#include <iostream>

#include<fstream>

using namespace std;

long long x,y,z;

int a,b,Min;

ifstream fin("bazaxy.in");

ofstream fout("bazaxy.out");

int k, v[20];

int main()

{

fin>>a>>b>>x>>y;

if(a<b){

/// trec y in baza 10

long long s=0,p=1;

if(b!=10){

do{

s=s+y%10\*p;

p=p\*b;

y/=10;

}while(y!=0);

}

else

s=y;

/// trec in baza a

do{

v[++k]=s%a;

s=s/a;

}while(s!=0);

z=x,Min=11;

}

else

if(b<a){

/// trec x in baza 10

long long s=0,p=1;

if(a!=10){

do{

s=s+x%10\*p;

p=p\*a;

x/=10;

}while(x!=0);

}

else

s=x;

/// trec in baza b

do{

v[++k]=s%b;

s=s/b;

}while(s!=0);

z=y,Min=11;

}

else

{

z=x;Min=11;

long long s=y;

do{

v[++k]=s%10;

s/=10;

}while(s!=0);

}

/// cifra comuna

do{

for(int i=1;i<=k;i++)

if(z%10==v[i]&&v[i]<Min)

Min=v[i];

z/=10;

}while(z!=0);

if(Min==11)

fout<<-1;

else

fout<<Min;

fout<<"\n";

if(a<b){

fout<<x<<" ";

for(int i=k;i>=1;i--)

fout<<v[i];

fout<<"\n";

}

else

if(b<a)

{

for(int i=k;i>=1;i--)

fout<<v[i];

fout<<" "<<y;

}

else

fout<<x<<" "<<y;

return 0;

}