### Weapon Choice

Chef is playing a videogame, and is now at a boss fight.  
The boss has HH health.

Chef has two weapons with him:

* First, a gun that does XX damage every hit.
* Second, a laser that does Y1Y1​ damage every hit.  
  However, after the KK-th time it's used, the laser's output drops; and it will then do only Y2Y2​ damage every hit (Y2<Y1Y2​<Y1​).

Chef must choose **exactly one** of the two weapons to fight the boss, and cannot change once the fight begins.  
What's the minimum number of hits he needs to defeat the boss?

The boss will be defeated once Chef inflicts at least HH damage to it in total.

### Input Format

* The first line of input will contain a single integer TT, denoting the number of test cases.
* The only line of each test case contains five space-separated integers: H,X,Y1,Y2,KH,X,Y1​,Y2​,K — the boss' health, the gun's damage, the laser's initial damage, the laser's lowered damage, and the threshold before lowering.

### Output Format

For each test case, output on a new line the minimum number of hits needed for Chef to defeat the boss.

### Constraints

* 1≤T≤1051≤T≤105
* 1≤H,X,Y1,Y2,K≤1091≤H,X,Y1​,Y2​,K≤109
* Y2<Y1Y2​<Y1​

### Sample 1:

Input

Output

4

20 4 12 1 3

20 4 12 1 1

20 4 12 3 1

117 21 35 10 2

2

5

4

6

### Explanation:

**Test case** 11**:** It's optimal for Chef to use the laser. It does Y1=12Y1​=12 damage for the first two hits, which defeats the boss.

**Test case** 22**:** Now, K=1K=1, meaning the laser's output drops after the first hit.  
Using the laser would thus require 99 hits (the first does Y1=12Y1​=12 damage, every one after does Y2=1Y2​=1), while the gun requires 55 hits and is thus optimal.

**Test case** 33**:** Using the laser now requires only 44 hits:

* The first hit does Y1=12Y1​=12 damage. K=1K=1 so the output drops after this.
* Every subsequent hit does Y2=3Y2​=3 damage. 33 hits is 99 damage, which along with the initial 1212 is enough to defeat the boss.

More Info

Time limit1 secs

Memory limit1.5 GB

Source Limit50000 Bytes

#include<bits/stdc++.h>

using namespace std;

#define FAST\_IO (ios\_base:: sync\_with\_stdio(false),cin.tie(NULL));

#define int long long

#define ll long long

#define ull unsigned long long

#define endl '\n'

#define ff first

#define ss second

#define pb push\_back

#define all(x) x.begin(), x.end()

#define sz(x) (int)(x).size()

#define yes cout<<"YES"<<endl

#define no cout<<"NO"<<endl

#define neg1 cout<<-1<<endl

#define PI 3.141592653589793238

#define MIN INT\_MIN

#define MAX INT\_MAX

#define INF LONG\_LONG\_MAX

#define MOD 1000000007

#define LLM 1000000000000000007

ll factorial(ll n) { if(n==0) return 1; ll res = 1; for (ll i = 2; i <= n; i++) res = res \* i; return res; }

ll nPr(ll n, ll r) { return factorial(n) / factorial(n - r); }

ll nCr(ll n, ll r) { return factorial(n) / (factorial(r) \* factorial(n - r));}

ll gcd(ll a, ll b) { if (b == 0) return a; return gcd(b, a % b); }

ll lcm(ll a, ll b) { return (a \* b) / gcd(a, b);}

ull mypow(ull a, ull b) { ull ans = 1; a%=MOD; while(b){ if (b&1) ans = (ans\*a) % MOD; a = (a\*a) % MOD; b >>= 1; } return ans; }

bool isPrime(ll n) { if(n <= 1) return false; for(ll i = 2; i\*i <= n; i++) if(n % i == 0) return false; return true; }

#ifndef ONLINE\_JUDGE

#define dbg(x) cerr << #x <<" "; \_print(x); cerr << endl;

#define dbgin(x) cerr << #x <<" "; \_print(x); cerr << ";"<<endl;

#else

#define dbg(x)

#define dbgin(x)

#endif

void \_print(int t) {cerr << t;}void \_print(string t) {cerr << t;}void \_print(char t) {cerr << t;}

void \_print(long double t) {cerr << t;}void \_print(double t) {cerr << t;}void \_print(unsigned ll t) {cerr << t;}

template <class T, class V> void \_print(pair <T, V> p);

template <class T> void \_print(vector <T> v);template <class T> void \_print(set <T> v);

template <class T, class V> void \_print(map <T, V> v);template <class T> void \_print(multiset <T> v);

template <class T, class V> void \_print(pair <T, V> p) {cerr << "{"; \_print(p.first); cerr << ","; \_print(p.second); cerr << "}";}

template <class T> void \_print(vector <T> v) {cerr << "[ "; for (T i : v) {\_print(i); cerr << " ";} cerr << "]";}

template <class T> void \_print(set <T> v) {cerr << "[ "; for (T i : v) {\_print(i); cerr << " ";} cerr << "]";}

template <class T> void \_print(multiset <T> v) {cerr << "[ "; for (T i : v) {\_print(i); cerr << " ";} cerr << "]";}

template <class T> void \_print(unordered\_set <T> v) {cerr<<"[ "; for(T i : v) {\_print(i); cerr<<" ";} cerr<<"]";}

template <class T, class V> void \_print(map <T, V> v) {cerr << "[ "; for (auto i : v) {\_print(i); cerr << " ";} cerr << "]";}

template <class T, class V> void \_print(multimap <T, V> v) {cerr << "[ "; for (auto i : v) {\_print(i); cerr << " ";} cerr << "]";}

template <class T, class V> void \_print(unordered\_map <T, V> v) {cerr << "[ "; for (auto i : v) {\_print(i); cerr << " ";} cerr << "]";}

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void solve()

{

int h,x,y1,y2,k;

cin>>h>>x>>y1>>y2>>k;

int a=h/x,b;

if(h%x) a++;

int p=y1\*k;

if(p>=h)

{

b=h/y1;

if(h%y1)

b++;

}

else

{

b=k+(h-p)/y2;

if((h-p)%y2)

b++;

}

cout<<min(a,b)<<endl;

}

int32\_t main()

{

FAST\_IO;

int TC = 1;

cin >> TC;

while (TC--)

solve();

}