```
class Solution {

    public int maximumProduct(int[] nums) {
        Arrays.sort(nums);
        int len = nums.length;
        int a = nums[len-1] * nums[len-2] * nums[len-3];
        int b = nums[len-1] * nums[1] * nums[0];
        return a > b ? a : b;
    }

    /* faster
    public int maximumProduct(int[] nums) {
        int largest = Integer.MIN_VALUE;
        int secondLargest = Integer.MIN_VALUE;
        int thirdLargest = Integer.MIN_VALUE;
        int smallest = Integer.MAX_VALUE;
        int secondSmallest = Integer.MAX_VALUE;
        for(int n : nums) {
            if (n > largest) {
                thirdLargest = secondLargest;
                secondLargest = largest;
                largest = n;
            } else if (n > secondLargest) {
                thirdLargest = secondLargest;
                secondLargest = n;
            } else if (n > thirdLargest) {
                thirdLargest = n;
            }
            if (n < smallest) {
                secondSmallest = smallest;
                smallest = n;
            } else if (n < secondSmallest) {
                secondSmallest = n;
            }
        }
        return Math.max(smallest * secondSmallest * largest,
                        largest * secondLargest * thirdLargest);
    }
    */
}
```

Given an integer array, find three numbers whose product is maximum and output the maximum product.

Input: `[1,2,3]`
Output: `6`
Input: `[1,2,3,4]`
Output: `24`