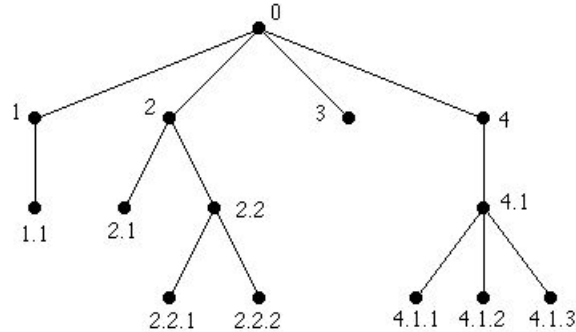




— Page references correspond to locations of Extra Examples icons in the textbook.

p.741, icon at Example 1

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

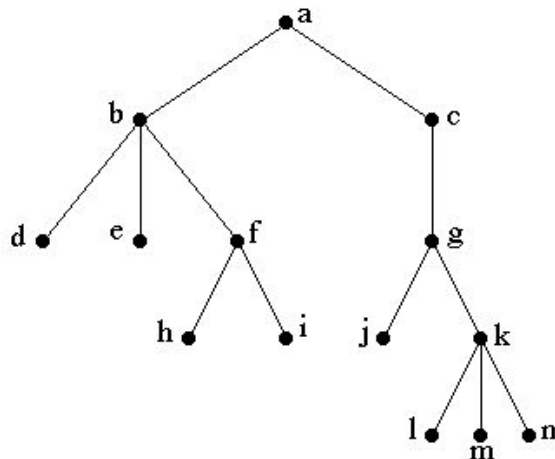


**Solution:**

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

p.742, icon at Example 2

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

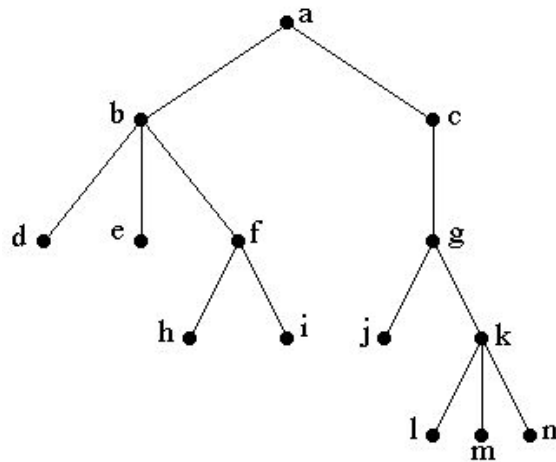


**Solution:**

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

p.744, icon at Example 3

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



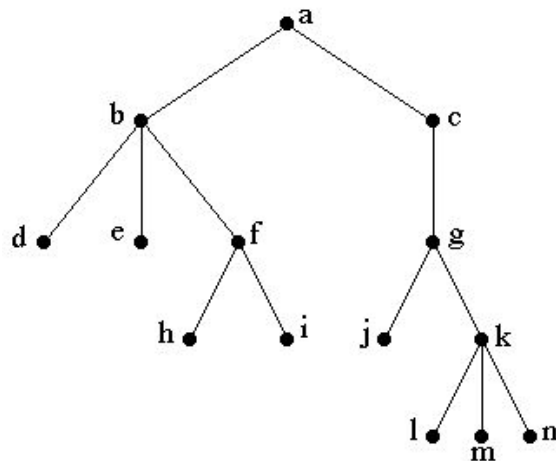
**Solution:**

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

---

p.745, 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.750, icon at Example 10

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

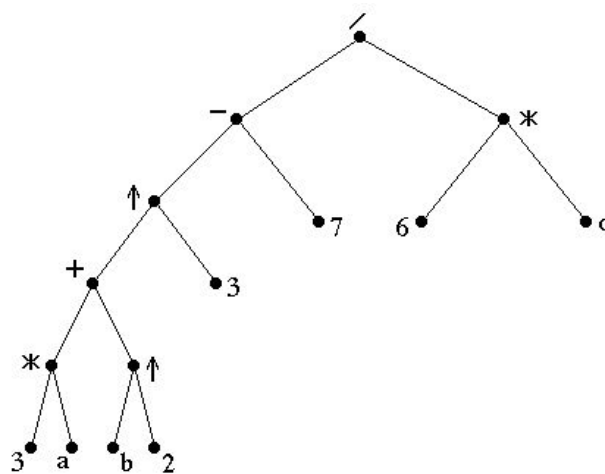
(a) prefix notation.

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

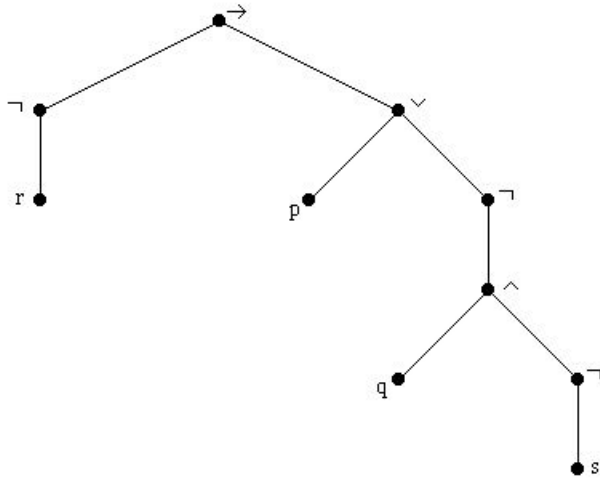
(c) infix notation:  $3 * a + b \uparrow 2 \uparrow 3 - 7 / 6 * 3$

**p.750, 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:  $r \neg \rightarrow p \vee q \wedge s \neg \neg.$