

The for-loop → The roots of an equation

📊 Medium ⌚ 13 minutes ?

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Your task is to find the roots of a [cubic equation](#).

The input contains four numbers: a, b, c, d .

Output all the integer roots between 0 and 1000 (inclusive) for the equation $ax^3 + bx^2 + cx + d = 0$ *in ascending order*.

If the specified interval does not contain the roots of the equation, do not output anything.

Remember, that cubic equation always has 3 roots, meaning it can't have more than 3 integer roots. Keep this in mind in order to optimize the code.

📄 Report a typo

Sample Input 1:

```
-1
1
-1
1
```

Sample Output 1:

```
1
```

Sample Input 2:

```
0
1
-6
5
```

Sample Output 2:

```
1
5
```

Sample Input 3:

```
1
1
1
1
```

Sample Output 3:

↩ Write a program

[Code Editor](#) [IDE](#)

```
1 import java.util.Scanner;
2 class Main {
3     public static void main(String[] args) {
4         Scanner scanner = new Scanner(System.in);
5
6         int a = scanner.nextInt();
7         int b = scanner.nextInt();
8         int c = scanner.nextInt();
9         int d = scanner.nextInt();
10
11         for (int i = 0; i <= 1000; i++) {
12             if (a * i * i * i + b * i * i + c * i + d == 0) {
13                 System.out.println(i);
14             }
15         }
16         scanner.close();
17     }
18 }
```

Java

```
17     }  
18   }  
19
```

✓ Correct.

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