

HW 6

109511 207

蔡宗儒

1.

①

$$2^{3+1} - 1 = 15 \#$$

②

$$2^{4+1} - 1 = 31 \#$$

③

$$2^{12+1} - 1 = 8191 \#$$

2.

①

Preorder

AB CDEFGHIJK

②

Inorder

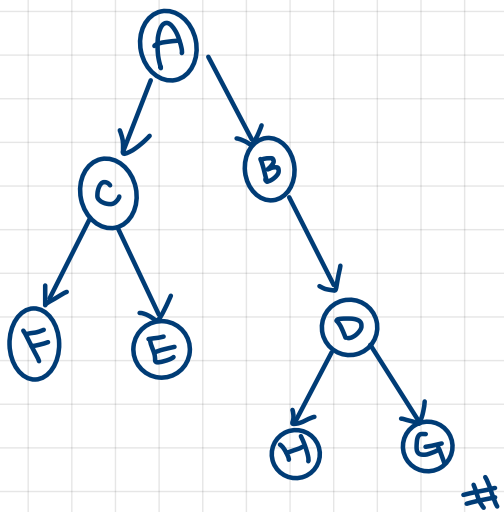
DCEBAFHGIJK

③

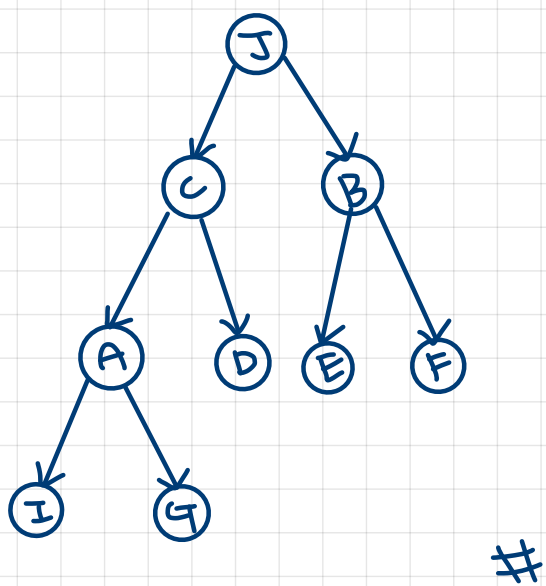
Postorder

DEC BHKJI GF A

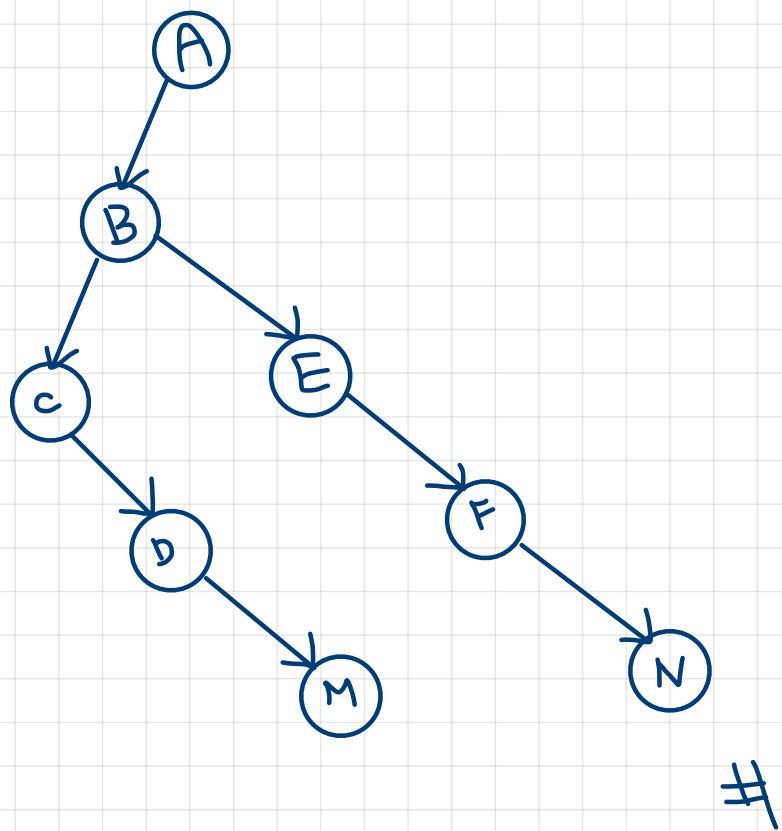
3.



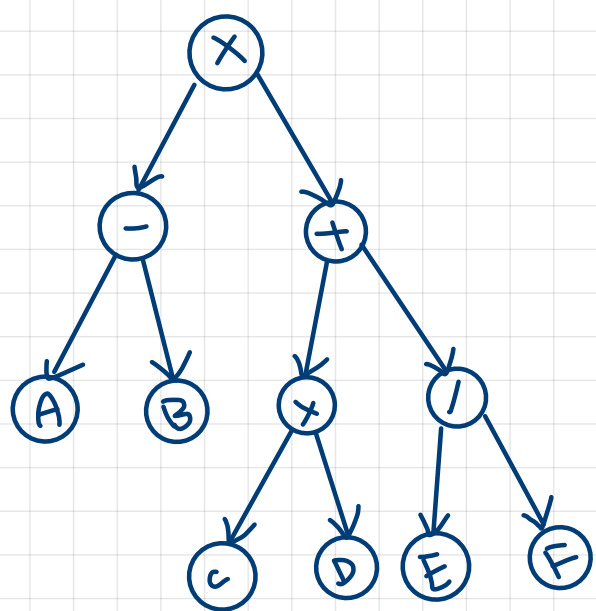
4.



5.



b.



Infix: $A-B \times (C \times D) + (E/F)$

Postfix: $AB-CD \times EF/+ \times \#$

7.

```

int countNode (node *root)
{
    if (root == NULL)
        return 0;
    else
        return 1 + countNode (root->left) + countNode (root->right);
}
    
```

8.

```

void preOrderTraversal (node *root)
{
    if (!root)
        return;
    stack<node*> tmp;
    
```

```
tmp.push(root);
```

```
while (tmp.size() > 0)
```

```
{
```

```
    node *tmpNode = tmp.top();
```

```
    tmp.pop();
```

```
    cout << *(int*)tmpNode -> data << " ";
```

```
    if (tmpNode -> right)
```

```
        tmp.push(tmpNode -> right);
```

```
    if (tmpNode -> left)
```

```
        tmp.push(tmpNode -> left);
```

```
}
```

```
}
```