# C: Centers of Primes

A prime number is a positive nonzero integer ( 1,2,3,... ) that is evenly divisible only by 1 and itself. In this problem you are to write a program that will select an inner sequence of primes (called *center numbers*) from the list of prime numbers between (and including) 1 and N. Your program will read a number N, determine the list of prime numbers from 1 to N (inclusive), and print the C*2 prime numbers from the center of the list if there are an even number of prime numbers, or print (C*2)−1 prime numbers from the center of the list if there are an odd number of prime numbers in the list.

### Input

The first line will contain T, the number of test cases to follow. Each test case will be on a line by itself and will consist of two numbers. The first number ( $1 \leq N \leq 10000$ ) is the largest number in the complete list of prime numbers from 1 to N, inclusive. The second number ( $1 \leq C \leq N$ ) defines the C*2 prime numbers to be printed from the center of the list if the length of the list is even; or the (C*2) −1 numbers to be printed from the center of the list if the length of the list is odd.

### Output

For each test case, print the number N followed by a colon, followed by the list of center numbers for the input value N from the list of prime numbers as defined above. If the size of the center list exceeds the limits of the list of prime numbers between 1 and N, the list of prime numbers between 1 and N (inclusive) should be printed. Each number from the center of the list should be preceded by exactly one blank. The output for each test case should be followed by a blank line. Your output should follow the exact format shown in the sample output below.

### Sample Input

```
4
21 2
18 2
18 18
100 7
```

### Sample Output

```
21: 5 7 11

18: 3 5 7 11

18: 1 2 3 5 7 11 13 17

100: 13 17 19 23 29 31 37 41 43 47 53 59 61 67
```