

PRIMES20

One day a mouse saw some cheese on the table but there was a cat in the house. So the mouse needed a plan to get the cat away from the table. His first idea was to make the cat chase him and then hide but then he thought of a safer idea, to go to the cat's toy basket and wind the cat's toy mouse up and make a squeak and let the toy mouse go.

So while the cat was chasing the toy mouse the real mouse climbed on the table. When he was about to climb back down the cat came back to the kitchen to drink. And saw the mouse and locked him in the cage now to open the cage mouse needs to solve one puzzle, which is given 2 numbers a and b write the smallest positive number c such that the sum of the numbers is prime.

INPUT

First line consists of an integer T and then T test cases follow.

Having the value of a and b

OUTPUT

For each test case you have to output the number c in a separate line.

Constraints:

$$T \leq 10^3$$

a and b will be between 1 and 10^6

SAMPLE EXAMPLE

Input:

1

1 1

Output:

