

## Angewandte Mathematik

### 3. Protokoll: 12.04.2011

### 10622 Perfect P-th Powers

#### Java-Code:

```
/**
 * Angewandte Mathematik, SS11
 * Problem: 10622 Perfect P-th Powers
 * Link:
http://uva.onlinejudge.org/index.php?option=com\_onlinejudge&Itemid=8&category=18&page=show\_problem&problem=1563
 * @author Brielbeck, Daniel
 * @author Weber, Georg
 * @version 1.0, 04/10/2011
 *
 * Method : Ad-Hoc
 * Status : Accepted
 * Runtime: 0.104
 */
import java.io.BufferedReader;
import java.io.InputStreamReader;

public class Main {

    public static void main(String[] args) throws Exception {
        BufferedReader reader = new BufferedReader(new InputStreamReader(System.in));
        String input;
        while ((input = reader.readLine()) != null) {
            if (input.equals("0"))
                break;
            Long inti = Long.valueOf(input);
            if (inti == 1 || inti == -1) {
                System.out.println(1);
                break;
            }
            if (inti >= Integer.MIN_VALUE && inti <= Integer.MAX_VALUE) {
                // bei plus
                if (inti > 0) {
                    for (int i = 31; i >= 0; i--) {
                        if ((Math.abs((Math.pow(inti, 1 / (double) i) - (Math
                            .round(Math.pow(inti, 1 / (double) i)))))) < 0.000000000001) {
                            System.out.print(i);
                            System.out.print("\n");
                            break;
                        }
                    }
                }
                // bei minus:
                else {
                    for (int i = 31; i >= 0; i = i - 2) {
                        inti = Math.abs(inti);
                        if ((Math.abs((Math.pow(inti, 1 / (double) i) - (Math
                            .round(Math.pow(inti, 1 / (double) i)))))) < 0.000000000001) {
                            System.out.print(i);
                            System.out.print("\n");
                            break;
                        }
                    }
                }
            }
        }
    }
}
```

#### Ergebnis:

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## 10139 Factovisors

### Java-Code:

```
/**
 * Angewandte Mathematik, SS11
 * Problem: 10139 - Factovisors
 * Link:
http://uva.onlinejudge.org/index.php?option=com\_onlinejudge&Itemid=8&category=13&page=show\_problem&problem=1080
 *
 * @author Brielbeck, Daniel
 * @author Weber, Georg
 * @version 1.0, 04/10/2011
 *
 * Method : Ad-Hoc
 * Status : Accepted
 * Runtime:
 */

import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.math.BigDecimal;

public class Main {
    public static void main(String[] args) throws Exception {
        BufferedReader reader = new BufferedReader(new InputStreamReader(System.in));
        String input;
        BigDecimal sum;
        BigDecimal ver;
        BigDecimal teiler;
        while ((input = reader.readLine()) != null) {
            boolean teilbar = false;
            int n = Integer.parseInt(input.split(" ")[0]);
            int m = Integer.parseInt(input.split(" ")[1]);
            sum = new BigDecimal("1");
            ver = new BigDecimal("0");
            teiler = new BigDecimal(input.split(" ")[1]);
            for (int i = n; i > 1; i--) sum = sum.multiply(new BigDecimal(String.valueOf(i)));
            do{
                ver.add(teiler);
                if(sum==ver){
                    teilbar=true;
                    if(sum>ver){
                        teilbar=false;
                        break;
                    }
                }
            } while(true);
            if(teilbar) System.out.println(input.split(" ")[1]+" divides "+ input.split("
")[0]+"!");
            else System.out.println(input.split(" ")[1]+" does not divide "+ input.split("
")[0]+"!");
        }
    }

    public static boolean ganzzahlig(BigDecimal y){
        return true;
    }
}
```