**Astu local contest**

**prob: smart**

When Dr. Orooji was your age, one of the popular TV shows was “Get Smart!” The main

character in this show (Maxwell Smart, a secret agent) had a few phrases; we used one such

phrase for the title of this problem and we’ll use couple more in the output!

**The Problem:**

A “prime” number is an integer greater than 1 with only two divisors: 1 and itself; examples

include 5, 11 and 23. Given a positive integer, you are to print a message indicating whether the

number is a prime or how close it is to a prime.

**The Input:**

The first input line contains a positive integer, n (n ≤ 100), indicating the number of values to

check. The values are on the following n input lines, one per line. Each value will be an integer

between 2 and 10,000 (inclusive).

**The Output:**

At the beginning of each test case, output “Input value: v” where v is the input value.

Then, on the next output line, print one of the following two messages:

- If the number is a prime, print “Would you believe it; it is a prime!”

- If the number is not a prime, print “Missed it by that much (d)!” where d

shows how close the number is to a prime number (note that the closest prime number

may be smaller or larger than the given number).

Leave a blank line after the output for each test case. Follow the format illustrated in Sample

Output.

**Sample Input:**

4

23

25

22

10000

**Sample Output:**

Input value: 23

Would you believe it; it is a prime!

Input value: 25

Missed it by that much (2)!

Input value: 22

Missed it by that much (1)!

Input value: 10000

Missed it by that much (7)!