

Problem O. Gauss in Elementary School

Johann Carl Friedrich Gauss (1777–1855) was one of the most important German mathematicians. For those of you who remember the Deutsche Mark, a picture of him was printed on the 10,- DM bill. In elementary school, his teacher J. G. Buttner tried to occupy the pupils by making them add up the integers from 1 to 100. The young Gauss surprised everybody by producing the correct answers (5050) within seconds. Can you write a computer program that can compute such sums really quickly?

Problem

Given two integers n and m , you should compute the sum of all the integers from n to m . In other words, you should compute

$$\sum_{i=n}^m i = n + (n + 1) + (n + 2) + \dots + (m - 1) + m$$

Input

The first line contains the number of scenarios. Each scenario consists of a line containing the numbers n and m ($-10^9 \leq n \leq m \leq 10^9$).

Output

The output for every scenario begins with a line containing "Scenario #i:", where i is the number of the scenario starting at 1. Then print the sum of all integers from n to m . Terminate the output for the scenario with a blank line.

Sample Input

```
3
1 100
-11 10
-89173 938749341
```

Sample Output

```
Scenario #1:
5050

Scenario #2:
-11

Scenario #3:
440625159107385260
```