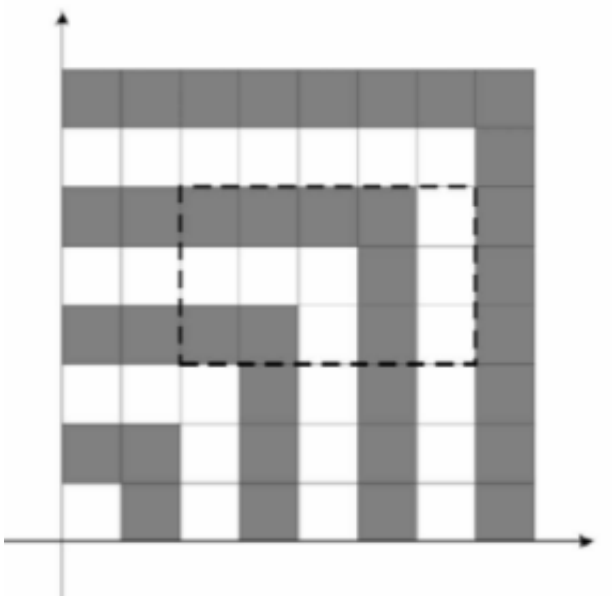
Statement

On the Oxy plane, there is a square of size 1000, with 4 vertices at 4 points: `(0, 0)`, `(0, 1000)`, `(1000, 0)` and `(1000, 1000)`. We color the regions inside the square like below:



Consider a rectangle with opposite corners at `(X1, Y1)` and `(X2, Y2)`, where:

- `X1`, `Y1`, `X2`, `Y2` are integers
- `0 <= X1, Y1, X2, Y2 <= 1000` (This rectangle lies completely inside our given square).

Each pair of integer points `(X, Y)` and `(X+2, Y+2)` where:

- `min(X1, X2) <= X < X+2 <= max(X1, X2)`
- `min(Y1, Y2) <= Y <= Y+2 <= max(Y1, Y2)`

forms a `2*2` square that lies completely inside this rectangle. **Count the number of `2*2` squares that contains 2 black cells and 2 white cells.**

For example, consider the rectangle with opposite corners `(2, 3)` and `(7, 6)` (marked with dash-line in the figure above). It contains six `2*2` squares containing 2 black cells and 2 white cells:

- (2, 3) - (4, 5)
- (4, 3) - (6, 5)
- (5, 3) - (7, 5)
- (2, 4) - (4, 6)
- (3, 4) - (5, 6)
- (5, 4) - (7, 6)

Constraints:

- 0 <= X1, Y1, X2, Y2 <= 1000.

Input

- 1st line: T - number of test cases.
- Next T lines: each line contains X1, Y1, X2, Y2

Output

- For each test case, print the result

Example

Input

```
1
2 3 7 6
```

Output

```
6
```