

Problem Statement (ColorfulCookie)

Little Fox Jiro received a box from his sister Fox Ciel as a present. The box contained many cookies of various colors. Jiro wants to eat as many of these cookies as possible. The cookies are locked in a strange box. Jiro cannot take cookies from the box directly. On the box there is a dial and a button. These can be used to obtain cookies in the following way:

1. Jiro uses the dial to choose any pair of distinct colors C1 and C2.
2. Jiro pushes the button. If there are less than **P1** cookies of color C1, nothing happens. Also, if there are less than **P2** cookies of color C2, nothing happens. Otherwise, exactly **P1** cookies of color C1 and exactly **P2** cookies of color C2 drop out of the box and Jiro eats all of them.

You are given a `int[] cookies` describing the initial contents of the box: for each `i`, the box contains `cookies[i]` cookies of color `i`. You are also given the ints **P1** and **P2**. Your method must return the maximum number of cookies Jiro can eat by repeating above procedure optimally.

Definition

Class: `ColorfulCookie`

Method: `getMaximum`

Parameters: `int[], int, int`

Returns: `int`

Method signature: `int getMaximum(int[] cookies, int P1, int P2)`

(be sure your method is public)

Constraints

- **cookies** will contain between 1 and 50 elements, inclusive.
- Each element of **cookies** will be between 1 and 2,000, inclusive.
- **P1** and **P2** will each be between 50 and 2,000, inclusive.

Examples

0)

```
{100, 100}
```

```
50
```

```
50
```

Returns: 200

The optimal solution is to select colors 0 and 1 and to push the button twice: each time obtaining 50 cookies of each color.

1)

```
{50, 250, 50}
```

```
50
```

```
100
```

Returns: 300

An optimal solution:

1. Pick colors 0 and 1 (note that order matters) and push the button to obtain 50 cookies of color 0 and 100 cookies of color 1.
2. Pick colors 2 and 1 (again, note the order) and push the button to obtain 50 cookies of color 2 and 100 cookies of color 1.

This gives Jiro a total of 300 cookies. Note that 50 cookies of color 1 remained in the box, but there is no way to get them out.

2)

{2000}

100

200

Returns: 0

In this case all cookies have the same color. It is impossible to obtain any of them.

3)

{123, 456, 789, 555}

58

158

Returns: 1728