Problem F. Flow Management

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

Mario is doing plumbing works in his house in order to connect various household appliances to the water supply.

There are two water socket types available: $\frac{1}{2}$ and $\frac{3}{4}$. One initial socket of type t is already connected to the supply system, but Mario has a appliances that require sockets of the first type and b appliances that require sockets of the second type.

Mario uses standard parts for his work:

- A pipe splitter allows one to replace one socket with several sockets of the same type. For both types, splitters into two and into three pipes are available.
- A pipe adapter replaces any single socket of any type with a socket of another type.
- A pipe cap is used to close any single socket. Different types of caps are used for different types of sockets.

Each part has a predefined price at the nearest DIY market. You may assume that there is an unlimited number of parts of each kind available.

Mario is known to be a big miser, therefore he wants you to help him determine the minimum amount of money he has to spend to connect his appliances with a sockets of the first type and b sockets of the second type. No socket can be left open and unused, or water will flow out of it.

Input

The first line of the input contains a single integer n — the number of test cases you are to solve ($1 \le n \le 50\,000$). Each of the following n lines contains ten integers: a, b, $cost_{\frac{1}{2}\times 2}$, $cost_{\frac{1}{2}\times 3}$, $cost_{\frac{3}{4}\times 2}$, $cost_{\frac{3}{4}\times 3}$, $cost_{\frac{1}{2}\times 0}$, $cost_{\frac{3}{4}\times 0}$, $cost_{\frac{1}{2}\leftrightsquigarrow\frac{3}{4}}$, t — the number of household appliances with socket type $\frac{1}{2}$ and $\frac{3}{4}$, the price of the splitter type $\frac{1}{2}$ to 2 and 3 pipes, the price of the splitter type $\frac{3}{4}$ to 2 and 3 pipes, the price of the pipe caps of type $\frac{1}{2}$ and $\frac{3}{4}$, the price of adapters between pipe types $\frac{1}{2} \leftrightsquigarrow \frac{3}{4}$ and a type of the initial water socket (1 — for type $\frac{1}{2}$, 2 — for type $\frac{3}{4}$) respectively. The numbers a, b and all prices are non-negative integers not exceeding 10^9.

Output

For each of n test cases print a line containing a single integer — the minimum amount of money that Mario has to spend in order to buy all necessary tools to assemble a pipeline from a given water socket to his a household appliances of type $\frac{1}{2}$ and b household appliances of type $\frac{3}{4}$, without leaving any socket open and unused.

Examples

standard input	standard output
3 1 1 1 1 1 1 1 1 1 1 2 3 5 6 3 1 2 1 1 2 0 3 10 10 5 8 6 4 3 1	2 4 11

Note

In the first sample you need to install a single splitter of type $\frac{1}{2}$ to two appliances and then connect an adapter from type $\frac{1}{2}$ to type $\frac{3}{4}$ to it.