Problem E. Billiard

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

There is a table with length n and width m.

A billiard ball begins to move from one corner with an angle of 45 degrees.

When will the ball bounce back to where it starts?

Formally, you are given n and m, and you need to calculate the return value of the following function.

```
int64_t check(int n, int m) {
  int x = 0, y = 0;
  int dx = 1, dy = 1;
  int64_t t = 0;
  while (1) {
    if (x + dx < 0) dx *= -1;
    if (x + dx > n) dx *= -1;
    if (y + dy < 0) dy *= -1;
    if (y + dy > m) dy *= -1;
    x += dx;
    y += dy;
    ++t;
    if (x == 0 && y == 0) break;
  }
  return t;
}
```

Input

The first line contains an integer t, the number of test cases ($1 \le t \le 10^5$). The test cases follow.

Each test case is described by a single line containing two integers n and m ($2 \le n, m \le 10^9$).

Output

For each test case, output a line containing one integer: the answer to the problem.

Example

standard input	*standard output*
5 2 2 2 3 2 4 2 5 2 6	4 12 8 20 12