Problem G. Gas and Minerals

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	64 megabytes

An Artifact that could turn the tide of the war was discovered in one of the distant Terran colonies. Meanwhile, the intelligence service reports that a Zerg swarm is moving towards the colony. It is necessary to protect the Artifact at all costs before the arrival of reinforcements.

You have m units of minerals and g units of Vespen gas. In addition, there are n types of defensive buildings available for construction. A building of type i requires a_i units of minerals and b_i units of gas to construct, and increases the defenses of the base by c_i units. You can construct any number of buildings (including zero) of any type, provided that the total costs of minerals and gas for all buildings will not exceed m and g, respectively.

Determine what the maximum total building defense capability can be achieved under the given constraints.

Input

The first line contains three integers m, g and n — the number of available units of minerals and gas, respectively, and the number of building types ($0 \le m \le 1000$, $0 \le g \le 1000$, $1 \le n \le 10$).

The i th of the following n lines contains three integers a_i, b_i and c_i — the amount of units of mineral and gas are needed to construct a building of the i-th type and its defenses ($1 \le a_i \le 100$, $0 \le b_i \le 100$, $0 \le c_i \le 100$).

Output

Print a single integer — the maximum total building defense capability that can be achieved.

Examples

standard input	standard output
10 10 3 7 0 6 6 2 7 2 5 5	12
11 10 3 7 0 6 6 2 7 2 5 5	16

Note

In the first example, the optimum is provided by the construction of one building of type 2 and one building of type 3.

In the second example, it is most profitable to construct one building of type 1 and two buildings of type 3.