#include <fstream>

#include <cassert>

using namespace std;

ifstream fin ("bazaxy.in");

ofstream fout("bazaxy.out");

long long f1[11], f2[11];

long long x, y, a1, a2, b1, b2, i, aux;

long long transfFromBto10(long long x, long long b) {

long long p = 1;

long long r = 0;

while (x!=0) {

long long c = x%10;

r = r+c\*p;

p = p\*b;

x /= 10;

}

return r;

}

long long transfFrom10Tob(long long x, long long b, long long f[]) {

long long v[30];

long long nr = 0;

while (x) {

v[++nr] = x%b;

f[x%b] = 1;

x /= b;

}

long long r = 0;

assert(nr <= 18);

for (i=nr;i>=1;i--)

r = r\*10 + v[i];

return r;

}

int main () {

fin>>b1>>b2;

fin>>a1>>a2;

x = a1;

y = a2;

if (b1 < b2) {

/// duc pe a2 la a1

aux = transfFromBto10(a2, b2);

y = transfFrom10Tob(aux, b1, f2);

aux = transfFromBto10(a1, b1);

x = transfFrom10Tob(aux, b1, f1);

} else {

aux = transfFromBto10(a1, b1);

x = transfFrom10Tob(aux, b2, f1);

aux = transfFromBto10(a2, b2);

y = transfFrom10Tob(aux, b2, f2);

}

for (i=0;i<=9;i++)

if (f1[i] && f2[i]) {

break;

}

if (i == 10)

fout<<"-1\n";

else

fout<<i<<"\n";

fout<<x<<" "<<y<<"\n";

}