Largest Digit 2

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Let $f(x)$ be the largest digit in the decimal representation of a positive integer x. For example, $f(4523) = 5$ and $f(1001) = 1$.

Given four positive integers l_a, r_a, l_b, and r_b such that $l_a \leq r_a$ and $l_b \leq r_b$, you need to calculate

$$\sum_{a=l_a}^{r_a} \sum_{b=l_b}^{r_b} f(a+b)$$

That is, the sum of $f(a+b)$ over all (a, b) that satisfy $l_a \leq a \leq r_a$ and $l_b \leq b \leq r_b$.

Input

There are multiple test cases. The first line of the input contains an integer T ($1 \leq T \leq 10^3$), indicating the number of test cases. For each test case:

The first and only line contains four integers l_a, r_a, l_b, and r_b ($1 \leq l_a \leq r_a \leq 10^9$, $1 \leq l_b \leq r_b \leq 10^9$).

Output

For each test case, output one line containing an integer, indicating the answer.

Examples

standard input	standard output
2 178 182 83 85 2 5 3 6	91 100
1 1 1000000000 1 1000000000	8425695016000000001