Problem A. Arrays

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Input:          standard input
Output:         standard output
Time limit:     6 seconds
Memory limit:   256 megabytes
```

You are given a sequence of $3 \times N$ integers $(X_1, X_2, \ldots, X_{3\times N})$. Create three sequences $(A_1, A_2, \ldots, A_N)$, $(B_1, B_2, \ldots, B_N)$ and $(C_1, C_2, \ldots, C_N)$ such that:

- Each of the integers from 1 to $3 \times N$ belongs to exactly one of the sequences A, B or C;
- The value of $S = \sum_{i=1}^{N}(X_{A_i} - X_{B_i}) \times X_{C_i}$ is the largest possible.

Input

The input file contains T test cases, all having the same value of N. The first line of the input file contains the integers T and N, constrained as shown in the adjacent table. Each of the following T lines describes one test case and contains $3 \times N$ integers, the members of the sequence X. All these values are in range from 0 to 1000.

Constraints on N	Constraints on T
$1 \le N \le 10$	$1 \le T \le 1000$
$11 \le N \le 15$	$1 \le T \le 100$
$16 \le N \le 20$	$1 \le T \le 10$
$21 \le N \le 25$	$T = 1$

Output

The output file should consist of T lines. Each line should contain the largest possible value of S for the corresponding test case from the input file.

Example

standard input	standard output
1 2 4 1 8 2 0 5	46

Note: The maximal value is attained by taking $A = (1,3), B = (2,5), C = (4,6)$.