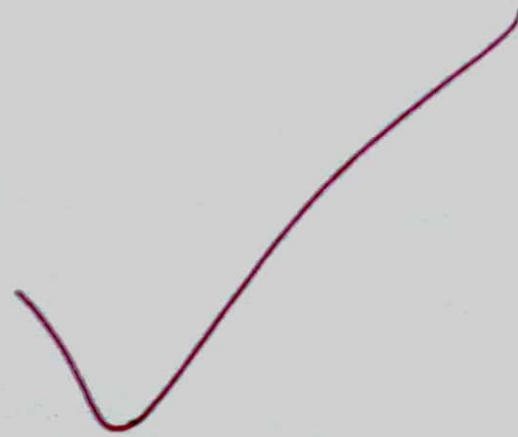


```
public void move () {  
    if ( step == totalSteps ) {  
        direction = false ;
```

```
    }  
    if ( step == 1 ) {  
        direction = true ;
```

```
    }  
    if ( direction ) {  
        step ++ ;  
    }  
    if ( !direction ) {  
        step -- ;
```



(b) public static int[][] expandMatrix(int[][] matA) {  
 int[][] matB = new int[2\*matA.length][2\*matA[0].length];  
 for (int r=0; r<matA.length; r++) {  
 for (int c=0; c<matA[0].length; c++) {  
 matB[2r][2c] = matA[r][c];  
 matB[2r+1][2c] = matA[r][c];  
 matB[2r][2c+1] = matA[r][c];  
 matB[2r+1][2c+1] = matA[r][c];  
 }  
 }  
 return matB;  
}

```
}  
(b) public static int[][] expandMatrix(int[][] matA) {  
    int[][] ans = new int[matA.length * 2][matA[0].length * 2];
```

```
    for (int r = 0; r < matA.length; r++) {
```

```
        for (int c = 0; c < matA[0].length; c++) {
```

```
            for (int rEx = 0; rEx < 2; rEx++) {
```

```
                for (int cEx = 0; cEx < 2; cEx++) {
```

```
                    ans[r * 2 + rEx][c * 2 + cEx] = matA[r][c];
```

```
                }
```

```
            }
```

```
        }
```

```
    }
```

```
    return ans;
```

```
}
```

```
public static int[][] expandMatrix(int[][] matA)
```

```
int[][] expandedMatrix = new int[2*matA.length][2*matA[0].length];
```

```
for (int r=0; r<expandedMatrix.length; r++) {
```

```
    for (int c=0; c<expandedMatrix[0].length; c++) {
```

```
        expandedMatrix[r][c] = matA[r/2][c/2];
```

```
    }
```

```
return expandedMatrix;
```



```
for (int r = 0; r < ans.length; r += 2) {
```

```
    for (int c = 0; c < ans[r].length; c += 2) {  
        if (index < al.size() + 1) {  
            ans[r][c] = al.get(index);
```

```
            ans[r+1][c] = al.get(index);
```

```
            ans[r][c+1] = al.get(index);
```

```
            ans[r+1][c+1] = al.get(index); index++;
```

} } return

Page

Use a pencil only. Do NOT write your name. Do NOT write outside the box.