#include <fstream>

using namespace std;

ifstream cin("cartonase.in"); ofstream cout("cartonase.out");

int n;

int cmmdc(int a, int b);

int main()

{

cin >> n;

int a, b;

cin >> a >> b;

if(a == 1)

{

cout << 1;

return 0;

}

int sol = cmmdc(a, b);

if(sol == 1)

{

cout << 2;

return 0;

}

for(int i = 3; i <= n; i++)

{

a = b;

cin >> b;

sol = cmmdc(sol, b);

if(sol == 1)

{

cout << i;

return 0;

}

}

cout << -1;

return 0;

}

int cmmdc(int a, int b)

{

int r = a % b;

while(r)

{

a = b;

b = r;

r = a % b;

}

return b;

}