Var x,y:array[1..1000] of integer;

i,n,k,x:integer;

S:real;

Begin

assign (input,’POINT.DAT’);

reset(input);

assign (output,’POINT.DAT’);

rewrite(output);

Readln(n);

For i:=1 to n do read(x[i],y[i]);

X[n+1]:=x[1];

Y[n+1]:=y[1];

S:=0;

For i:=1 to n do s:=s+x[i]\*y[i+1]- x[i+1]\*y[i];

S:=1/2\*abs(s);

K:=0;

For i:=1 to n do begin

A:=abs(x[i]-x[i+1]);

B:= abs(y[i]-y[i+1]);

If a<b then begin t:=a;a:=b;b:t;end;

While a mod b<>0 do begin

T:=a mod b;

A:=b;

B:=t;

End;

K:=k+a;

End;

 X: =round( s - k/2 + 1);

Writeln(x);

Close(input);

Close(output);

End.