Program Inna\_Skachcov;

uses wincrt;

const m=9; n=6;

var a1,a0,eps,C1,Sx,Q5,Q6: real;

i,g,P,K,l: integer;

z:array[1..9] of real;

y,yn,yb:array[1..9] of real;

B,B1:array[1..6,1..9] of real;

C:array[1..6] of real;

x0,x1:array[1..6] of real;

Q,Q1,Q2,Q3,Q4:array[1..6] of real;

A:array[1..6] of real;

t1,t2:text;

label m1,m2,m3;

begin

assign(t1,'Inna.pas'); reset(t1);

assign(t2,'Finish.pas'); rewrite(t2);

 readln(t1,eps);

 for i:=1 to m do readln(t1,z[i],y[i]);

 for i:=1 to n do readln(t1,C[i]);

 for i:=1 to n do

 for g:=1 to m do readln(t1,B[i,g]);

 for g:=1 to n do x0[g]:=1/n;

a0:=1;

m1:

 for i:=1 to n do

begin

 Q[i]:=0;

 for g:=1 to m do

 Q[i]:=Q[i]+B[i,g]\*x0[g];

end;

 for i:=1 to n do

begin

 Q1[i]:=0;

 Q2[i]:=0;

 Q3[i]:=0;

 Q4[i]:=0;

 for g:=1 to m do

begin

 Q1[i]:=Q1[i]+exp(a0\*(yn[i]-Q[i]))\*(yn[i]-Q[i]);

 Q2[i]:=Q2[i]+exp(a0-(Q[i]-yb[i]))\*(Q[i]-yb[i]);

 Q3[i]:=Q3[i]+exp(a0\*(yn[i]-Q[i]));

 Q4[i]:=Q4[i]+exp(a0\*Q[i]-yb[i]);

end;end;

Sx:=0;

 for K:=1 to n do

 begin

 Sx:=Sx+x0[K];

 Q5:=exp(a0\*(Sx-1))\*(Sx-1);

 Q6:=exp(Sx-1)

end;

 for P:=1 to n do

 x1[P]:=(1/a0\*(Q1[P]+Q2[P]+Q5)-1/(a0\*a0)\*(Q3[P]

 +Q4[P]+Q6))-(Sx-1)\*exp(Sx-1)/exp(Sx-1)+1-Sx-x0[P];

 for i:=1 to n do begin

A[i]:=0;

for g:=1 to n do

 A[i]:=A[i]+Q3[i]\*B1[i,g]+Q4[i]\*B1[i,g];

end;

 a1:=1/(yn[i]-Q[i])\*ln(C1+A[i]+Q6);

 for i:=1 to n do

begin

 if ABS((x1[i]-x0[i])/x1[i])>=eps then goto m2;

 if ABS((a1-a0)/a1)>=eps then goto m2;

end;

for i:=1 to n do

writeln(t2,x1[i]);

writeln(t2,a1);

goto m3;

m2:

 for i:=1 to n do

 x0[i]:=x1[i];

 a0:=a1;

 goto m1;

m3:

end.