20191631 윤민상 자료구조 기말고사

1-1-1)

```
int isSize(){
    int size = 0;
    int cnt = front;
    while(cnt != rear){
        cnt = (cnt + 1)%N;
        size += 1;
    }
    return size;
}
```

1-1-2)

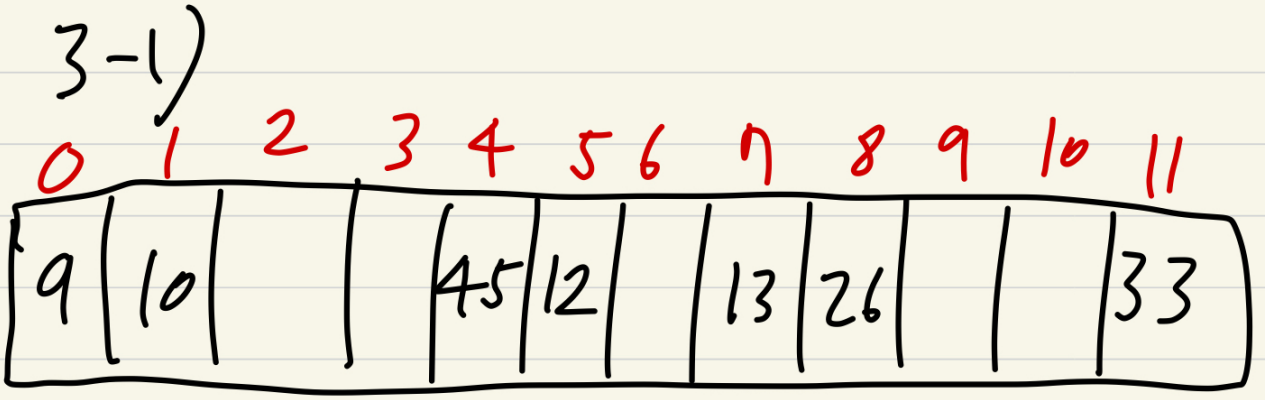
```
bool isempty(){
    if(front == rear){
        return true;
    }
    else{
        return false;
    }
}
```

1-2)
rear의 바로 다음이 front인 경우 원형큐가 다 찬상태거나 텅 빈상태 둘중 하나인데, 이 둘을 구분할 수 없기 때문에 배열을 가득 채우지 않고 N-1개가 찼을때 원형큐가 full인 것으로 검사하는 것이다.

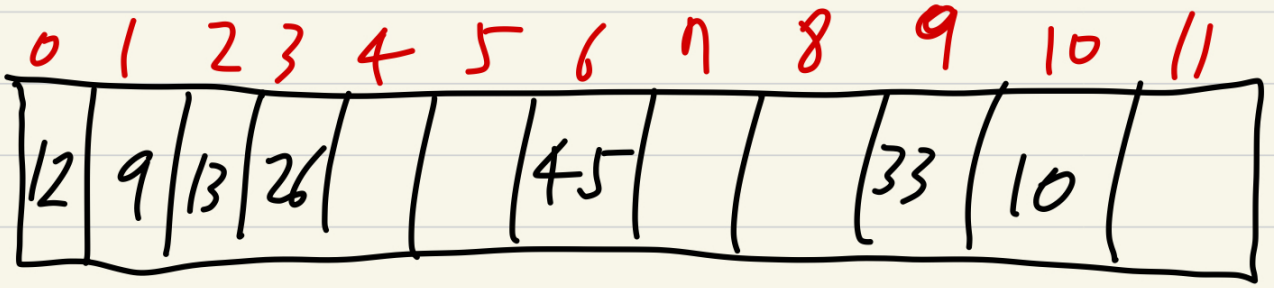
2)
Postfix : 6 ( ( ( ( ) 1 ) 3 * 8 ( ( / + ) 1 - ) ) 2 + 9 ( ( 7 ( * - ) ) 5 - ) ) 6 +
Prefix : + - - + - + ( ( ( ( 6 / * 1 ) 3 ) ( ( 8 1 ) 2 ) ) * ( ( 9 ( 7 5 ) ) 6 ) )

3번)

3-1)



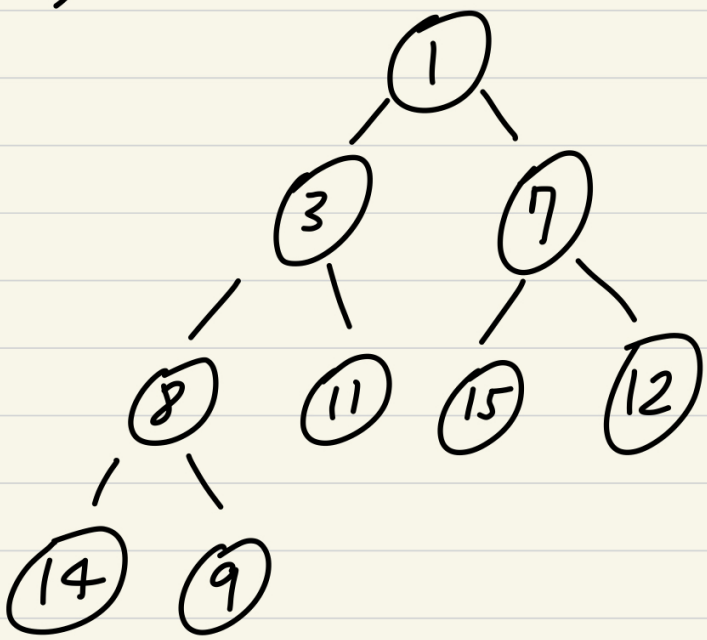

3-2)



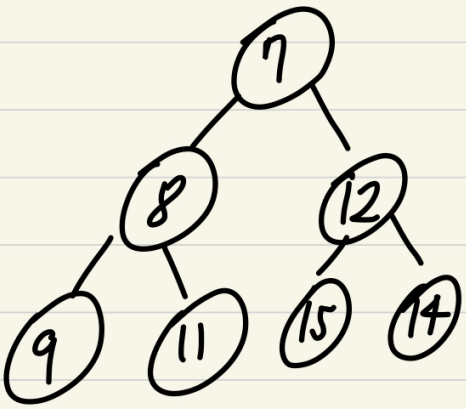

3-3번)
12/7

4번)

4-1)




4-2)



5-1)

```
Node *p;
if (head->data == key){
    p = head;
    head = head->next;
    head->prev = 0;
    delete p;
}
```

5-2)

```
Node *p = new Node(value);

if (IsEmpty()){
    head = p;
}

else if(current->next != NULL){
    p->prev = current;
    p->next = current->next;
    current->next->prev = p;
    current->next = p;
}
current = p;
```

6번)

1 : false

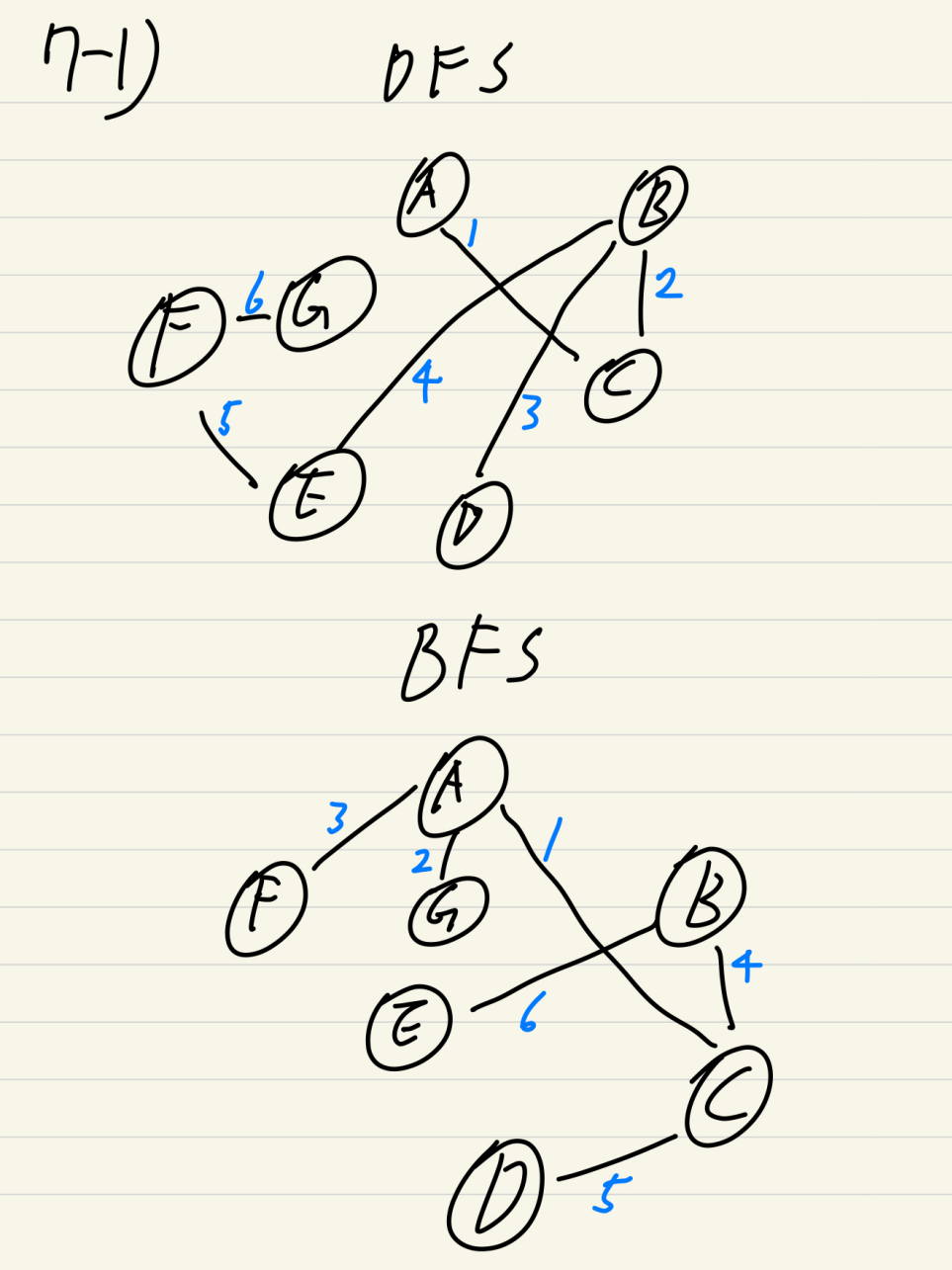
2 : false

3 : false

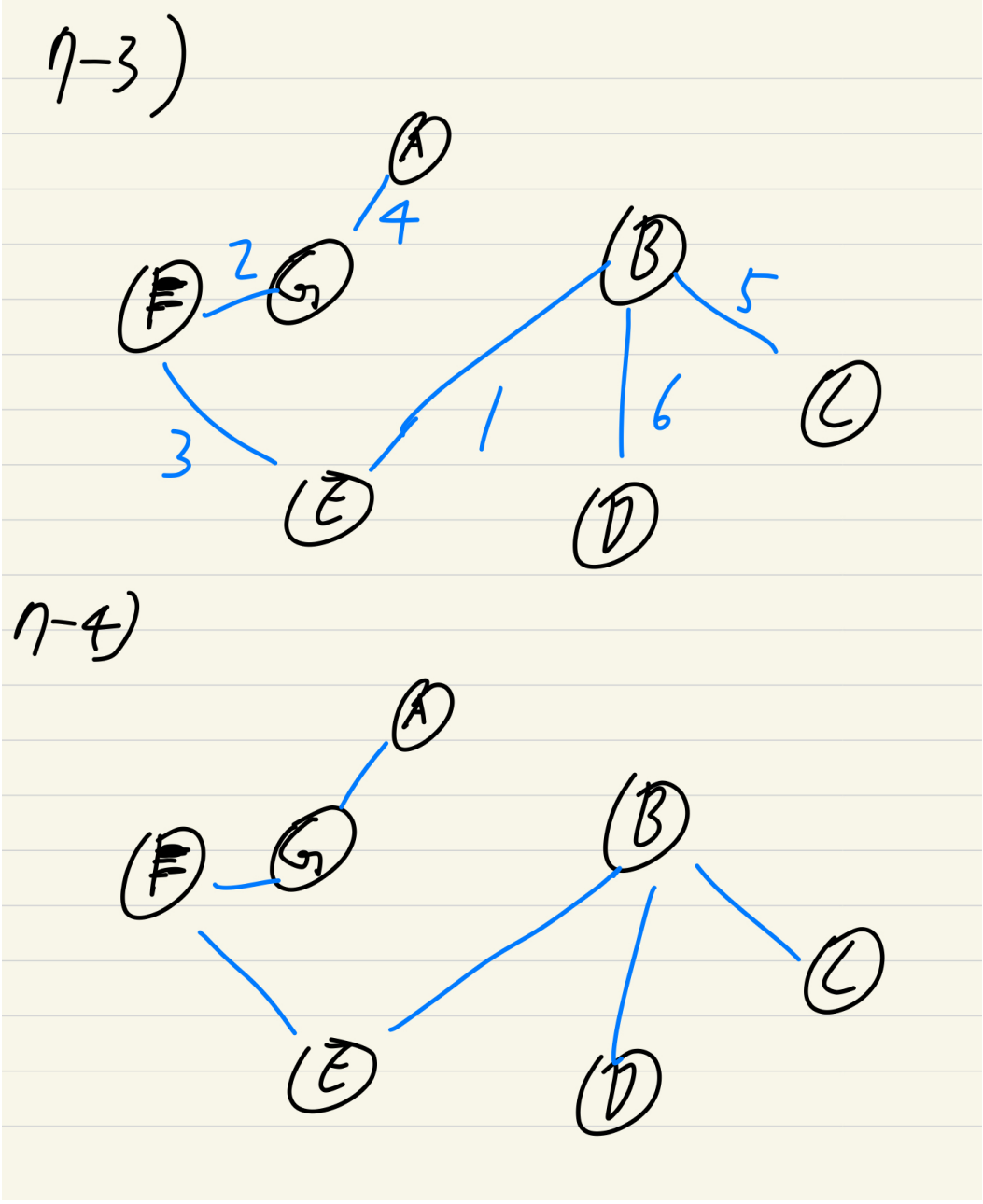
4 : true

5 : false

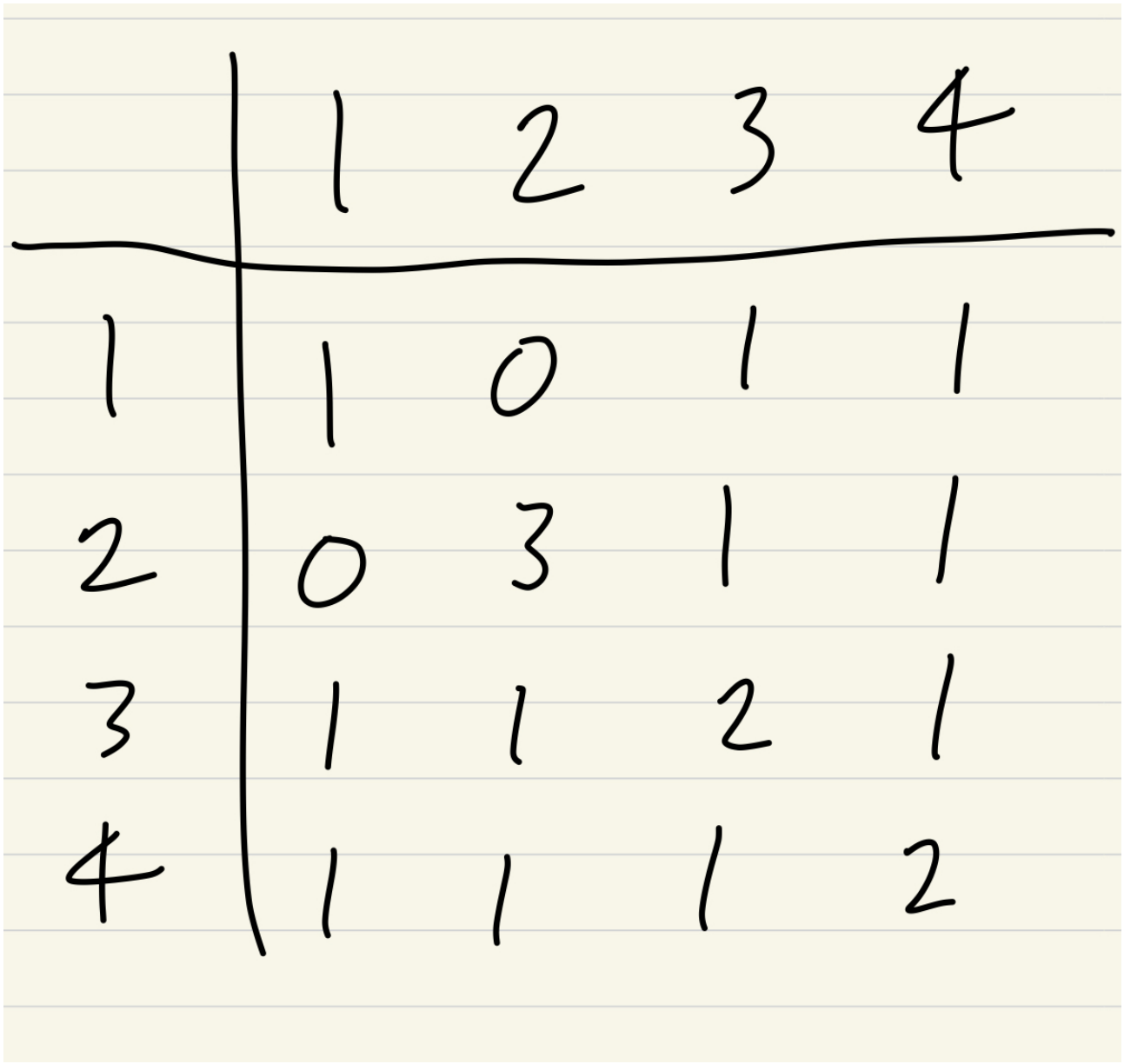
7-1번)



7-3)
Kruskal's MST :
Edge 1 : C 5 D
Edge 2 : B 10 E
Edge 3 : F 12 G
Edge 4 : E 14 F
Edge 5 : A 15 G
Edge 6 : B 17 C



8번)



| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1 | 0 | 1 | 1 |
| 2 | 0 | 3 | 1 | 1 |
| 3 | 1 | 1 | 2 | 1 |
| 4 | 1 | 1 | 1 | 2 |