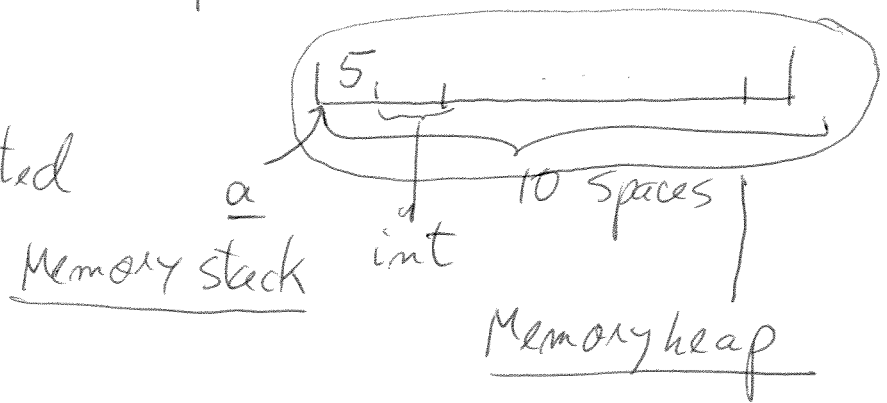


Arrays, methods, objects

```
public class TestArrays {
    public static void main (String[] args) {
        int a[]; // an array named a, will hold elements
                  // of type int
```

```
→ a = new int [10];
```

memory to be allocated



```
a[0] = 5;
```

// usually arrays are initialized using for loops

```
for (int i = 0; i < a.length; i++) {
    a[i] = 1;
```

↑ size of array

// each element of a will be 1

```
int b[5]; // allocating 5 integer array
```

```
System.out.println(b.length); // 5
```

```
int[] b;
```

(L5-2)

```
int i, j;
```

```
i = 1;
```

```
j = i; // j becomes 1
```

```
b = a;
```

```
a[0] = 2;
```

```
System.out.println(b[0]);  
// will print 2
```

```
// Proper copying
```

```
b = new int[a.length];
```

```
for (int i = 0; i < a.length; i++)  
    b[i] = a[i];
```

```
a[0] = 2;
```

```
System.out.println(b[0]); // print 1
```

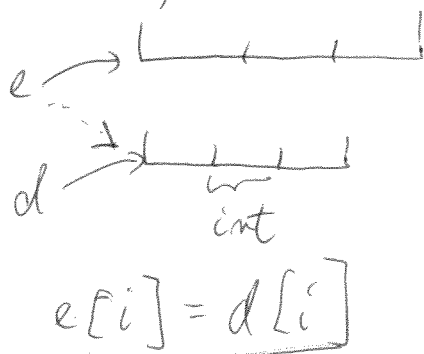
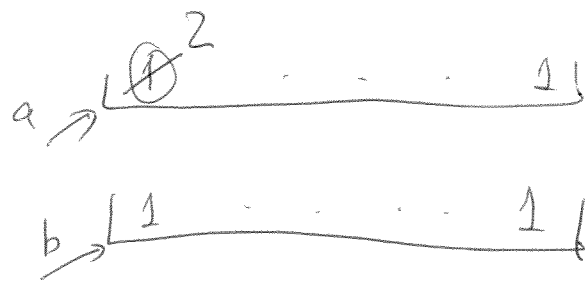
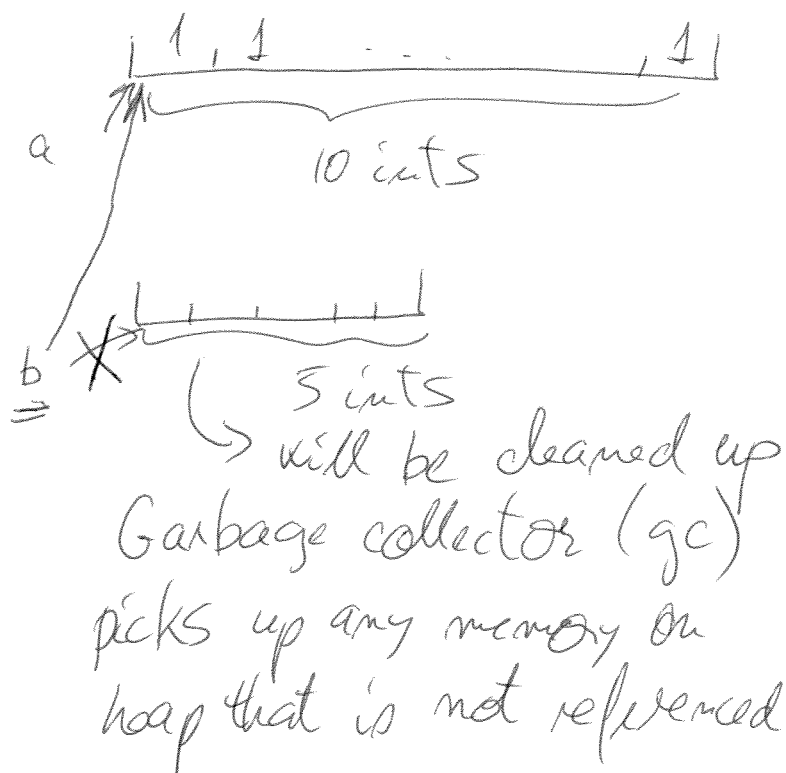
Allocate fresh memory!

Try to go outside an array: ArrayIndexOutOfBoundsException

```
double e[3];
```

```
int d[3];
```

```
e = d; // compile error!
```



```
public class TestMethod {
```

```
    public static int myMethod (int i) {
```

can be used from
anywhere

```
        if (i < 5) {
            return 0;
```

```
        }
        return i;
```

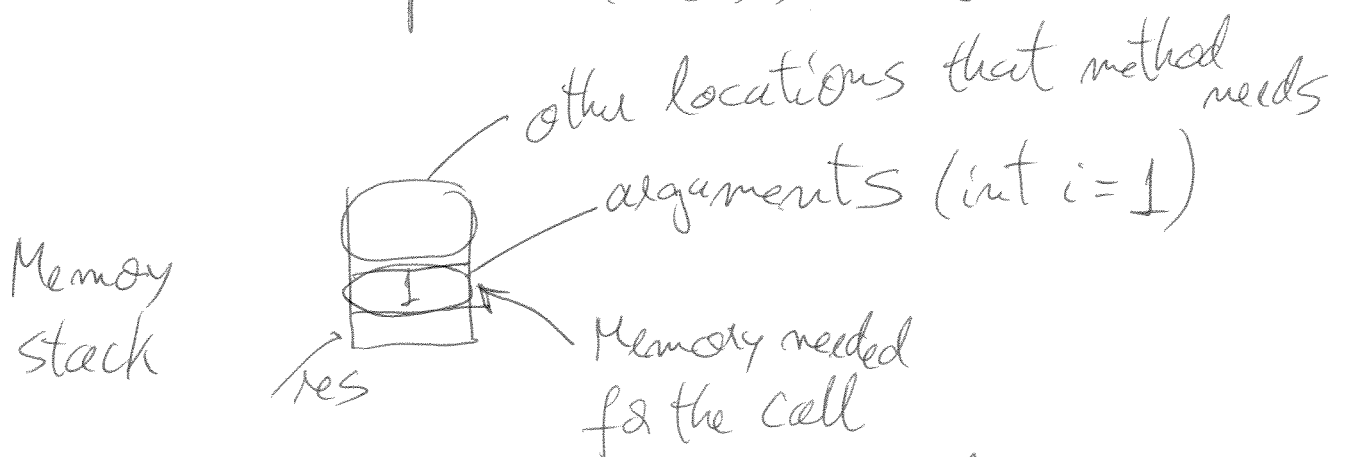
```
    }
```

```
    public static void main (String[] args) {
```

```
        int res = TestMethod.myMethod(1);
```

```
        System.out.println(res); // 0
```

```
    }
```



At end, method memory gets cleaned up

If want the result of a method, return and assign it to a variable

or method might make changes

```
... myMethod (int i) {
```

```
    i = 10;
```

```
    return i;
```

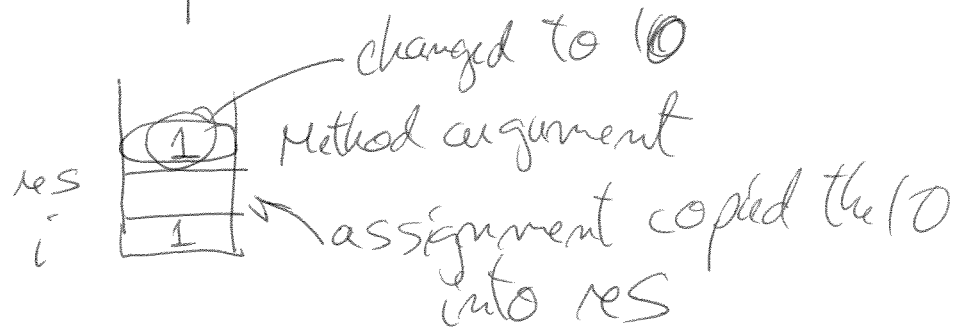
```
}
```

```
... main { int i = 1;
```

```
    int res = TestMethod.myMethod(i);
```

```
    System.out.println(res); // 10
```

```
    System.out.println(i); // 1
```



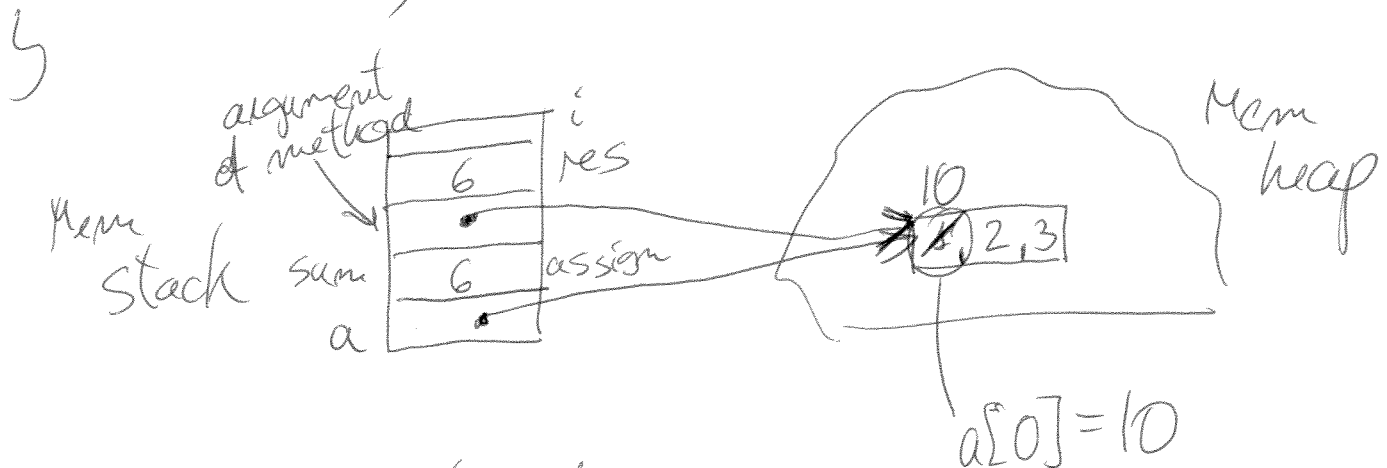
passing parameters by value (primitive types)

(L5-5)

Method with ~~String~~ array

```
public static void main (String[] args) {  
    int a[] = {1, 2, 3};  
    int sum = Test Method.addElements(a);  
    System.out.println(sum); // 6  
    System.out.println(a[0]); // 10  
}
```

```
public static int addElements (int[] a) {  
    int res = 0;  
    for (int i = 0; i < a.length; i++)  
        res += = res + a[i]; // res += a[i];  
    a[0] = 10; // just so  
    return res;  
}
```



Passing by reference