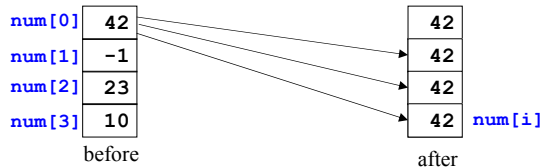


Moving the elements

```
for(i = 1; i < num.length; i++)
    num[i] = num[0];
```



The old values of the array are destroyed

Moving the elements

- What if we want to swap the first and last elements of an array?
- Here we don't need a for loop.
- Does this work?

```
lastIndex = num.length - 1;
num[lastIndex] = num[0];
num[0] = num[lastIndex];
```

Swapping elements

- if we try

```
int a = 6;
int b = 9;

// swap the elements
a = b;
b = a;
```

Unfortunately

```
a = b;
```

overwrites the value of a (which is now lost)

Swapping elements

- If we have two eggs and two eggcups and we want to swap them. How do we do it assuming we can only pick up one egg at a time.



You need a third eggcup

Swapping elements

- In the same way, if we want to swap two integer variables, we need a temporary variable.

```
// code to swap a and b
int tmp = a;
a = b;
b = tmp;
```

Moving the elements

- Swap the first and last elements of an array.

```
lastIndex = num.length - 1;
int tmp = num[lastIndex];
num[lastIndex] = num[0];
num[0] = tmp;
```

This code is quite useful and is frequently put in its own method.

Moving the elements

- Method to swap array elements

```
// swaps array elements whose
// indices are i and j
void swap(int [] num, int i, int j)
{
    int tmp = num[i]; // Remember num[i]
    num[i] = num[j]; // Overwrite num[i]
    num[j] = tmp; // orig value into num[i]
}
```

Moving the elements

- Using this method, we can swap the first and last elements of an array as follows:

```
swap(num, 0, num.length-1);
```

Summary

- Methods and Arrays
 - parameters
 - return values
- Moving Array Elements
 - the swap method (need a temporary variable)