

Combinational Logic

Construct a 6 input gate which performs the following logical operation:

$$(not(A)).B + C.D + E.(not(F))$$

where A, B, C, D, E and F are the inputs to the 6 input gate.

Input:

The first line of input takes the number of test cases, T. Then T test cases follow. Each test case takes 6 space separated integers denoting the inputs to the 6 input gate, A, B, C, D, E and F.

Note: the inputs can be either 1's or 0's.

Output:

Print the output of the 6 input gate for each test case on a new line.

Constraints:

$$1 \leq T \leq 100$$

$$0 \leq A, B, C, D, E, F \leq 1$$

Example:

Input:

3

1 1 0 0 1 1

1 1 1 1 1 1

1 0 0 1 1 1

Output:

0

1

0

Explanation:

In the first test case, $A=1, B=1, C=0, D=0, E=1, F=1$ so $(\text{not}(A)).B + C.D + E.(\text{not}(F)) = 0.1 + 0.0 + 1.0 = 0 + 0 + 0 = 0$

In the second test case, $A=1, B=1, C=1, D=1, E=1, F=1$. so $(\text{not}(A)).B + C.D + E.(\text{not}(F)) = 0.1 + 1.1 + 1.0 = 0 + 1 + 0 = 1$

In the third test case, $A=1, B=0, C=0, D=1, E=1, F=1$. so $(\text{not}(A)).B + C.D + E.(\text{not}(F)) = 0.0 + 0.1 + 1.0 = 0 + 0 + 0 = 0$