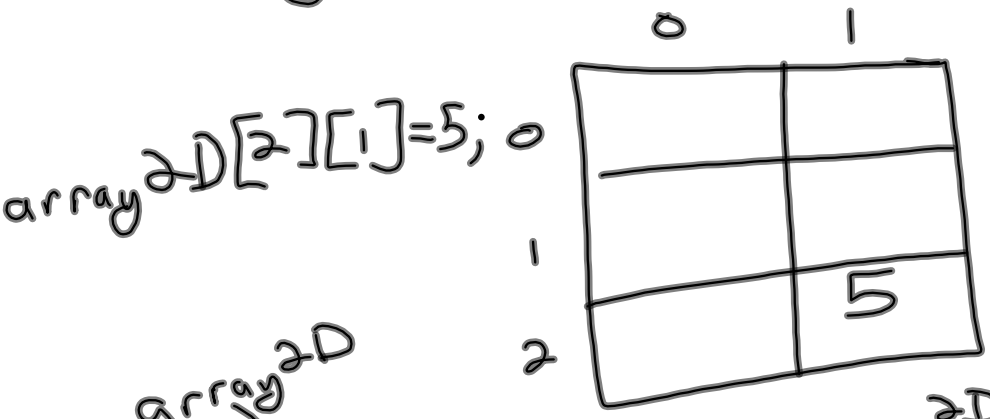
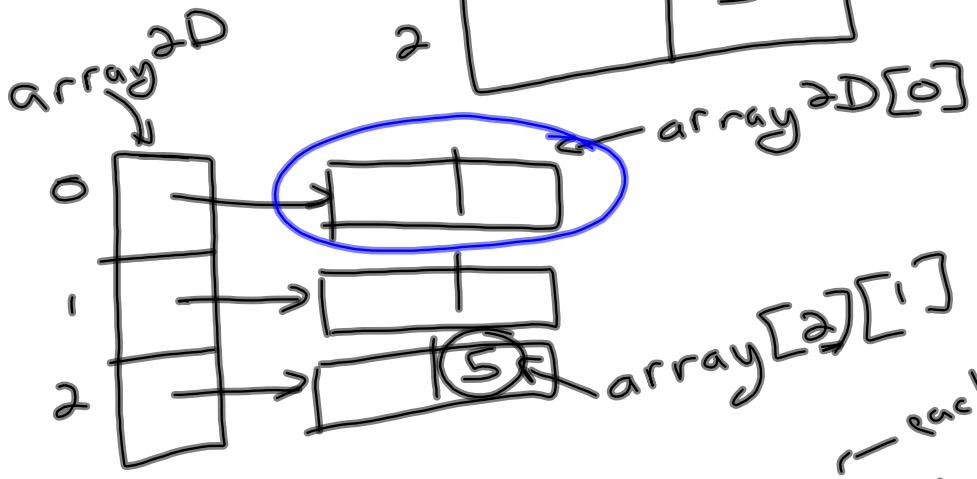
http://cs.gettysburg.edu/~cpresser/cs111/ArrayTests/ArrayTests.java_A.html

/Courses/cs111/sectionA/ArrayTests.java

```
int[][] array2D;
array2D = new int[3][2];
```




```
array2D[2][1]=5;
```




```
for(int i=0; i<array2D.length; i++){
    for(int j=0; j<array2D[i].length; j++){
        s.o.pln(array2D[i][j]);
    }
}
```

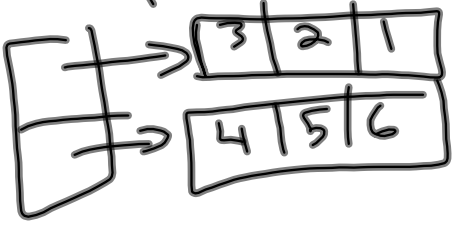
each row

void printArray2D(int[][] array)
- check for null
- use 1 for loop
  - call printArray

3 2 1
4 5 6

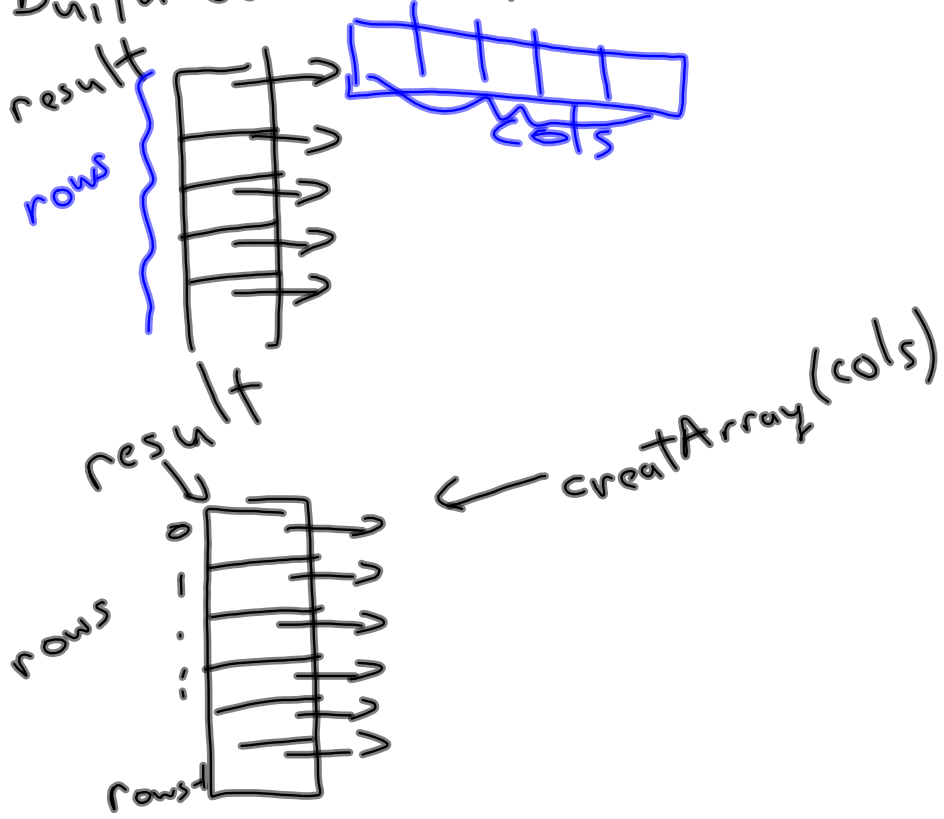
---

int[][] data2D = {{3, 2, 1},{4,5,6}};



int[][] createArray2D(int rows, int cols)

build our result



$$\begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix} + \begin{bmatrix} g & h & i \\ j & k & l \end{bmatrix}$$

2×3 $\quad$ 2×3

$$\begin{bmatrix} a+g & b+h & c+i \\ d+j & e+k & f+l \end{bmatrix}$$

$A \rightarrow \begin{bmatrix} a & b \\ c & d \end{bmatrix} \times \begin{bmatrix} e & f & g \\ h & i & j \end{bmatrix} \leftarrow B$

2×2 $\quad$ 2×3

$$\text{result} = \begin{bmatrix} ae+bh & af+bi & ag+bj \\ ce+dh & cf+di & cg+dj \end{bmatrix}$$

2×3

```
for(int i=0; i<result.length; i++){
    for(int j=0; j<result[i].length; j++){
        for(int k=0; k<A[i].length; k++){
result[i][j] += A[i][k] * B[k][j];
```