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# Lucky Edge

Problem Code: LKYEDGE

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as well.

In an undirected unweighted graph, an edge of the graph is said to be *lucky* if it is a part of some cycle of the graph.

You are given a list **E** of **M** edges. We define **f(i)** as the number of intervals **[l, r]** ( $1 \leq l \leq i \leq r \leq M$ ) such that if you build a graph from edges **E<sub>l</sub>, E<sub>l+1</sub>, ..., E<sub>r</sub>**, the edge **E<sub>i</sub>** will be a lucky edge in this graph.

Your task is to calculate the values of **f(1), f(2), ..., f(M)**.

## Input

The first line of the input contains an integer **T** denoting the number of test cases.

The first line of each test case contains a single integer **M** denoting the number of edges.

Each of the next **M** lines contains two space-separated integers **u<sub>i</sub>** and **v<sub>i</sub>** denoting that **i**-th edge connects nodes **u<sub>i</sub>** and **v<sub>i</sub>**.

## Output

For each test case, output a single line containing **M** integers, **i**-th of which should be value of **f(i)**.

## Constraints

- $1 \leq T \leq 50$
- $1 \leq M \leq 5,000$
- $1 \leq \text{sum of } M \text{ over all test-cases} \leq 20,000$
- $1 \leq u_i, v_i \leq 10,000$
- $u_i \neq v_i$

## Subtasks

My Submissions

(/OCT17/status/LKYEDGE,aulene)

All Submissions

(/OCT17/status/LKYEDGE)

Successful Submissions



- **Subtask #1 (10 points):**  $M \leq 200$  and sum of  $M \leq 2,300$
- **Subtask #2 (20 points):**  $M \leq 1,000$  and sum of  $M \leq 4,000$
- **Subtask #3 (70 points):** Original constraints

## Example

**Input :**

```
2
3
1 2
3 4
2 1
5
1 2
2 3
3 4
1 4
4 2
```

**Output :**

```
1 0 1
2 3 3 2 2
```

Author: [fudail \(/users/fudail/\)](/users/fudail/)

Tester: [7★ alex\\_2008 \(/users/alex\\_2008/\)](/users/alex_2008/)

Date Added: 3-10-2017

Time Limit: 2 secs

Source Limit: 50000 Bytes

Languages: ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 6.3, CPP14, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYPY, PYTH, PYTH 3.5, RUBY, SCALA, SCM chicken, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

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[Campus Chapters \(\[http://www.codechef.com/campus\\\_chapter/about\]\(http://www.codechef.com/campus\_chapter/about\)\)](http://www.codechef.com/campus_chapter/about)

[Domain Registration in India \(<http://www.bigrock.in/>\)](http://www.bigrock.in/) and [Web Hosting \(<http://www.bigrock.com/web-hosting/>\)](http://www.bigrock.com/web-hosting/) powered by BigRock