

```
>> A=randn(5,5);
>> H=hessen(A,true)
```

A =

0.9239	-0.4164	0.0645	-0.9395	-0.9905
0.2669	1.2247	0.6003	-0.0375	-1.1730
0.6417	-0.0436	-1.3615	-1.8963	-1.7254
0.4255	0.5824	0.3476	-2.1280	0.2882
-1.3147	-1.0065	-0.1818	-1.1769	-1.5942

S =

0.9239	-0.4164	0.0645	-0.9395	-0.9905
-1.5468	-1.2090	0.2110	0.3781	-0.5161
0	-0.9046	-1.4992	-1.7492	-1.4930
0	0.0115	0.2563	-2.0305	0.4423
0	0.7576	0.1003	-1.4782	-2.0704

S =

0.9239	-0.5384	0.0214	-0.9682	-0.9021
-1.5468	-0.4216	0.4896	0.5628	-1.0868
0	-0.0098	-1.1827	-1.5393	-2.1416
0	0.8262	0.5445	-1.8393	-0.1482
0	-1.5255	-0.7074	-2.0139	-0.4154

S =

0.9239	-0.5384	0.0214	-0.9682	-0.9021
-1.5468	-0.4216	0.4896	0.5628	-1.0868
0	1.7349	0.8880	0.9035	0.3067
0	0	-0.4361	-2.9962	-1.3077
0	0	1.1031	0.1221	1.7254

S =

0.9239	-0.5384	0.3320	-1.1153	-0.6305
-1.5468	-0.4216	1.2209	0.2165	-0.4474
0	1.7349	0.1555	1.2504	-0.3337
0	0	-0.2746	-3.0727	-1.1665
0	0	-1.4652	1.3383	-0.5203

S =

0.9239	-0.5384	0.3320	-1.1153	-0.6305
-1.5468	-0.4216	1.2209	0.2165	-0.4474
0	1.7349	0.1555	1.2504	-0.3337
0	0	1.4907	-0.7495	0.7262
0	0	0	3.2666	1.0507

S =

0.9239	-0.5384	0.3320	0.8251	0.9801
-1.5468	-0.4216	1.2209	0.3999	-0.2952
0	1.7349	0.1555	0.0977	-1.2905
0	0	1.4907	-0.5757	0.8704

```
0      0      0    -1.6343    -3.0172
```

H =

```
0.9239    -0.5384    0.3320    0.8251    0.9801
-1.5468    -0.4216    1.2209    0.3999   -0.2952
0      1.7349    0.1555    0.0977   -1.2905
0      0      1.4907   -0.5757    0.8704
0      0      0    -1.6343   -3.0172
```

```
>> l=sort(eig(A));
>> lH=sort(eig(H));
>> norm(l-lH)
```

ans =

```
7.1779e-15
```

```
>> S=A+A';
>> T=hessen(S,false);
>> norm(T-T')
```

ans =

```
9.9679e-16
```

```
>> isbanded(T,1,1)
```

ans =

```
logical
```

```
0
```

```
>>
```