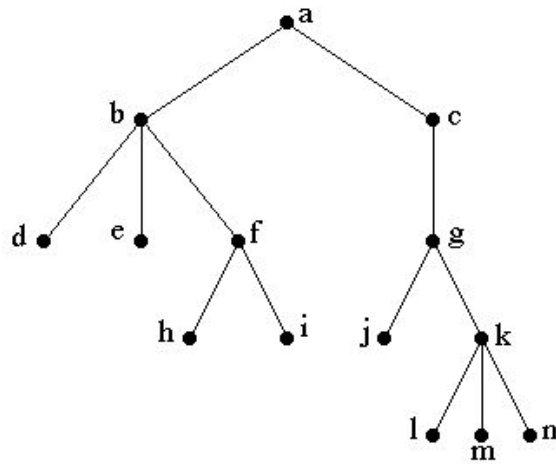


Solution:

The preorder traversal is $a, b, d, e, f, h, i, c, g, j, k, l, m, n$.

p.714, icon at Example 3

#1. Use an inorder traversal to list the vertices of the following tree.

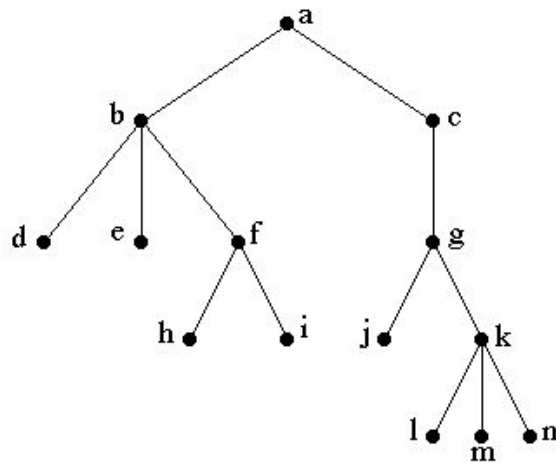


Solution:

The inorder traversal is $d, b, e, h, f, i, a, j, g, l, k, m, n, c$.

p.715, icon at Example 4

#1. Use a postorder traversal to list the vertices of the following tree.



Solution:

The postorder traversal is $d, e, h, i, f, b, j, l, m, n, k, g, c, a$.

p.722, icon at Example 10

#1. Write the algebraic expression $\frac{(3a + b^2)^3 - 7}{6c}$ in

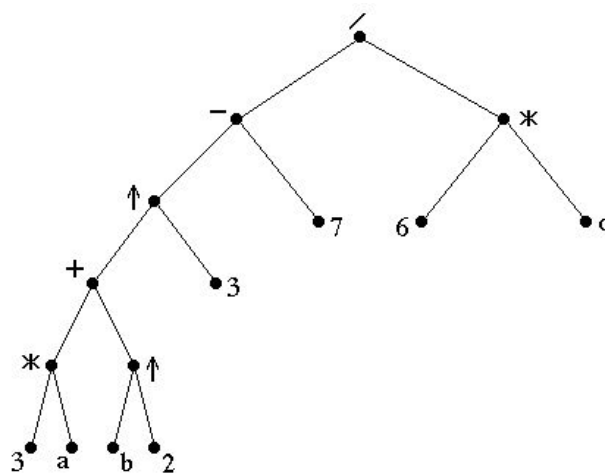
(a) prefix notation.

(b) postfix notation.

(c) infix notation.

Solution:

The parsing tree for this expression is



From this we obtain:

(a) prefix notation: $/ - \uparrow + * 3 a \uparrow b 2 3 7 * 6 3$

(b) postfix notation: $3 a * b 2 \uparrow + 3 \uparrow 7 - 6 c * /$

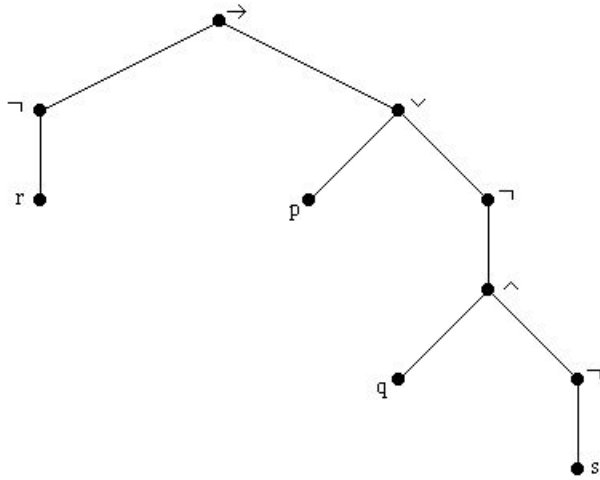
(c) infix notation: $3 * a + b \uparrow 2 \uparrow 3 - 7 / 6 * 3$

p.722, icon at Example 10

#2. Write the logic expression $\neg r \rightarrow (p \vee \neg(q \wedge \neg s))$ in prefix, postfix, and infix notation.

Solution:

The following is the parsing tree for the logic expression:



prefix notation: $\rightarrow \neg r \vee p \neg \wedge q \neg s.$

postfix notation: $r \neg p q s \neg \wedge \neg \vee \rightarrow.$

infix notation: $r \neg \rightarrow p \vee q \wedge s \neg \neg.$