C. Best Team

You want to put together the best team, but have a limited amount of money to spend and time to train. Given training time t_i, the cost c_i, and the benefit b_i associated with each potential team member, along with your total time T, and total money M, compute the largest benefit you can achieve. The chosen team members must have t_i-values that sum to at most T, and c_i-values that sum to at most M.

Input

The first line contains the number C ($1 \leq C \leq 20$) giving the number of test cases. The first line of each test case will contain the numbers T and M separated by a single space ($1 \leq T \leq 500$, $1 \leq M \leq 500$). The next line will contain the number n ($1 \leq n \leq 50$) giving the number of potential team members. The following n lines will each contain the three numbers, t_i, c_i, and b_i separated by single spaces. Each value will be between 0 and 500, inclusive.

Output

Output one line per test case containing the maximum achievable total benefit.

Sample Input/Output

Input	Output
7	200
100 100	290
3	0
40 60 100	30
60 40 100	70
50 50 190	200
100 100	180
3	
40 40 100	
60 40 100	
30 30 190	
400 400	
1	
500 500 500	
20 20	
4	
0 0 10	
0 0 10	
0 0 10	
30 30 30	
100 100	
5	
10 50 30	
60 50 30	
90 20 30	
40 40 20	
50 10 20	
100 100	
4	
50 50 100	
50 50 100	
50 50 1	
50 50 1	
20 20	
3	
10 10 90	
30 30 40	
10 10 90	