There is a grid of $n * m$ unit squares, which has $n + 1$ horizontal lines, $m + 1$ vertical lines and $(n + 1)(m + 1)$ intersection vertices. You can choose three distinct **non-collinear** vertices to form a triangle. For example, if $n = m = 1$, there are 4 vertices, which can form 4 triangles.

How many of these triangles have area between A and B (inclusive)?

Input

The first line contains the number of test cases T ($T \leq 25$). Each test case contains four integer n, m, A, B ($1 \leq n, m \leq 200$, $0 \leq A < B \leq nm$).

Output

For each test case, print the number of triangles whose area is between A and B, inclusive.

Sample Input

```
4
1 1 0 1
1 2 1 2
10 10 20 30
12 34 56 78
```

Sample Output

```
4
6
27492
1737488
```