

```
1 //to check if a number is mobius or not
2 import java.util.Scanner;
3
4 public class Mobius {                                     //class starts
5     public static void main() {                           //main starts
6         Scanner sc = new Scanner(System.in);
7         while (true) {
8             System.out.print("Enter a positive natural number (N): ");
9             int N = sc.nextInt();
10            int result = mobius(N);
11            System.out.println("Mobius Function M(N) at N = " + N + " is: " +
12                result);
13            System.out.print("Do you want to continue? (y/n): ");
14            String choice = sc.next();
15            if (choice.equalsIgnoreCase("n")) {
16                break;
17            }
18        }
19    }
20
21    // Calculate the Möbius function
22    static int mobius(int n) {
23        int p = 0;
24        if (n % 2 == 0) {
25            n = n / 2;
26            p++;
27            if (n % 2 == 0) return 0;
28        }
29        for (int i = 3; i <= Math.sqrt(n); i += 2) {
30            if (n % i == 0) {
31                n = n / i;
32                p++;
33                if (n % i == 0) return 0;
34            }
35        }
36        return (p % 2 == 0) ? -1 : 1;
37    }
38 }                                         //main ends
39 }                                         //class ends
```