

```

n=5;
A=rand(n)+eye(n);
b=rand(n,1);
D=diag(diag(A));
L=A;
U=A;
for m=1:length(A)
    for k=1:m
        L(k,m)=0;
        U(m,k)=0;
    end
end

v=zeros(n,1);
V=v;
for k=1:9
    v=inv(D)*((-L-U)*v+b);
    V=[V,v];
end
V
vg=zeros(n,1);
Vg=vg;
for k=1:9
    vg=inv(D+L)*((-U)*vg+b);
    Vg=[Vg,vg];
end
Vg
[A\b-v A\b-vg]

```

V =

0	0.3969	-0.0670	0.8725	-0.8180	2.2624	-3.3644	6.8885	-11.8164	22.2914
0	0.4829	0.0333	0.9436	-0.7203	2.2934	-3.2203	6.8237	-11.5004	21.9138
0	0.3512	-0.4634	0.8644	-1.6628	2.8830	-5.4427	9.7216	-17.9441	32.5050
0	0.2954	-0.3892	0.8691	-1.3830	2.7631	-4.7705	8.9865	-16.0913	29.6500
0	0.1584	-0.4141	0.6073	-1.2151	2.1509	-3.9567	7.2017	-13.1362	23.9613

Vg =

0	0.3969	0.3188	0.2769	0.2626	0.2592	0.2590	0.2594	0.2597	0.2599
0	0.2906	0.3432	0.3431	0.3373	0.3338	0.3323	0.3317	0.3315	0.3315
0	-0.0894	-0.0717	-0.0662	-0.0698	-0.0743	-0.0774	-0.0789	-0.0797	-0.0800
0	0.0440	0.0818	0.1012	0.1087	0.1109	0.1113	0.1112	0.1110	0.1109
0	-0.0258	-0.0201	-0.0103	-0.0031	0.0011	0.0032	0.0042	0.0045	0.0047

ans =

-2.2031e+01	1.4299e-04
-2.1582e+01	1.8438e-05
-3.2585e+01	-1.4280e-04
-2.9539e+01	-9.4778e-05
-2.3957e+01	5.2124e-05