Analysis of the Data from Myelopoiesis

```
clearvars
addpath(genpath('../'))
```

Load the processed data and normalize

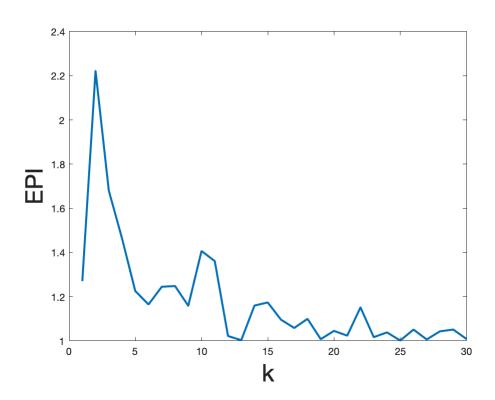
```
load olsson_new.mat
data = data_olsson_clean;
data = log(data+1);
data = (data-mean(data))./std(data);
true_labs = labs_cluster_clean;
[N_cell,~] = size(data);
```

Estimation of Number of Clusters from EPI

```
par.choice_distance = 'cosine';
out = EstClusterNum(data,par);
Mean value of sigma: 0.35425
Minimum value of sigma: 0.23401
Maximum value of sigma: 0.47158

plot(out.ratio(1:30),'linewidth',2.0)
xlabel('k', 'FontSize', 24);
```

```
ylabel('EPI', 'FontSize', 24);
```



Initial visualization by tSNE

```
rng(1)
choice_distance = 'cosine';
Dist = squareform(pdist (data,choice_dist))
ydata = tsne_d(Dist);
```

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.8168

Iteration 20: error is 36.9587

Iteration 30: error is 36.704

Iteration 40: error is 37.516

Iteration 50: error is 36.967

Iteration 60: error is 36.9461

Iteration 70: error is 37.435

Iteration 80: error is 37.5462

Iteration 90: error is 37.6004

Iteration 100: error is 2.3453

Iteration 110: error is 1.2956

Iteration 120: error is 0.93386

Iteration 130: error is 0.79456

Iteration 140: error is 0.6985

Iteration 150: error is 0.66023

Iteration 160: error is 0.65478

Iteration 170: error is 0.65056

Iteration 180: error is 0.64754

Iteration 190: error is 0.64502

Iteration 200: error is 0.64309

Iteration 210: error is 0.64146

Iteration 220: error is 0.64012

Iteration 230: error is 0.639

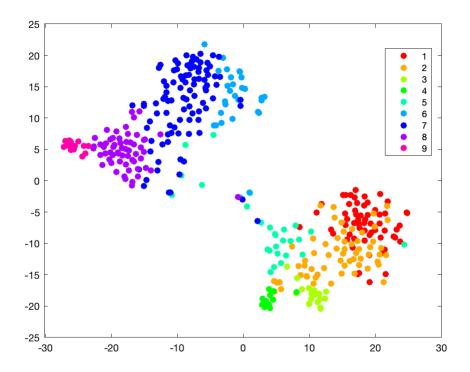
Iteration is 0.63808 240: error Iteration 250: is 0.63723 error Iteration 260: is 0.63593 error Iteration 0.63452 270: is error Iteration is 0.63337 280: error Iteration 290: is 0.63259 error Iteration is 300: 0.632 error Iteration 0.63154 is 310: error Iteration 0.63117 320: is error Iteration 330: error is 0.63087 Iteration 340: error is 0.63062 Iteration 350: error is 0.63042 Iteration 360: error is 0.63025 Iteration 370: error is 0.63011 Iteration 380: is 0.63 error Iteration 390: is 0.6299 error Iteration is 0.62982 400: error Iteration 410: is 0.62974 error Iteration 0.62968 420: is error Iteration 430: 0.62963 is error Iteration error is 440: 0.62959

Iteration 450: is 0.62955 error Iteration 460: is 0.62951 error Iteration 0.62948 is 470: error Iteration 480: is 0.62946 error Iteration is 0.62943 490: error Iteration 500: is 0.62941 error Iteration is 0.6294 510: error Iteration 520: 0.62938 is error Iteration 0.62937 530: is error Iteration 540: is 0.62936 error Iteration 550: error is 0.62934 Iteration 560: error is 0.62934 Iteration 570: error is 0.62933 Iteration 580: error is 0.62932 Iteration 590: is 0.62931 error Iteration 600: is 0.62931 error Iteration is 610: 0.6293 error Iteration 620: error is 0.6293 Iteration 0.62929 630: is error Iteration 640: 0.62929 is error Iteration error is 650: 0.62929

Iteration 660: is 0.62928 error Iteration 670: is 0.62928 error Iteration 0.62928 680: is error Iteration is 690: 0.62928 error Iteration 0.62928 700: is error Iteration 710: is 0.62927 error Iteration 0.62927 720: is error Iteration 0.62927 is 730: error Iteration 0.62927 740: is error Iteration 750: error is 0.62927 Iteration 0.62927 error is 760: Iteration error is 770: 0.62927 Iteration error is 780: 0.62927 Iteration 0.62927 790: error is Iteration is 0.62927 800: error Iteration 810: is 0.62926 error Iteration 820: is 0.62926 error Iteration 830: is 0.62926 error 0.62926 Iteration 840: is error Iteration 850: 0.62926 is error Iteration error is 860: 0.62926

```
Iteration 870:
               error is 0.62926
                     is 0.62926
Iteration 880:
               error
Iteration 890:
               error is 0.62926
Iteration 900:
               error is 0.62926
Iteration 910:
               error is 0.62926
Iteration 920:
               error is 0.62926
Iteration 930:
               error is 0.62926
Iteration 940:
               error is 0.62926
Iteration 950:
               error is 0.62926
Iteration 960:
               error is 0.62926
Iteration 970:
               error is 0.62926
Iteration 980:
               error is
                        0.62926
Iteration 990:
               error is 0.62926
Iteration 1000:
                error is 0.62926
```

```
score = ydata;
figure;
gscatter(score(:,1),score(:,2),true_lab
```



```
score_tsne = score;
```

MuTrans Dynamical Analysis of the Single-Cell Data

parameter and option settings

```
rng(1)
par.perplex = 150;
par.K_cluster = 10;
par.trials = 100;
par.alpha_scale = 0.5;
par.weight_scale = false;
```

```
% Dynamical Analysis and Output
tic;
Output = DynamicalAnalysis (data, par);
Mean value of sigma: 0.35425
Minimum value of sigma: 0.23401
Maximum value of sigma: 0.47158
Mean value of sigma: 0.16017
Minimum value of sigma: 0.1114
Maximum value of sigma: 0.27312
Iteration 10: error is 38.8168
Iteration 20: error is 36.9587
Iteration 30: error is 36.704
Iteration 40: error is 37.516
Iteration 50: error is 36.967
Iteration 60: error is 36.9461
Iteration 70: error is 37.435
Iteration 80: error is 37.5462
Iteration 90: error is 37.6004
Iteration 100: error is 2.3453
```

par.true_labs = true_labs;

Iteration 110: is 1,2956 error is 0.93386 Iteration 120: error Iteration 130: 0.79456 is error Iteration 140: error 0.6985 is Iteration 150: is 0.66023 error Iteration 160: is 0.65478 error Iteration 170: 0.65056 is error Iteration 180: 0.64754 is error Iteration 0.64502 190: error is Iteration is 0.64309 200: error Iteration 0.64146 210: is error Iteration error is 0.64012 220: Iteration 230: error is 0.639 Iteration 240: error is 0.63808 Iteration 250: is 0.63723 error Iteration 260: is 0.63593 error Iteration is 0.63452 270: error Iteration 280: is 0.63337 error Iteration 0.63259 290: is error Iteration is error 0.632 300: Iteration error is 310: 0.63154

Iteration 320: is 0.63117 error 0.63087 Iteration 330: is error Iteration 340: is 0.63062 error Iteration 350: is 0.63042 error Iteration 360: is 0.63025 error Iteration 370: is 0.63011 error Iteration is 380: 0.63 error Iteration is 0.6299 390: error Iteration 0.62982 is 400: error Iteration 410: error is 0.62974 Iteration 420: error is 0.62968 Iteration error is 0.62963 430: Iteration 440: error is 0.62959 Iteration 450: error is 0.62955 Iteration is 460: 0.62951 error Iteration is 470: 0.62948 error Iteration is 480: 0.62946 error Iteration 490: is 0.62943 error Iteration 500: is 0.62941 error Iteration 510: is 0.6294 error Iteration error is 520: 0.62938

Iteration 530: is 0.62937 error Iteration 540: is 0.62936 error Iteration 550: is 0.62934 error Iteration 560: is 0.62934 error Iteration 570: is 0.62933 error Iteration 580: is 0.62932 error Iteration 0.62931 590: is error Iteration 600: is 0.62931 error Iteration 610: is 0.6293 error Iteration 620: is 0.6293 error Iteration 630: 0.62929 error is Iteration error is 640: 0.62929 Iteration error is 650: 0.62929 Iteration 0.62928 660: error is Iteration is 0.62928 670: error Iteration 680: is 0.62928 error Iteration is 0.62928 690: error Iteration 700: is 0.62928 error Iteration 0.62927 710: is error Iteration 720: 0.62927 is error Iteration 730: error is 0.62927

Iteration 740: is 0.62927 error Iteration 750: is 0.62927 error Iteration 0.62927 is 760: error Iteration is 770: 0.62927 error Iteration 0.62927 error 780: is Iteration is 790: error 0.62927 Iteration 0.62927 800: is error Iteration is 0.62926 810: error Iteration is 0.62926 820: error Iteration 0.62926 830: error is Iteration 0.62926 840: is error Iteration error is 850: 0.62926 Iteration 860: is 0.62926 error Iteration 0.62926 870: error is Iteration is 880: 0.62926 error Iteration 890: is 0.62926 error is Iteration 900: 0.62926 error Iteration 910: 0.62926 is error Iteration 920: is 0.62926 error Iteration 0.62926 930: is error Iteration error is 940: 0.62926

Iteration 950: error is 0.62926

Iteration 960: error is 0.62926

Iteration 970: error is 0.62926

Iteration 980: error is 0.62926

Iteration 990: error is 0.62926

Iteration 1000: error is 0.62926

 $J_{new} = 0.8010$

J new = 0.7856

J new = 0.7618

J new = 0.7527

J new = 0.7452

J new = 0.7447

 $J_{new} = 0.7457$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.699

Iteration 20: error is 37.6218

Iteration 30: error is 37.1324

Iteration 40: error is 37.186

Iteration 50: error is 37.4237

Iteration is 37.6821 60: error is 36.8857 Iteration 70: error Iteration is 80: 37.5977 error Iteration 90: error is 36.9256 Iteration 100: is 2.2263 error Iteration 110: is 1.2845 error Iteration 120: 0.91134 is error Iteration error is 0.75648 130: Iteration 0.70717 140: is error Iteration 150: error is 0.67767 Iteration 160: 0.66258 error is Iteration error is 0.65774 170: error is 0.65427 Iteration 180: Iteration error is 0.65149 190: Iteration is 200: 0.64938 error Iteration 210: is 0.64756 error Iteration is 0.64627 220: error Iteration 230: is 0.64493 error Iteration 0.64395 240: is error Iteration 250: 0.64309 is error Iteration error is 260: 0.64172

Iteration is 0.64033 270: error Iteration 280: is 0.63926 error Iteration is 290: 0.63847 error Iteration 300: is 0.63789 error Iteration is 0.63744 error 310: Iteration 320: is 0.63707 error Iteration 0.63678 330: is error Iteration 0.63655 is 340: error Iteration 350: 0.63635 is error Iteration 360: is 0.63619 error Iteration 370: 0.63606 is error Iteration 380: error is 0.63595 Iteration 390: 0.63586 is error Iteration is 0.63579 400: error Iteration is 0.63572 410: error Iteration is 420: 0.63566 error Iteration is 0.63562 430: error Iteration is 0.63557 440: error Iteration 450: 0.63554 is error Iteration 460: 0.63551 is error Iteration 470: is 0.63548 error

Iteration is 0.63545 480: error 0.63543 Iteration 490: is error Iteration is 500: 0.63542 error Iteration 510: is 0.6354 error 0.63539 Iteration 520: is error Iteration 530: 0.63537 is error Iteration 540: is 0.63536 error Iteration 0.63535 550: is error Iteration 560: 0.63534 is error Iteration 570: is 0.63534 error Iteration 580: error is 0.63533 Iteration 590: error is 0.63532 Iteration error is 0.63532 600: Iteration error is 0.63531 610: Iteration is 620: 0.63531 error Iteration is 630: 0.6353 error Iteration is 0.6353 640: error Iteration 650: error is 0.6353 Iteration 660: 0.63529 is error Iteration 670: 0.63529 is error Iteration error is 680: 0.63529

Iteration is 0.63529 690: error Iteration 0.63529 700: is error Iteration is 710: 0.63528 error Iteration 720: is 0.63528 error Iteration is 0.63528 730: error Iteration 740: is 0.63528 error Iteration 0.63528 750: error is Iteration 0.63528 760: is error Iteration 0.63528 770: is error Iteration 0.63528 780: error is Iteration 0.63528 790: is error 0.63527 Iteration error is 800: Iteration 0.63527 810: is error Iteration is 0.63527 820: error Iteration 830: is 0.63527 error Iteration 840: is 0.63527 error Iteration 850: is 0.63527 error Iteration 860: is 0.63527 error Iteration 0.63527 870: is error Iteration 0.63527 880: is error Iteration 890: is 0.63527 error

Iteration 900: error is 0.63527

Iteration 910: error is 0.63527

Iteration 920: error is 0.63527

Iteration 930: error is 0.63527

Iteration 940: error is 0.63527

Iteration 950: error is 0.63527

Iteration 960: error is 0.63527

Iteration 970: error is 0.63527

Iteration 980: error is 0.63527

Iteration 990: error is 0.63527

Iteration 1000: error is 0.63527

J new = 0.8446

J new = 0.8322

J new = 0.8227

J new = 0.8215

J new = 0.8224

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.6841

Iteration 20: error is 37.0154

Iteration 30: is 36.2829 error is Iteration 40: 37,1514 error Iteration 50: is 37.4457 error Iteration 60: error is 37.2178 Iteration is 70: 37.7066 error Iteration 80: is 37,2182 error Iteration is 37.7304 90: error Iteration 100: is 2.1254 error Iteration 110: is 1,255 error Iteration 120: error is 0.808 Iteration 130: 0.7124 error is Iteration 140: error is 0.68225 0.67087 error is Iteration 150: Iteration 160: error is 0.66272 Iteration 170: is 0.65805 error Iteration 180: is 0.6544 error Iteration is 0.65163 190: error Iteration 200: is 0.64937 error Iteration 210: is 0.64784 error Iteration 220: 0.64606 is error Iteration 230: error is 0.64483

Iteration is 0.64376 240: error Iteration 250: is 0.64286 error Iteration 260: is 0.64143 error Iteration 270: is 0.63993 error Iteration is 0.63875 error 280: Iteration 290: is 0.63784 error Iteration 0.63716 300: is error Iteration is 0.63666 310: error Iteration is 0.63625 320: error Iteration 330: is 0.63593 error Iteration 340: 0.63567 is error Iteration 350: error is 0.63545 Iteration 360: 0.63527 is error Iteration 370: 0.63512 error is Iteration 380: is 0.63501 error Iteration 390: is 0.6349 error Iteration is 0.63481 400: error Iteration 410: is 0.63473 error Iteration 420: is 0.63467 error Iteration 430: 0.63461 is error Iteration error is 440: 0.63456

Iteration 450: is 0.63452 error 0.63449 Iteration 460: is error Iteration is 470: 0.63445 error Iteration 480: is 0.63442 error Iteration is 490: 0.6344 error Iteration 500: is 0.63438 error Iteration 0.63436 510: is error Iteration 0.63434 520: is error Iteration 0.63433 530: is error Iteration 540: is 0.63431 error Iteration 550: is 0.6343 error Iteration 560: error is 0.63429 0.63428 Iteration 570: is error Iteration 580: 0.63427 error is Iteration 590: is 0.63426 error Iteration 600: is 0.63426 error Iteration is 610: 0.63425 error Iteration 620: is 0.63425 error Iteration 630: is 0.63424 error Iteration 640: 0.63424 is error Iteration error is 650: 0.63423

Iteration 660: is 0.63423 error Iteration 670: is 0.63423 error Iteration is 680: 0.63422 error Iteration 690: 0.63422 error İS Iteration 0.63422 error 700: is Iteration 710: error 0.63422 is Iteration 0.63421 720: is error Iteration is 0.63421 730: error Iteration 0.63421 740: is error Iteration 750: 0.63421 error is Iteration 0.63421 error is 760: Iteration error is 0.63421 770: Iteration error is 0.63421 780: Iteration 0.6342 790: error is Iteration is 800: 0.6342 error Iteration 810: is 0.6342 error Iteration 820: is 0.6342 error Iteration 830: 0.6342 is error Iteration 840: is 0.6342 error Iteration 850: is 0.6342 error Iteration error is 860: 0.6342

```
Iteration 870: error is 0.6342
```

Iteration 880: error is 0.6342

Iteration 890: error is 0.6342

Iteration 900: error is 0.6342

Iteration 910: error is 0.6342

Iteration 920: error is 0.6342

Iteration 930: error is 0.6342

Iteration 940: error is 0.6342

Iteration 950: error is 0.6342

Iteration 960: error is 0.6342

Iteration 970: error is 0.6342

Iteration 980: error is 0.6342

Iteration 990: error is 0.6342

Iteration 1000: error is 0.6342

 $J_{new} = 0.8090$

J new = 0.7909

J new = 0.7623

J new = 0.7525

J new = 0.7448

J new = 0.7444

J new = 0.7453

Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.5673 Iteration 20: error is 37.3075 Iteration 30: error is 37.027 Iteration 40: error is 37.3852 Iteration 50: error is 36.7441 Iteration 60: error is 37.3944 Iteration 70: error is 37.558 Iteration 80: error is 36.7687 Iteration 90: error is 37.556 Iteration 100: error is 2.1722 Iteration 110: error is 1.2275 error is 0.76975 Iteration 120: Iteration 130: error is 0.69821 Iteration 140: error is 0.68231 Iteration 150: error is 0.67258 Iteration 160: error is 0.66568

Iteration 160: error is 0.66568 Iteration 170: error is 0.66089 Iteration 180: error is 0.65713

Iteration is 0.65443 190: error is Iteration 200: 0.65202 error Iteration is 210: 0.65016 error Iteration 0.64852 220: is error Iteration 0.64625 error 230: is Iteration 240: 0.64487 is error Iteration 0.64385 250: is error Iteration 260: is 0.64226 error Iteration 0.64069 270: is error Iteration is 0.63953 280: error Iteration 0.63863 290: is error Iteration 300: error is 0.63795 Iteration 0.63744 310: is error Iteration 320: is 0.63704 error Iteration 330: is 0.63671 error Iteration 340: is 0.63643 error is Iteration 350: 0.63622 error Iteration 360: 0.63604 is error Iteration 370: is 0.63588 error Iteration 0.63575 is 380: error Iteration 390: is 0.63564 error

Iteration 400: is 0.63554 error 0.63547 Iteration 410: is error Iteration is 420: 0.6354 error Iteration 0.63533 430: is error 0.63528 Iteration is error 440: Iteration 450: is 0.63524 error Iteration is 0.6352 460: error Iteration is 0.63516 470: error Iteration 0.63513 is 480: error Iteration error is 0.6351 490: Iteration 500: 0.63508 error is Iteration 510: error is 0.63506 Iteration 520: error is 0.63504 Iteration 530: error is 0.63502 Iteration 540: is 0.63501 error Iteration 550: is 0.635 error Iteration 560: is 0.63499 error Iteration 570: is 0.63497 error Iteration 0.63497 580: is error Iteration 0.63496 590: is error Iteration error is 600: 0.63495

Iteration 610: is 0.63494 error Iteration 620: is 0.63494 error Iteration 0.63493 630: is error Iteration 640: is 0.63493 error Iteration 650: is 0.63492 error Iteration 660: error 0.63492 is Iteration 0.63491 670: is error Iteration 680: is 0.63491 error Iteration 0.63491 690: is error Iteration 0.6349 700: error is Iteration 0.6349 710: is error Iteration error is 0.6349 720: Iteration error is 730: 0.6349 Iteration error is 740: 0.6349 Iteration is 750: 0.63489 error Iteration 760: is 0.63489 error Iteration is 770: 0.63489 error Iteration 780: is 0.63489 error Iteration 790: is 0.63489 error Iteration 0.63489 is 800: error Iteration error is 810: 0.63489

Iteration 820: error is 0.63489 Iteration 830: error is 0.63488 error is 0.63488 Iteration 840: Iteration 850: error is 0.63488 error is Iteration 860: 0.63488 Iteration 870: error is 0.63488 Iteration 880: error is 0.63488 Iteration 890: error is 0.63488 Iteration 900: error is 0.63488 Iteration 910: error is 0.63488 Iteration 920: error is 0.63488 Iteration 930: error is 0.63488 Iteration 940: error is 0.63488 Iteration 950: error is 0.63488 error is 0.63488 Iteration 960: Iteration 970: error is 0.63488 Iteration 980: error is 0.63488 Iteration 990: error is 0.63488 Iteration 1000: error is 0.63488 J new = 0.8513J new = 0.8274

- J new = 0.8155
- J new = 0.8119
- J new = 0.8102
- J new = 0.8057
- J new = 0.8010
- J new = 0.7854
- J new = 0.7435
- J new = 0.7419
- J new = 0.7428
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.4508
- Iteration 20: error is 37.3282
- Iteration 30: error is 37.0523
- Iteration 40: error is 37.165
- Iteration 50: error is 37.0856
- Iteration 60: error is 37.4802
- Iteration 70: error is 37.5396
- Iteration 80: error is 37.5722
- Iteration 90: error is 37.7045

Iteration is 100: 2.3521 error is Iteration 110: 1.3028 error is Iteration 0.95392 120: error Iteration error 130: is 0.83373 140: Iteration is 0.6911 error Iteration 0.66867 150: is error Iteration 160: 0.66258 is error Iteration 0.65815 170: is error Iteration 0.65502 180: is error Iteration is 0.65255 190: error Iteration 0.65048 200: is error Iteration error is 0.64889 210: Iteration 220: is 0.64743 error Iteration error is 0.64628 230: Iteration is 0.64527 240: error Iteration is 0.64443 250: error Iteration is 260: 0.64309 error Iteration 270: is 0.64168 error Iteration 280: is 0.6406 error Iteration 0.63979 is 290: error Iteration 300: is 0.6392 error

Iteration 310: is 0.63873 error Iteration 320: is 0.63836 error Iteration 330: is 0.63807 error Iteration 340: is 0.63783 error Iteration 350: 0.63764 error is Iteration 360: error is 0.63749 Iteration 0.63735 370: is error Iteration is 0.63724 380: error Iteration 0.63716 is 390: error Iteration 0.63708 400: error is Iteration 0.63701 410: is error Iteration error is 0.63696 420: Iteration 430: error is 0.63691 Iteration 440: 0.63686 error is Iteration is 450: 0.63683 error Iteration 460: is 0.6368 error Iteration is 470: 0.63677 error Iteration 480: 0.63674 is error Iteration 490: is 0.63672 error Iteration 500: is 0.6367 error Iteration 510: error is 0.63669

Iteration 520: is 0.63667 error is Iteration 530: 0.63666 error is Iteration 540: 0.63665 error Iteration 550: 0.63664 is error Iteration 560: 0.63663 is error Iteration 570: 0.63663 is error Iteration 580: 0.63662 is error Iteration 0.63661 is 590: error Iteration is 0.63661 600: error Iteration 610: 0.6366 error is Iteration 620: 0.6366 is error Iteration error is 0.6366 630: Iteration 0.63659 640: is error Iteration is 0.63659 650: error Iteration 0.63659 660: is error Iteration is 670: 0.63659 error Iteration is 0.63658 680: error Iteration 690: is 0.63658 error Iteration 700: is 0.63658 error Iteration 0.63658 is 710: error Iteration is 720: 0.63658 error

Iteration is 0.63658 730: error Iteration is 0.63657 740: error Iteration is 750: 0.63657 error Iteration 0.63657 760: is error Iteration is 0.63657 770: error Iteration 0.63657 780: is error Iteration 0.63657 790: is error Iteration 0.63657 is 800: error Iteration 0.63657 810: is error Iteration is 0.63657 820: error Iteration 0.63657 830: is error Iteration error is 0.63657 840: Iteration 0.63657 850: is error Iteration 860: is 0.63657 error Iteration is 0.63657 870: error Iteration is 880: 0.63657 error Iteration is 0.63657 890: error Iteration 900: is 0.63657 error Iteration 0.63657 910: is error Iteration 0.63657 is 920: error Iteration 930: is 0.63657 error

```
Iteration 940: error is 0.63657
Iteration 950: error is 0.63657
Iteration 960: error is 0.63657
Iteration 970: error is 0.63657
Iteration 980: error is 0.63657
Iteration 990: error is 0.63657
Iteration 1000: error is 0.63657
J new = 0.8441
J new = 0.8274
J new = 0.8165
J new = 0.8145
J new = 0.8122
J new = 0.8081
J new = 0.8065
J new = 0.8025
J new = 0.7909
J new = 0.7814
J new = 0.7431
J new = 0.7419
J new = 0.7428
Mean value of sigma: 0.16017
```

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.9307 Iteration 20: error is 37.4016 Iteration 30: error is 36.6906 Iteration 40: error is 37.1525 Iteration 50: error is 37.2617 Iteration 60: error is 37.4248 Iteration 70: error is 37.0431 Iteration 80: error is 37.3489 Iteration 90: error is 37.5493 Iteration 100: error is 2.2807 error is 1.2888 Iteration 110: Iteration 120: error is 0.83559 Iteration 130: error is 0.69718 Iteration 140: error is 0.68178 Iteration 150: error is 0.66965 Iteration 160: error is 0.663 Iteration 170: error is 0.65819 Iteration 180: error is 0.65461 Iteration 190: error is 0.65177

Iteration is 0.64952 200: error Iteration 210: is 0.64771 error Iteration is 220: 0.64623 error Iteration 230: 0.64499 is error Iteration is 0.64391 error 240: Iteration 250: is 0.64301 error Iteration 0.64157 260: is error Iteration is 0.64003 270: error Iteration is 0.63893 280: error Iteration is 0.6381 290: error Iteration 0.63745 300: is error Iteration 310: error is 0.63694 Iteration 320: is 0.63656 error Iteration 330: 0.63625 error is Iteration 340: is 0.636 error Iteration 350: is 0.63579 error is 0.63563 Iteration 360: error Iteration 370: is 0.63548 error Iteration 380: is 0.63536 error Iteration 0.63526 is 390: error Iteration 400: is 0.63517 error

Iteration 410: is 0.6351 error 0.63503 Iteration 420: is error Iteration 0.63498 is 430: error Iteration 0.63493 is 440: error Iteration is 0.63489 450: error Iteration 460: 0.63486 is error Iteration 0.63482 470: is error Iteration is 480: error 0.6348 Iteration 0.63477 is 490: error Iteration is 0.63475 500: error Iteration 510: 0.63473 is error Iteration 520: error is 0.63472 Iteration 530: is 0.6347 error Iteration 540: error is 0.63469 Iteration 550: is 0.63468 error Iteration 560: is 0.63467 error Iteration 570: is 0.63466 error Iteration 580: is 0.63465 error Iteration 590: is 0.63465 error Iteration 600: 0.63464 is error Iteration error is 0.63463 610:

Iteration 620: is 0.63463 error 0.63462 Iteration 630: is error Iteration is 640: 0.63462 error Iteration 650: 0.63462 error is 0.63461 Iteration 660: error is Iteration 670: 0.63461 is error Iteration 0.63461 680: is error Iteration is 0.63461 690: error Iteration error is 0.6346 700: Iteration 0.6346 710: error is Iteration 0.6346 error is 720: Iteration error is 0.6346 730: Iteration error is 740: 0.6346 Iteration 750: error is 0.6346 Iteration 760: is 0.63459 error Iteration 770: is 0.63459 error Iteration is 0.63459 780: error Iteration 790: is 0.63459 error Iteration 0.63459 800: is error Iteration 0.63459 810: is error Iteration error is 820: 0.63459

Iteration 830: error is 0.63459 Iteration 840: error is 0.63459 error is 0.63459 Iteration 850: Iteration 860: error is 0.63459 Iteration 870: error is 0.63459 Iteration 880: error is 0.63459 Iteration 890: error is 0.63459 Iteration 900: error is 0.63459 Iteration 910: error is 0.63459 Iteration 920: error is 0.63459 Iteration 930: error is 0.63459 Iteration 940: error is 0.63459 error is 0.63458 Iteration 950: Iteration 960: error is 0.63458 Iteration 970: error is 0.63458 Iteration 980: error is 0.63458 Iteration 990: error is 0.63458 Iteration 1000: error is 0.63458 J new = 0.8363J new = 0.8202J new = 0.8167

- J new = 0.8159
- J new = 0.8136
- $J_{new} = 0.8117$
- J new = 0.8079
- J new = 0.8061
- J new = 0.8022
- J new = 0.7905
- J new = 0.7811
- J new = 0.7427
- J new = 0.7416
- J new = 0.7424
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.032
- Iteration 20: error is 37.2251
- Iteration 30: error is 36.8731
- Iteration 40: error is 37.0864
- Iteration 50: error is 37.2202
- Iteration 60: error is 37.5003
- Iteration 70: error is 37.8653

Iteration 80: error is 37.7699 is 37.9647 Iteration 90: error Iteration 2,2186 100: is error Iteration 110: is 1.5456 error Iteration 1.1612 error 120: is Iteration 130: error is 0.97206 Iteration 0.89359 140: is error Iteration 150: is 0.73161 error Iteration 160: 0.72242 is error Iteration 170: error is 0.67368 Iteration 180: error is 0.6529 Iteration error is 0.65208 190: Iteration error is 200: 0.64636 Iteration 210: error is 0.64494 Iteration 220: is 0.64358 error Iteration 230: is 0.64233 error Iteration is 0.64143 240: error Iteration 250: is 0.64069 error Iteration 260: is 0.6395 error Iteration 270: 0.63824 is error Iteration 280: error is 0.63731

Iteration is 0.63663 290: error is Iteration 300: 0.63611 error Iteration 310: is 0.6357 error Iteration 320: 0.63537 is error 0.63511 Iteration 330: is error Iteration 340: is 0.63491 error Iteration 350: 0.63473 error is Iteration 0.63459 360: is error Iteration 0.63447 370: is error Iteration 380: is 0.63438 error Iteration 390: 0.63429 error is 0.63422 Iteration error is 400: Iteration error is 0.63416 410: Iteration 420: error is 0.63392 Iteration 430: is 0.63402 error Iteration 440: is 0.63366 error Iteration is 450: 0.63361 error Iteration 460: is 0.63358 error Iteration 0.63355 470: is error Iteration 480: 0.63353 is error Iteration error is 490: 0.63351

Iteration 500: is 0.63349 error 0.63347 Iteration 510: is error Iteration 520: is 0.63346 error Iteration 530: error 0.63345 is Iteration 540: is 0.63344 error Iteration 550: is 0.63343 error Iteration 560: 0.63342 error is Iteration 0.63341 570: is error Iteration 0.63341 580: is error Iteration 590: is 0.6334 error Iteration 600: 0.63339 is error Iteration error is 0.63339 610: Iteration 0.63339 620: is error Iteration is 630: 0.63338 error Iteration is 0.63338 640: error Iteration 0.63338 650: is error Iteration 0.63337 is 660: error Iteration 670: error is 0.63337 Iteration 0.63337 680: is error Iteration 690: is 0.63337 error Iteration 700: is 0.63337 error

Iteration 710: is 0.63337 error Iteration 0.63336 720: is error Iteration is 730: 0.63336 error Iteration error 740: is 0.63336 Iteration is 0.63336 750: error Iteration 760: 0.63336 is error Iteration 0.63336 770: is error Iteration 0.63336 is 780: error Iteration 0.63336 is 790: error Iteration 0.63336 800: error is Iteration 0.63336 810: is error Iteration error is 0.63336 820: Iteration 0.63336 830: is error Iteration is 840: 0.63336 error Iteration is 850: 0.63336 error Iteration 860: is 0.63336 error Iteration 0.63336 is 870: error Iteration 880: is 0.63335 error Iteration 890: is 0.63335 error Iteration 0.63335 is 900: error Iteration 910: is 0.63335 error

Iteration 920: error is 0.63335

Iteration 930: error is 0.63335

Iteration 940: error is 0.63335

Iteration 950: error is 0.63335

Iteration 960: error is 0.63335

Iteration 970: error is 0.63335

Iteration 980: error is 0.63335

Iteration 990: error is 0.63335

Iteration 1000: error is 0.63335

J new = 0.7890

J new = 0.7614

J new = 0.7524

J new = 0.7448

J new = 0.7444

J new = 0.7453

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.8452

Iteration 20: error is 36.8708

Iteration 30: error is 37.2209

Iteration 40: is 37.3125 error is Iteration 50: 37,2101 error Iteration is 37.5151 60: error Iteration 70: is 36.8521 error Iteration is 80: 37,6564 error Iteration 90: error is 37.6055 Iteration is 100: 2,2291 error Iteration is 110: 1.3095 error Iteration is 1.0519 120: error Iteration 130: error is 0.911 Iteration 140: 0.80854 error is Iteration 150: error is 0.68966 Iteration 160: error is 0.68547 Iteration error is 0.66962 170: Iteration 180: is 0.66633 error Iteration 190: is 0.6636 error Iteration 200: is 0.66161 error Iteration 210: is 0.65983 error Iteration 0.65842 220: İS error Iteration 230: 0.65748 is error Iteration 240: error is 0.65622

Iteration is 0.65535 250: error 0.65397 Iteration 260: is error Iteration is 270: 0.65243 error Iteration 280: is 0.65132 error 0.65053 Iteration is error 290: Iteration 0.64992 300: is error Iteration 0.64943 310: is error Iteration 0.64904 is 320: error Iteration 0.64873 330: is error Iteration 340: is 0.64847 error Iteration 350: 0.64826 is error Iteration 360: error is 0.64809 Iteration 370: 0.64794 is error Iteration 380: 0.64781 is error Iteration 390: is 0.64771 error Iteration 400: is 0.64762 error Iteration is 0.64754 410: error Iteration 420: is 0.64747 error Iteration 0.64742 430: is error Iteration 0.64737 440: is error Iteration 450: is 0.64732 error

Iteration is 0.64729 460: error 0.64725 Iteration 470: is error Iteration is 480: 0.64722 error Iteration 490: is 0.6472 error Iteration 0.64718 error 500: is Iteration 510: 0.64716 is error Iteration 0.64714 520: is error Iteration is 0.64712 530: error Iteration 540: is 0.64711 error Iteration 550: is 0.64709 error Iteration 560: 0.64708 is error Iteration error is 570: 0.64707 Iteration 580: is 0.64706 error Iteration 590: is 0.64705 error Iteration is 600: 0.64705 error Iteration 610: is 0.64704 error Iteration is 0.64703 620: error Iteration 630: is 0.64703 error Iteration 640: is 0.64702 error Iteration 650: 0.64702 is error Iteration 660: is 0.64701 error

Iteration is 0.64701 670: error is Iteration 680: 0.647 error Iteration is 0.647 690: error Iteration 700: is 0.647 error Iteration 0.64699 error 710: is Iteration 720: error is 0.64699 Iteration 730: is 0.64699 error Iteration is 0.64699 740: error Iteration 0.64698 750: is error Iteration is 0.64698 760: error Iteration 770: 0.64698 error is Iteration error is 0.64698 780: Iteration 0.64698 790: is error Iteration 0.64698 800: error is Iteration is 0.64697 810: error Iteration 820: is 0.64697 error is Iteration 830: 0.64697 error Iteration 840: is 0.64697 error Iteration 850: is 0.64697 error Iteration 860: 0.64697 is error Iteration error is 870: 0.64697

```
Iteration 880: error is 0.64697
```

J new =
$$0.8711$$

J new =
$$0.8422$$

J new =
$$0.8223$$

J new =
$$0.8115$$

J new =
$$0.8090$$

J new =
$$0.8064$$

J new =
$$0.7997$$

$$J_{new} = 0.7860$$

 $J_{new} = 0.7422$

J new = 0.7425

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.6785

Iteration 20: error is 36.5532

Iteration 30: error is 36.3915

Iteration 40: error is 36.4791

Iteration 50: error is 36.8499

Iteration 60: error is 36.8137

Iteration 70: error is 36.9157

Iteration 80: error is 36.9918

Iteration 90: error is 37.8186

Iteration 100: error is 2.2581

Iteration 110: error is 1.2752

Iteration 120: error is 0.91516

Iteration 130: error is 0.77904

Iteration 140: error is 0.73195

Iteration 150: error is 0.67895

Iteration 160: error is 0.67064

Iteration 170: is 0.66638 error is 0.66318 Iteration 180: error is Iteration 190: 0.6607 error Iteration 0.65867 200: is error Iteration 0.65701 error 210: is Iteration 0.65567 220: is error Iteration 0.65451 230: is error Iteration 0.65353 is 240: error Iteration is 0.6527 250: error Iteration is 0.65136 260: error Iteration 0.64998 270: is error Iteration error is 0.64883 280: Iteration 290: is 0.64801 error Iteration 300: error is 0.64741 Iteration 310: is 0.64696 error Iteration 320: is 0.6466 error is Iteration 330: 0.64631 error Iteration 340: is 0.64607 error Iteration 350: is 0.64588 error Iteration 360: 0.64572 is error Iteration error is 370: 0.64558

Iteration is 0.64547 380: error 0.64538 Iteration 390: is error Iteration is 400: 0.6453 error Iteration 410: is 0.64524 error Iteration is 0.64518 error 420: Iteration 0.64513 430: error is Iteration 0.64509 440: error is Iteration 450: 0.64505 is error Iteration 0.64502 460: is error Iteration is 0.64499 470: error Iteration error is 0.64497 480: Iteration error is 0.64495 490: Iteration error is 0.64493 500: Iteration 510: error is 0.64492 is Iteration 520: 0.6449 error Iteration 530: is 0.64489 error Iteration 540: is 0.64488 error Iteration 550: is 0.64487 error Iteration 560: is 0.64486 error Iteration 570: 0.64485 is error Iteration 580: error is 0.64485

Iteration is 0.64484 590: error Iteration 600: is 0.64484 error Iteration 0.64483 is 610: error Iteration 620: 0.64483 is error Iteration 0.64482 630: error is Iteration 640: 0.64482 is error Iteration 650: 0.64482 is error Iteration 660: is 0.64482 error Iteration 670: 0.64481 is error Iteration 680: is 0.64481 error Iteration 0.64481 error is 690: Iteration error is 700: 0.64481 Iteration 710: is 0.64481 error Iteration is 720: 0.6448 error Iteration is 0.6448 730: error Iteration 740: is 0.6448 error Iteration is 750: 0.6448 error Iteration 760: is 0.6448 error Iteration 770: error is 0.6448 Iteration 0.6448 is 780: error Iteration 790: error is 0.64479

Iteration is 0.64478 800: error Iteration 810: is 0.64478 error Iteration 0.64477 is 820: error Iteration 830: 0.64477 is error Iteration error 840: is 0.64477 Iteration 850: 0.64477 is error Iteration 860: is 0.64477 error Iteration is 0.64477 870: error Iteration 0.64477 880: is error Iteration 890: is 0.64477 error Iteration 0.64477 900: is error Iteration error is 0.64477 910: Iteration 920: is 0.64477 error Iteration 930: error is 0.64477 Iteration is 0.64477 940: error Iteration 950: is 0.64477 error is Iteration 960: 0.64477 error Iteration 970: is 0.64477 error Iteration 980: is 0.64477 error Iteration is 0.64477 990: error Iteration 1000: error is 0.64477

- J new = 0.8340
- J new = 0.8194
- $J_{new} = 0.8158$
- J new = 0.8154
- J new = 0.8111
- J new = 0.8092
- J new = 0.8054
- J new = 0.8036
- J new = 0.7898
- J new = 0.7825
- J new = 0.7420
- J new = 0.7429
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.1811
- Iteration 20: error is 37.4352
- Iteration 30: error is 37.1782
- Iteration 40: error is 37.3707
- Iteration 50: error is 37.3619
- Iteration 60: error is 37.805

Iteration 70: is 38.2211 error is 37.9647 Iteration 80: error Iteration 90: is 38.6443 error Iteration 100: 2.4735 error İS Iteration is 110: error 1.4213 Iteration 120: 0.86165 is error Iteration 130: 0.79373 is error Iteration 140: is 0.69251 error Iteration 0.68115 150: is error Iteration 160: 0.67312 error is Iteration 170: 0.66813 error is Iteration error is 0.66469 180: error is Iteration 190: 0.66204 Iteration 200: error is 0.65987 Iteration 210: is 0.65655 error Iteration is 220: 0.64802 error Iteration is 0.64389 230: error Iteration 240: is 0.64275 error Iteration 250: is 0.6418 error Iteration 260: 0.64026 is error Iteration 270: error is 0.63865

Iteration is 0.63742 280: error is Iteration 290: 0.63658 error Iteration is 300: 0.63595 error Iteration 310: 0.63545 is error Iteration 0.63504 error 320: is Iteration 330: 0.63472 is error Iteration 0.63445 340: is error Iteration 0.63423 350: is error Iteration 360: 0.63406 is error Iteration 0.63391 370: error is Iteration 380: 0.63378 is error Iteration error is 0.63367 390: Iteration 0.63358 400: is error Iteration is 410: 0.63351 error Iteration 420: is 0.63344 error Iteration 430: is 0.63338 error Iteration 0.63333 is 440: error Iteration 450: is 0.63329 error Iteration 460: is 0.63326 error Iteration 470: 0.63322 is error Iteration 480: is 0.63319 error

Iteration is 0.63317 490: error 0.63315 Iteration 500: is error Iteration is 510: 0.63313 error Iteration 520: is 0.63311 error 530: Iteration 0.63309 error is Iteration 540: is 0.63308 error Iteration 550: 0.63307 is error Iteration 0.63306 560: is error Iteration 0.63305 570: is error Iteration 580: 0.63304 error is Iteration 0.63303 590: is error Iteration error is 0.63303 600: Iteration 0.63302 610: is error Iteration is 620: 0.63302 error Iteration is 630: 0.63301 error Iteration is 640: 0.63301 error Iteration 650: is 0.633 error Iteration 660: is 0.633 error Iteration 670: is 0.633 error Iteration 680: 0.63299 is error Iteration 690: is 0.63299 error

Iteration 700: is 0.63299 error Iteration 0.63299 710: is error Iteration is 720: 0.63298 error Iteration 730: is 0.63298 error Iteration 0.63298 error 740: is Iteration 750: error is 0.63298 Iteration 760: 0.63298 is error Iteration 0.63298 is 770: error Iteration 0.63298 780: is error Iteration is 0.63298 790: error Iteration 0.63297 error is 800: Iteration error is 0.63297 810: Iteration 820: 0.63297 is error Iteration 0.63297 830: error is Iteration 840: is 0.63297 error Iteration is 850: 0.63297 error is Iteration 860: 0.63297 error Iteration 870: is 0.63297 error Iteration 880: is 0.63297 error Iteration 0.63297 890: is error Iteration error is 900: 0.63297

```
Iteration 910: error is 0.63297
```

J new =
$$0.8348$$

J new =
$$0.8193$$

$$J new = 0.8172$$

J new =
$$0.8161$$

J new =
$$0.8139$$

J new =
$$0.8119$$

J new =
$$0.8083$$

J new =
$$0.8064$$

J new =
$$0.8026$$

$$J \text{ new} = 0.7908$$

J new =
$$0.7815$$

 $J_{new} = 0.7429$

J new = 0.7420

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9152

Iteration 20: error is 37.0837

Iteration 30: error is 36.7335

Iteration 40: error is 36.7648

Iteration 50: error is 36.656

Iteration 60: error is 37.3426

Iteration 70: error is 37.3334

Iteration 80: error is 37.5472

Iteration 90: error is 37.9992

Iteration 100: error is 2.3846

Iteration 110: error is 1.3028

Iteration 120: error is 0.82037

Iteration 130: error is 0.72765

Iteration 140: error is 0.67435

Iteration 150: error is 0.66227

Iteration is 0.6555 160: error is 0.65015 Iteration 170: error Iteration 180: is 0.64735 error Iteration error 0.64393 190: is Iteration is 0.64172 200: error Iteration 210: is 0.63978 error Iteration 0.63822 220: is error Iteration is 0.63692 230: error Iteration 0.63591 240: is error Iteration 250: is 0.63497 error Iteration 0.63355 260: is error Iteration error is 0.63206 270: Iteration 0.63092 280: is error Iteration 290: error is 0.63008 Iteration 300: 0.62944 is error Iteration 310: is 0.62894 error Iteration 320: is 0.62855 error Iteration 330: is 0.62824 error Iteration 0.62799 340: is error Iteration 350: 0.62777 is error Iteration error is 360: 0.62759

Iteration 370: is 0.62744 error Iteration 380: is 0.62731 error Iteration is 390: 0.62721 error Iteration 400: is 0.62711 error Iteration 0.62703 error 410: is Iteration 420: error is 0.62697 Iteration 0.62691 430: is error Iteration is 0.62686 440: error Iteration 0.62682 450: is error Iteration 0.62678 460: error is Iteration 470: 0.62674 is error Iteration error is 480: 0.62672 0.62669 Iteration 490: is error Iteration 500: 0.62667 error is Iteration 510: is 0.62665 error Iteration 520: is 0.62663 error is Iteration 530: 0.62662 error Iteration 540: 0.62661 is error Iteration 550: is 0.62659 error Iteration 560: 0.62658 is error Iteration 570: is 0.62657 error

Iteration is 0.62657 580: error Iteration 590: is 0.62656 error Iteration 600: is 0.62655 error Iteration 0.62655 610: is error 620: Iteration 0.62654 error is Iteration 630: is 0.62654 error Iteration 0.62653 640: is error Iteration 650: is 0.62653 error Iteration 0.62653 660: is error Iteration is 0.62652 670: error Iteration 0.62652 680: is error Iteration error is 0.62652 690: Iteration 0.62652 700: is error Iteration 0.62651 710: error is Iteration is 0.62651 720: error Iteration is 730: 0.62651 error Iteration is 740: 0.62651 error Iteration 750: is 0.62651 error Iteration 760: is 0.62651 error Iteration 0.62651 is 770: error Iteration error is 780: 0.6265

Iteration 790: is 0.6265 error Iteration 800: is 0.6265 error is Iteration 810: 0.6265 error Iteration 820: is 0.6265 error 830: Iteration is 0.6265 error Iteration error is 840: 0.6265 Iteration 850: 0.6265 is error Iteration 860: is 0.6265 error Iteration 870: is 0.6265 error Iteration error is 0.6265 880: Iteration error is 0.6265 890: Iteration error is 900: 0.6265 Iteration error is 910: 0.6265 Iteration 920: error is 0.6265 Iteration 930: is 0.6265 error Iteration 940: is 0.6265 error Iteration 950: is 0.6265 error Iteration 0.6265 960: is error Iteration 970: is 0.6265 error Iteration 0.6265 is 980: error Iteration 990: error is 0.6265

Iteration 1000: error is 0.6265 J new = 0.8061J new = 0.7916J new = 0.7639J new = 0.7484J new = 0.7397J new = 0.7390 $J_{new} = 0.7401$ Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.9916 Iteration 20: error is 37.0418 Iteration 30: error is 36.5889 Iteration 40: error is 37.1503 Iteration 50: error is 37.1379 Iteration 60: error is 37.6936 Iteration 70: error is 37.6005 Iteration 80: error is 37.2716 Iteration 90: error is 37.7511 Iteration 100: error is 2.3522

Iteration is 110: 1,2407 error is 0.89383 Iteration 120: error Iteration 130: is 0.71478 error Iteration 140: is 0.69182 error 0.67576 Iteration 150: error is Iteration 160: 0.67053 is error Iteration 170: 0.6657 is error Iteration 0.66237 180: is error Iteration is 0.65998 190: error Iteration is 0.65781 200: error Iteration 0.65605 210: is error Iteration error is 0.65464 220: Iteration 230: is 0.65348 error Iteration is 0.65251 240: error Iteration 250: is 0.65167 error Iteration 260: is 0.65036 error Iteration is 0.6489 270: error Iteration 280: is 0.64786 error Iteration 290: is 0.64706 error Iteration 0.64646 error is 300: Iteration 310: is 0.64601 error

Iteration 320: is 0.64565 error 0.64535 Iteration 330: is error Iteration 340: is 0.64511 error Iteration 350: is 0.64492 error Iteration 360: is 0.64476 error Iteration 370: error is 0.64463 Iteration 0.64452 380: is error Iteration is 0.64443 390: error Iteration 0.64435 is 400: error Iteration 410: error is 0.64428 Iteration 420: 0.64423 error is Iteration error is 0.64418 430: Iteration 440: error is 0.64414 Iteration 450: error is 0.6441 Iteration 460: is 0.64407 error Iteration 470: is 0.64404 error Iteration is 0.64402 480: error Iteration 490: is 0.644 error Iteration 0.64398 500: is error Iteration 510: 0.64396 is error Iteration error is 520: 0.64395

Iteration is 0.64394 530: error 0.64393 Iteration 540: is error Iteration 550: 0.64392 is error Iteration 560: is 0.64391 error Iteration 570: is 0.6439 error Iteration 0.64389 580: is error Iteration 0.64389 590: is error Iteration 0.64388 600: is error Iteration 610: 0.64388 is error Iteration 620: is 0.64387 error Iteration 630: error is 0.64387 Iteration error is 0.64387 640: Iteration 0.64386 650: is error Iteration is 0.64386 660: error Iteration is 0.64386 670: error Iteration is 0.64386 680: error Iteration is 0.64386 690: error Iteration 700: error is 0.64385 Iteration 0.64385 710: is error Iteration 720: 0.64385 is error Iteration 730: is 0.64385 error

Iteration is 0.64385 740: error Iteration 0.64385 750: is error Iteration 0.64385 is 760: error Iteration 0.64385 770: is error Iteration is 0.64385 error 780: Iteration 790: 0.64384 is error Iteration 0.64384 800: error is Iteration 0.64384 is 810: error Iteration 0.64384 is 820: error Iteration is 0.64384 830: error Iteration 0.64384 840: is error Iteration error is 0.64384 850: Iteration 860: is 0.64384 error Iteration is 0.64384 870: error Iteration is 880: 0.64384 error Iteration 0.64384 890: is error Iteration is 0.64384 900: error Iteration 910: is 0.64384 error Iteration 920: is 0.64384 error Iteration 0.64384 is 930: error Iteration 940: is 0.64384 error

```
Iteration 950: error is 0.64384
Iteration 960: error is 0.64384
Iteration 970: error is 0.64384
Iteration 980: error is 0.64384
Iteration 990: error is 0.64384
Iteration 1000: error is 0.64384
J new = 0.8346
J new = 0.8194
J new = 0.8170
J new = 0.8163
J \text{ new} = 0.8138
J \text{ new} = 0.8120
J new = 0.8081
J new = 0.8065
J new = 0.8025
J new = 0.7909
J new = 0.7814
J new = 0.7431
J new = 0.7419
```

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.5491 Iteration 20: error is 36.7223 Iteration 30: error is 36.377 Iteration 40: error is 37.2045 Iteration 50: error is 36.8365 Iteration 60: error is 36.9473 Iteration 70: error is 37.2359 Iteration 80: error is 37.9839 Iteration 90: error is 37.7633 Iteration 100: error is 2.291 Iteration 110: error is 1.2002 Iteration 120: error is 0.77929 Iteration 130: error is 0.74257 Iteration 140: error is 0.69904 Iteration 150: error is 0.68949 Iteration 160: error is 0.68373 Iteration 170: error is 0.67904 Iteration 180: error is 0.67569 Iteration 190: error is 0.67304

Iteration is 0.671 200: error is 0.6651 Iteration 210: error Iteration is 0.64505 220: error Iteration 230: is 0.64111 error Iteration 0.63982 error 240: is Iteration 250: is 0.63882 error Iteration 0.63717 260: is error Iteration is 0.63542 270: error Iteration 0.63418 is 280: error Iteration is 0.63332 290: error Iteration 0.63263 300: is error Iteration 310: error is 0.63208 Iteration 320: is 0.63167 error Iteration 330: error is 0.63133 Iteration 340: is 0.63105 error Iteration 350: is 0.63082 error is Iteration 360: 0.63063 error Iteration 370: is 0.63048 error Iteration 380: is 0.63034 error Iteration 0.63023 is 390: error Iteration error is 400: 0.63013

Iteration 410: is 0.63005 error Iteration 420: is 0.62998 error Iteration 0.62992 is 430: error Iteration is 440: 0.62987 error Iteration 0.62982 450: is error Iteration 0.62978 460: is error Iteration is 0.62975 470: error Iteration is 0.62972 480: error Iteration 0.62969 is 490: error Iteration is 0.62967 500: error Iteration 510: error is 0.62965 Iteration 520: error is 0.62963 Iteration 530: error is 0.62962 Iteration 540: 0.6296 error is Iteration 550: is 0.62959 error Iteration 560: is 0.62958 error Iteration 570: 0.62957 is error Iteration 580: is 0.62956 error Iteration 0.62955 590: is error Iteration 600: 0.62955 is error Iteration error is 610: 0.62954

Iteration 620: is 0.62954 error Iteration 630: is 0.62953 error Iteration 640: 0.62953 is error Iteration error is 650: 0.62952 Iteration 660: is 0.62952 error Iteration is 0.62952 670: error Iteration is 0.62951 680: error Iteration 0.62951 is 690: error Iteration 0.62951 700: is error Iteration error is 0.62951 710: Iteration 720: error is 0.6295 Iteration error is 730: 0.6295 Iteration 740: error is 0.6295 Iteration 0.6295 error is 750: Iteration is 760: 0.6295 error Iteration is 770: 0.6295 error Iteration is 780: 0.6295 error Iteration 790: is 0.6295 error Iteration 800: İS 0.6295 error Iteration 0.6295 810: is error Iteration error is 820: 0.62949

```
Iteration 830:
               error is 0.62949
Iteration 840:
               error is 0.62949
               error is 0.62949
Iteration 850:
Iteration 860:
               error is 0.62949
Iteration 870:
               error is 0.62949
Iteration 880:
               error is 0.62949
Iteration 890:
               error is 0.62949
Iteration 900:
               error is 0.62949
Iteration 910:
               error is 0.62949
Iteration 920:
               error is 0.62949
Iteration 930:
               error is 0.62949
Iteration 940:
               error is 0.62949
Iteration 950:
               error is 0.62949
Iteration 960:
               error is 0.62949
Iteration 970:
               error is 0.62949
Iteration 980:
               error is 0.62949
               error is 0.62949
Iteration 990:
Iteration 1000: error is 0.62949
J new = 0.8330
J new = 0.8192
J new = 0.8160
```

J new = 0.8132

 $J_{new} = 0.8094$

J new = 0.8070

J new = 0.8002

J new = 0.7862

J new = 0.7422

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.468

Iteration 20: error is 36.5733

Iteration 30: error is 36.6275

Iteration 40: error is 36.6309

Iteration 50: error is 37.139

Iteration 60: error is 37.7197

Iteration 70: error is 37.4008

Iteration 80: error is 37.693

Iteration 90: error is 37.6868

Iteration 100: error is 2.3267

Iteration 110: error is 1.2967

Iteration is 0.88828 120: error is Iteration 130: 0.7686 error Iteration 140: is 0.73522 error Iteration 0.68668 150: is error Iteration 160: error 0.67896 is Iteration 170: 0.66417 is error Iteration 180: 0.65072 is error Iteration 0.64759 is 190: error Iteration 0.64557 is 200: error Iteration 0.64318 210: is error Iteration 0.64143 220: is error Iteration error is 0.64014 230: Iteration 240: is 0.63908 error Iteration 250: is 0.63821 error Iteration 260: is 0.63656 error Iteration is 0.63479 270: error Iteration is 0.63351 280: error Iteration 290: is 0.63265 error Iteration 300: is 0.63198 error Iteration 0.63129 is 310: error Iteration 320: is 0.63089 error

Iteration 330: is 0.63058 error Iteration 340: is 0.63034 error Iteration 350: is 0.63013 error Iteration 360: is 0.62996 error Iteration 370: 0.62982 error is Iteration 380: error is 0.62971 Iteration 0.62961 390: is error Iteration 0.62952 is 400: error Iteration 0.62944 410: is error Iteration 420: is 0.62937 error Iteration 430: 0.62931 error is Iteration error is 440: 0.62926 Iteration 450: is 0.62922 error Iteration error is 0.62918 460: Iteration is 0.62915 470: error Iteration 480: is 0.62912 error Iteration is 0.62909 490: error Iteration 500: is 0.62907 error Iteration 510: is 0.62905 error Iteration 520: 0.62903 is error Iteration error is 530: 0.62902

Iteration 540: is 0.62901 error Iteration 550: is 0.62899 error Iteration 560: is 0.62898 error Iteration 570: is 0.62897 error Iteration 0.62896 error 580: is Iteration 590: error is 0.62896 Iteration 600: 0.62895 is error Iteration 610: is 0.62895 error Iteration 620: is 0.62894 error Iteration 630: is 0.62894 error Iteration 0.62893 640: is error Iteration error is 0.62893 650: 0.62892 Iteration 660: is error Iteration is 0.62892 670: error Iteration is 680: 0.62892 error Iteration 690: is 0.62892 error Iteration is 700: 0.62891 error Iteration 710: 0.62891 is error Iteration 720: is 0.62891 error Iteration 730: 0.62891 is error Iteration 740: is 0.62891 error

Iteration is 0.62891 750: error Iteration 760: is 0.62891 error Iteration 770: is 0.6289 error Iteration 780: is 0.6289 error Iteration error 790: is 0.6289 Iteration error is 0.6289 800: Iteration 0.6289 810: is error Iteration is 0.6289 820: error Iteration is 0.6289 830: error Iteration 0.6289 840: error is Iteration 850: 0.6289 is error Iteration error is 860: 0.6289 Iteration 870: is 0.6289 error Iteration 880: error is 0.6289 Iteration is 890: 0.6289 error Iteration 900: is 0.6289 error Iteration is 910: 0.6289 error Iteration 920: is 0.6289 error Iteration 930: is 0.6289 error Iteration 940: is 0.6289 error Iteration error is 950: 0.6289

Iteration 960: error is 0.6289

Iteration 970: error is 0.6289

Iteration 980: error is 0.6289

Iteration 990: error is 0.6289

Iteration 1000: error is 0.6289

J new = 0.8432

J new = 0.8271

J new = 0.8168

J new = 0.8150

J new = 0.8147

J new = 0.8110

J new = 0.8092

J new = 0.8054

J new = 0.8036

J new = 0.7898

J new = 0.7825

J new = 0.7420

 $J_{new} = 0.7429$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: is 39.4716 error is 37.5475 Iteration 20: error Iteration 30: is 37,2252 error Iteration 40: is 37.0895 error Iteration 37,2813 50: is error Iteration 60: is 37.7198 error Iteration 70: is 37,4096 error Iteration is 80: 37,2074 error Iteration is 37.7908 90: error Iteration error is 2.2654 100: Iteration 110: is 1,1701 error Iteration 120: error is 0.82575 Iteration 130: 0.76367 error is Iteration 140: error is 0.72734 Iteration 150: is 0.67227 error Iteration 160: is 0.66384 error Iteration is 170: 0.65861 error Iteration 180: is 0.65543 error Iteration 0.65286 190: is error Iteration 0.65102 is 200: error Iteration 210: error is 0.64924

Iteration is 0.64785 220: error is 0.64672 Iteration 230: error Iteration is 0.64571 240: error Iteration 0.64487 250: error is 260: Iteration error is 0.6436 Iteration 270: 0.64224 is error Iteration 0.64118 280: is error Iteration is 0.64043 290: error Iteration 0.63986 is 300: error Iteration 0.63942 310: error is Iteration 0.63908 320: is error Iteration 330: error is 0.6388 Iteration 340: 0.63857 is error Iteration 350: error is 0.63839 Iteration 360: is 0.63823 error Iteration 370: is 0.63811 error is Iteration 380: 0.638 error Iteration 390: is 0.63791 error Iteration 400: is 0.63784 error Iteration 410: 0.63778 is error Iteration error is 420: 0.63772

Iteration 430: is 0.63767 error Iteration 440: is 0.63763 error Iteration is 450: 0.6376 error Iteration 0.63757 460: is error Iteration is 0.63754 470: error Iteration 480: is 0.63752 error Iteration is 0.6375 490: error Iteration 0.63748 is 500: error Iteration 0.63747 510: is error Iteration 520: is 0.63746 error Iteration 530: 0.63744 error is Iteration 540: error is 0.63743 550: error is 0.63743 Iteration Iteration 560: error is 0.63742 Iteration 570: is 0.63741 error Iteration 580: is 0.63741 error Iteration 590: is 0.6374 error Iteration 600: is 0.6374 error Iteration 610: is 0.63739 error Iteration 620: 0.63739 is error Iteration error is 630: 0.63738

Iteration 640: is 0.63738 error Iteration 650: is 0.63738 error Iteration 660: is 0.63738 error Iteration 670: 0.63737 error is Iteration 0.63737 680: error is Iteration 690: error 0.63737 is Iteration 0.63737 700: is error Iteration 0.63737 is 710: error Iteration 0.63737 720: is error Iteration 0.63737 730: error is Iteration 740: 0.63736 is error Iteration error is 0.63736 750: Iteration 0.63736 760: is error Iteration is 0.63736 770: error Iteration is 780: 0.63736 error Iteration is 790: 0.63736 error Iteration is 0.63736 800: error Iteration 810: 0.63736 is error Iteration 820: is 0.63736 error Iteration 830: 0.63736 is error Iteration 840: is 0.63736 error

```
Iteration 850: error is 0.63736
Iteration 860:
               error is 0.63736
               error is 0.63736
Iteration 870:
Iteration 880:
               error is 0.63736
Iteration 890:
               error is 0.63736
Iteration 900:
               error is 0.63736
Iteration 910:
               error is 0.63736
Iteration 920:
               error is 0.63736
Iteration 930:
               error is 0.63736
Iteration 940:
               error is 0.63736
Iteration 950: error is 0.63736
Iteration 960: error is 0.63736
Iteration 970: error is 0.63736
Iteration 980: error is 0.63736
Iteration 990: error is 0.63736
Iteration 1000: error is 0.63736
J new = 0.8702
J new = 0.8399
J new = 0.8226
J new = 0.8120
J \text{ new} = 0.8089
```

J new = 0.8069

 $J_{new} = 0.8025$

 $J_{new} = 0.7909$

 $J_{new} = 0.7814$

J new = 0.7431

J new = 0.7419

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.2991

Iteration 20: error is 37.1203

Iteration 30: error is 37.1013

Iteration 40: error is 37.1974

Iteration 50: error is 37.2215

Iteration 60: error is 37.4209

Iteration 70: error is 37.7927

Iteration 80: error is 37.5089

Iteration 90: error is 38.1647

Iteration 100: error is 2.2923

Iteration 110: error is 1.1959

Iteration is 0.83592 120: error is 0.69533 Iteration 130: error Iteration 140: is 0.67517 error Iteration 150: 0.66586 is error Iteration 160: is 0.65935 error Iteration 0.65465 170: is error Iteration 180: 0.65104 is error Iteration 0.64819 is 190: error Iteration 0.64598 is 200: error Iteration is 0.64417 210: error Iteration 0.64266 220: is error Iteration error is 0.64138 230: Iteration 0.64035 240: is error Iteration 250: is 0.63933 error Iteration 260: is 0.63781 error Iteration is 270: 0.63615 error Iteration is 0.63494 280: error Iteration 290: is 0.63405 error Iteration 300: is 0.6334 error Iteration 0.63289 is 310: error Iteration 320: is 0.6325 error

Iteration 330: is 0.63218 error is 0.63193 Iteration 340: error Iteration 350: is 0.63172 error Iteration 360: 0.63155 is error Iteration 370: is 0.63141 error Iteration 380: is 0.63129 error Iteration 0.63118 390: is error Iteration 0.63109 is 400: error Iteration is 0.63102 410: error Iteration 420: 0.63096 error is Iteration 430: is 0.6309 error Iteration error is 0.63085 440: Iteration 0.63081 450: is error Iteration 460: error is 0.63077 Iteration is 0.63074 470: error Iteration is 480: 0.63071 error Iteration is 490: 0.63069 error Iteration 500: 0.63066 is error Iteration 510: is 0.63064 error Iteration 520: is 0.63063 error Iteration 530: error is 0.63061

Iteration 540: is 0.6306 error 550: 0.63059 Iteration is error Iteration 560: 0.63058 is error Iteration 570: 0.63057 is error 580: Iteration is 0.63056 error Iteration 590: is 0.63055 error Iteration 600: 0.63055 is error Iteration 0.63054 610: is error Iteration 0.63054 620: is error Iteration 630: error is 0.63053 Iteration 0.63053 error is 640: Iteration error is 0.63052 650: Iteration error is 0.63052 660: Iteration 0.63052 670: error is Iteration is 680: 0.63051 error Iteration is 690: 0.63051 error Iteration is 700: 0.63051 error Iteration 710: is 0.63051 error Iteration 720: is 0.6305 error Iteration 730: 0.6305 is error Iteration 740: error is 0.6305

Iteration is 0.6305 750: error Iteration is 760: 0.6305 error Iteration is 770: 0.6305 error Iteration 780: is 0.6305 error Iteration is 0.6305 error 790: Iteration 800: is 0.6305 error Iteration 0.63049 810: is error Iteration 0.63049 is 820: error Iteration 0.63049 is 830: error Iteration is 0.63049 840: error Iteration 850: 0.63049 is error Iteration error is 0.63049 860: Iteration 0.63049 870: is error Iteration 0.63049 880: error is Iteration is 0.63049 890: error Iteration is 900: 0.63049 error Iteration 910: is 0.63049 error Iteration 920: is 0.63049 error Iteration 930: is 0.63049 error Iteration 940: 0.63049 is error Iteration error is 950: 0.63049 Iteration 960: error is 0.63049

Iteration 970: error is 0.63049

Iteration 980: error is 0.63049

Iteration 990: error is 0.63049

Iteration 1000: error is 0.63049

J new = 0.8436

 $J_{new} = 0.8272$

J new = 0.8162

J new = 0.8142

J new = 0.8120

J new = 0.8081

J new = 0.8065

J new = 0.8025

J new = 0.7909

J new = 0.7814

J new = 0.7431

J new = 0.7419

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: is 39.6382 error is 37.3697 Iteration 20: error Iteration 30: is 37,2706 error Iteration 40: is 36.9556 error Iteration 50: error is 36.8232 Iteration 60: is 37,196 error Iteration 70: error is 37,5471 Iteration is 80: 37,6108 error Iteration is 37.8502 90: error Iteration error is 2.1841 100: Iteration 110: is 1.3034 error Iteration 120: error is 1.048 Iteration 130: error is 0.91348 Iteration 140: error is 0.84397 Iteration 150: error is 0.79837 Iteration 160: is 0.78127 error is Iteration 170: 0.76307 error Iteration 180: is 0.66936 error Iteration 0.65151 190: İS error Iteration 0.69172 is 200: error Iteration 210: error is 0.65002

Iteration is 0.64209 220: error is Iteration 230: 0.6379 error Iteration is 240: 0.63711 error Iteration 0.63642 250: is error Iteration 260: 0.63532 error is Iteration 270: is 0.63409 error Iteration 0.63322 280: is error Iteration 0.63259 is 290: error Iteration 0.63208 is 300: error Iteration is 0.63168 310: error Iteration 320: 0.63137 error is Iteration 330: error is 0.63112 Iteration 340: error is 0.63092 Iteration 350: 0.63074 error is Iteration 360: is 0.6306 error Iteration 370: is 0.63048 error is Iteration 380: 0.63038 error Iteration 390: is 0.63029 error Iteration 400: is 0.63022 error Iteration 410: 0.63016 is error Iteration 420: error is 0.63011

Iteration 430: is 0.63006 error Iteration 440: is 0.63002 error Iteration is 450: 0.62998 error Iteration 460: is 0.62995 error Iteration is 0.62993 470: error Iteration is 480: error 0.62991 Iteration 0.62989 490: is error Iteration 0.62987 is 500: error Iteration 0.62985 510: is error Iteration 520: 0.62984 error is Iteration 530: 0.62983 is error Iteration 540: error is 0.62982 550: Iteration is 0.62981 error Iteration 560: is 0.6298 error Iteration is 570: 0.62979 error Iteration 580: is 0.62979 error Iteration is 0.62978 590: error Iteration 600: is 0.62978 error 0.62977 Iteration 610: is error Iteration 620: 0.62977 is error Iteration 0.62977 630: is error

Iteration 640: is 0.62976 error Iteration 650: is 0.62976 error Iteration 0.62976 660: is error Iteration is 670: 0.62975 error Iteration 0.62975 680: error is Iteration is 0.62975 690: error Iteration 0.62975 700: is error Iteration 0.62975 is 710: error Iteration 0.62975 720: is error Iteration 0.62975 730: error is Iteration 0.62975 740: is error Iteration error is 750: 0.62974 Iteration 760: is 0.62974 error Iteration is 0.62974 770: error Iteration is 780: 0.62974 error Iteration 790: is 0.62974 error Iteration 0.62974 800: is error Iteration 810: is 0.62974 error Iteration 0.62974 820: is error Iteration 830: 0.62974 is error Iteration error is 840: 0.62974

```
Iteration 850: error is 0.62974
Iteration 860:
               error is 0.62974
               error is 0.62974
Iteration 870:
Iteration 880:
               error is 0.62974
Iteration 890:
               error is 0.62974
Iteration 900:
               error is 0.62974
Iteration 910:
               error is 0.62974
Iteration 920:
               error is 0.62974
Iteration 930:
               error is 0.62974
Iteration 940:
               error is 0.62974
Iteration 950: error is 0.62974
Iteration 960: error is 0.62974
Iteration 970: error is 0.62974
Iteration 980: error is 0.62974
Iteration 990: error is 0.62974
Iteration 1000: error is 0.62974
J new = 0.8436
J new = 0.8277
J new = 0.8168
J new = 0.8146
J new = 0.8122
```

J new = 0.8078

J new = 0.8063

J new = 0.8017

J new = 0.7865

J new = 0.7423

J new = 0.7430

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9742

Iteration 20: error is 37.7682

Iteration 30: error is 36.9064

Iteration 40: error is 37.1332

Iteration 50: error is 37.4659

Iteration 60: error is 36.9861

Iteration 70: error is 37.2404

Iteration 80: error is 37.2745

Iteration 90: error is 36.7446

Iteration 100: error is 2.0949

Iteration 110: error is 1.2554

Iteration 120: error is 0.92465

Iteration is 0.79797 130: error Iteration 140: is 0.73271 error Iteration 150: is 0.67021 error Iteration 0.65857 160: is error 170: 0.65287 Iteration error is Iteration 180: 0.64944 is error Iteration 0.64682 190: is error Iteration 0.64429 is 200: error Iteration 0.64251 210: is error Iteration 0.64107 220: is error Iteration 0.63983 230: is error Iteration error is 0.63877 240: Iteration 0.63789 250: is error Iteration 260: is 0.63647 error Iteration is 0.63495 270: error Iteration 280: is 0.63377 error Iteration is 0.63289 290: error Iteration 300: is 0.63225 error Iteration 310: is 0.63173 error Iteration 0.63134 is 320: error Iteration 330: is 0.63102 error

Iteration 340: is 0.63076 error 350: Iteration is 0.63055 error Iteration 360: is 0.63037 error Iteration 370: is 0.63022 error Iteration 0.63009 error 380: is Iteration 390: error is 0.62998 Iteration 0.62989 400: is error Iteration 0.62981 is 410: error Iteration 420: is 0.62974 error Iteration 430: is 0.62968 error Iteration 0.62963 440: is error Iteration error is 0.62958 450: Iteration 0.62954 460: is error Iteration 0.62951 is 470: error Iteration 480: is 0.62948 error Iteration 490: is 0.62945 error Iteration 500: is 0.62943 error Iteration 510: is 0.62941 error Iteration 520: 0.62939 is error Iteration 530: 0.62937 is error Iteration 540: is 0.62936 error

Iteration 550: is 0.62935 error Iteration 560: is 0.62934 error Iteration 570: 0.62933 is error Iteration 580: is 0.62932 error Iteration 0.62931 error 590: is Iteration 600: error is 0.6293 Iteration 0.6293 610: is error Iteration 0.62929 620: is error Iteration 630: is 0.62928 error Iteration 0.62928 640: error is Iteration 650: 0.62928 is error Iteration error is 660: 0.62927 Iteration 670: is 0.62927 error Iteration error is 0.62927 680: Iteration is 0.62926 690: error Iteration 700: is 0.62926 error Iteration is 710: 0.62926 error Iteration 720: is 0.62926 error Iteration 730: is 0.62925 error Iteration 0.62925 740: is error Iteration 750: error is 0.62925

Iteration 760: is 0.62925 error Iteration 770: is 0.62925 error Iteration 0.62925 is 780: error Iteration 790: 0.62925 error is Iteration 0.62925 error 800: is Iteration 0.62925 error 810: is Iteration 0.62925 820: is error Iteration is 0.62924 830: error Iteration 840: is 0.62924 error Iteration 0.62924 850: error is Iteration 0.62924 860: is error Iteration error is 870: 0.62924 Iteration 880: is 0.62924 error Iteration is 0.62924 890: error Iteration is 0.62924 900: error Iteration 910: is 0.62924 error Iteration 920: is 0.62924 error Iteration 930: 0.62924 is error Iteration 940: is 0.62924 error Iteration 950: 0.62924 is error Iteration 960: 0.62924 is error

Iteration 970: error is 0.62924

Iteration 980: error is 0.62924

Iteration 990: error is 0.62924

Iteration 1000: error is 0.62924

J new = 0.8421

J new = 0.8272

J new = 0.8176

J new = 0.8158

J new = 0.8149

J new = 0.8109

J new = 0.8073

J new = 0.8025

J new = 0.7908

J new = 0.7814

J new = 0.7432

J new = 0.7419

 $J_{new} = 0.7427$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.242

Iteration 20: is 36.8829 error 30: is 36.5191 Iteration error Iteration is 36.8548 40: error Iteration 50: error is 37.0783 60: Iteration is 36,6617 error Iteration 37.423 70: is error Iteration 80: error is 37.3621 Iteration error is 37.7964 90: Iteration 100: is 2,2733 error Iteration 110: error is 1.3413 Iteration 120: 0.86359 error is Iteration 130: error is 0.72777 error is Iteration 140: 0.69106 Iteration 150: 0.67547 error is Iteration 160: is 0.667 error Iteration 170: is 0.66202 error is Iteration 180: 0.65833 error Iteration 190: 0.65562 is error Iteration 0.65336 200: İS error Iteration 0.65152 is 210: error Iteration 220: error is 0.65007

Iteration is 0.64883 230: error Iteration 240: is 0.64777 error Iteration 0.64688 is 250: error Iteration 0.64549 260: is error Iteration 0.64397 error 270: is Iteration 280: 0.64283 is error Iteration 0.64201 290: is error Iteration 0.64139 is 300: error Iteration 0.64093 310: is error Iteration 0.64056 320: is error Iteration 330: 0.64026 is error Iteration error is 0.64002 340: 350: 0.63982 Iteration is error Iteration 360: is 0.63966 error Iteration 370: is 0.63953 error Iteration 380: is 0.63942 error Iteration is 0.63934 390: error Iteration 400: is 0.63926 error Iteration 410: is 0.63919 error Iteration 420: 0.63913 is error Iteration 430: is 0.63908 error

Iteration 440: is 0.63904 error Iteration 450: is 0.639 error Iteration is 460: 0.63897 error Iteration 0.63894 470: is error Iteration 0.63892 error 480: is Iteration 490: 0.6389 is error Iteration 0.63888 500: is error Iteration 510: is 0.63886 error Iteration 0.63885 520: is error Iteration 530: 0.63884 is error Iteration 540: 0.63883 is error Iteration 0.63882 550: is error 560: 0.63881 Iteration is error Iteration 570: is 0.6388 error Iteration 580: is 0.63879 error Iteration 590: is 0.63879 error Iteration is 600: 0.63878 error Iteration 610: is 0.63878 error Iteration 620: is 0.63877 error Iteration 630: 0.63877 is error Iteration 640: is 0.63877 error

Iteration 650: is 0.63877 error Iteration 660: is 0.63876 error Iteration is 670: 0.63876 error Iteration 680: 0.63876 error is 690: 0.63876 Iteration error is Iteration 700: 0.63876 is error Iteration 0.63875 710: is error Iteration 0.63875 is 720: error Iteration 0.63875 is 730: error Iteration 0.63875 740: error is Iteration 750: 0.63875 is error Iteration error is 0.63875 760: Iteration 0.63875 770: is error Iteration is 0.63875 780: error Iteration is 0.63875 790: error Iteration is 800: 0.63875 error Iteration is 0.63875 810: error Iteration 820: is 0.63875 error Iteration 0.63875 830: is error Iteration 0.63874 is 840: error Iteration 850: is 0.63874 error

```
Iteration 860: error is 0.63874
Iteration 870:
               error is 0.63874
               error is 0.63874
Iteration 880:
Iteration 890:
               error is 0.63874
Iteration 900:
               error is 0.63874
Iteration 910:
               error is 0.63874
Iteration 920:
               error is 0.63874
Iteration 930:
               error is 0.63874
Iteration 940: error is 0.63874
Iteration 950:
               error is 0.63874
Iteration 960: error is 0.63874
Iteration 970: error is 0.63874
Iteration 980: error is 0.63874
Iteration 990: error is 0.63874
Iteration 1000: error is 0.63874
J \text{ new} = 0.8432
J new = 0.8273
J new = 0.8156
J new = 0.8139
J new = 0.8116
```

J new = 0.8079

J new = 0.8061

 $J_{new} = 0.8022$

J new = 0.7905

 $J_{new} = 0.7811$

J new = 0.7427

J new = 0.7416

 $J_{new} = 0.7424$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.0098

Iteration 20: error is 36.9166

Iteration 30: error is 36.2842

Iteration 40: error is 36.6869

Iteration 50: error is 36.8262

Iteration 60: error is 36.4854

Iteration 70: error is 36.9662

Iteration 80: error is 36.964

Iteration 90: error is 37.4471

Iteration 100: error is 2.174

Iteration 110: error is 1.1679

Iteration is 0.85321 120: error Iteration 130: is 0.78704 error Iteration 140: is 0.72792 error Iteration 150: is 0.69405 error Iteration 160: is 0.6525 error Iteration 170: 0.64774 is error Iteration 180: 0.64385 is error Iteration is 0.64146 190: error Iteration 0.63927 is 200: error Iteration 0.63765 210: is error Iteration 0.63628 220: is error Iteration error is 0.63603 230: Iteration 240: is 0.63415 error Iteration 250: is 0.63331 error Iteration 0.63198 260: is error Iteration is 270: 0.63054 error Iteration is 280: 0.62948 error Iteration 290: is 0.62871 error Iteration 300: is 0.62809 error Iteration 0.62762 is 310: error Iteration 320: is 0.62726 error

Iteration 330: is 0.62698 error Iteration 340: is 0.62674 error Iteration 350: is 0.62655 error Iteration 360: is 0.6264 error Iteration 370: 0.62627 error is Iteration 380: is 0.62615 error Iteration 0.62606 390: is error Iteration 0.62598 is 400: error Iteration 0.62591 410: is error Iteration 420: is 0.62585 error Iteration 430: 0.62581 error is Iteration error is 440: 0.62576 Iteration error is 450: 0.62573 Iteration error is 0.6257 460: Iteration is 0.62567 470: error Iteration 480: is 0.62565 error Iteration is 0.62562 490: error Iteration 500: is 0.62561 error Iteration 0.62559 510: is error Iteration 520: 0.62558 is error Iteration error is 530: 0.62557

Iteration 540: is 0.62556 error 0.62555 Iteration 550: is error Iteration 560: is 0.62554 error Iteration 570: is 0.62553 error 580: Iteration is 0.62552 error Iteration 0.62552 590: error is Iteration 600: is 0.62551 error Iteration 610: is 0.62551 error Iteration 0.6255 620: is error Iteration 630: is 0.6255 error Iteration 0.6255 640: is error 0.62549 Iteration error is 650: 0.62549 Iteration 660: is error Iteration 0.62549 670: is error Iteration is 680: 0.62549 error Iteration is 690: 0.62548 error Iteration is 0.62548 700: error Iteration 710: is 0.62548 error Iteration 0.62548 720: is error Iteration 730: 0.62548 is error Iteration 740: is 0.62548 error

Iteration is 0.62548 750: error 0.62548 Iteration 760: is error Iteration 770: is 0.62548 error Iteration 780: is 0.62548 error Iteration is 0.62547 error 790: Iteration 0.62547 800: is error Iteration 0.62547 810: is error Iteration 0.62547 is 820: error Iteration 0.62547 is 830: error Iteration is 0.62547 840: error Iteration 850: 0.62547 is error Iteration error is 860: 0.62547 0.62547 Iteration 870: is error Iteration is 0.62547 880: error Iteration is 0.62547 890: error Iteration 900: is 0.62547 error Iteration is 0.62547 910: error Iteration 920: is 0.62547 error Iteration 0.62547 930: is error Iteration 940: 0.62547 is error Iteration 950: is 0.62547 error

Iteration 960: error is 0.62547

Iteration 970: error is 0.62547

Iteration 980: error is 0.62547

Iteration 990: error is 0.62547

Iteration 1000: error is 0.62547

 $J_{new} = 0.7952$

J new = 0.7699

J new = 0.7534

J new = 0.7452

J new = 0.7444

 $J_{new} = 0.7453$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.5609

Iteration 20: error is 36.9347

Iteration 30: error is 37.1237

Iteration 40: error is 37.0609

Iteration 50: error is 37.1862

Iteration 60: error is 37.8754

Iteration 70: error is 37.4045

Iteration is 37,403 80: error is 37.5149 Iteration 90: error Iteration 100: İS 2.0525 error Iteration 110: is 1.1433 error Iteration 0.84358 error 120: is Iteration error is 130: 0.70588 Iteration 140: 0.67803 is error Iteration 150: is 0.6685 error Iteration 160: is 0.66145 error Iteration 170: error is 0.65636 Iteration 180: 0.65263 error is Iteration error is 0.64974 190: Iteration error is 200: 0.64748 Iteration 0.64566 210: error is Iteration 220: is 0.64409 error Iteration is 230: 0.64285 error Iteration is 0.64169 240: error Iteration 250: is 0.64074 error Iteration 260: is 0.63925 error Iteration 0.63764 is 270: error Iteration error is 280: 0.63644

Iteration is 0.63555 290: error 0.63488 Iteration 300: is error Iteration 310: 0.63439 is error Iteration 320: is 0.63399 error Iteration 330: is 0.63368 error Iteration 340: is 0.63343 error Iteration 350: 0.63322 is error Iteration 360: is 0.63305 error Iteration 0.63291 370: is error Iteration 380: is 0.63279 error Iteration 390: 0.63269 is error Iteration error is 400: 0.6326 Iteration error is 0.63253 410: Iteration 420: error is 0.63247 Iteration 430: is 0.63241 error Iteration 440: is 0.63237 error Iteration is 450: 0.63233 error Iteration 460: is 0.63229 error Iteration 470: is 0.63226 error Iteration 480: 0.63223 is error Iteration 490: error is 0.63221

Iteration 500: is 0.63219 error Iteration 510: is 0.63217 error Iteration 520: is 0.63215 error Iteration 530: is 0.63214 error Iteration error 0.63213 540: is Iteration 550: error is 0.63211 Iteration 560: 0.6321 is error Iteration 570: is 0.6321 error Iteration 0.63209 580: is error Iteration 0.63208 590: error is Iteration 0.63208 600: is error Iteration error is 0.63207 610: Iteration 620: is 0.63206 error Iteration 630: is 0.63206 error Iteration is 640: 0.63206 error Iteration is 650: 0.63205 error Iteration is 660: 0.63205 error Iteration 670: is 0.63205 error Iteration 680: is 0.63204 error Iteration 690: is 0.63204 error Iteration 700: is 0.63204 error

Iteration 710: is 0.63204 error Iteration 720: is 0.63204 error Iteration is 730: 0.63203 error Iteration 740: 0.63203 is error Iteration 750: error is 0.63203 Iteration 760: error 0.63203 is Iteration 0.63203 770: is error Iteration 0.63203 is 780: error Iteration 0.63203 790: is error Iteration 0.63203 800: error is Iteration 0.63203 810: is error Iteration error is 0.63203 820: 0.63203 Iteration 830: is error Iteration 840: error is 0.63203 Iteration is 850: 0.63203 error Iteration 860: is 0.63202 error is Iteration 870: 0.63202 error Iteration 880: 0.63202 is error Iteration 890: is 0.63202 error Iteration is 0.63202 900: error Iteration is 910: 0.63202 error

```
Iteration 920: error is 0.63202
```

J new =
$$0.8427$$

J new =
$$0.8270$$

J new =
$$0.8166$$

J new =
$$0.8150$$

J new =
$$0.8145$$

J new =
$$0.8108$$

J new =
$$0.8088$$

$$J new = 0.8052$$

$$J new = 0.8032$$

J new =
$$0.7896$$

J new =
$$0.7820$$

J new =
$$0.7418$$

J new = 0.7425Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 38.6269 Iteration 20: error is 37.5425 Iteration 30: error is 37.0587 Iteration 40: error is 36.8077 Iteration 50: error is 37.3071 Iteration 60: error is 37.2803 Iteration 70: error is 37.5208 Iteration 80: error is 37.6743 Iteration 90: error is 38.1767 Iteration 100: error is 2.3163 Iteration 110: error is 1.4627 Iteration 120: error is 0.97588 Iteration 130: error is 0.78315 Iteration 140: error is 0.74273 Iteration 150: error is 0.70787 Iteration 160: error is 0.70223 Iteration 170: error is 0.69793

Iteration is 0.6951 180: error 0.69293 Iteration 190: is error Iteration 0.69093 is 200: error Iteration 0.66445 210: is error Iteration 0.66187 error 220: is Iteration 0.65914 230: is error Iteration 0.658 240: is error Iteration 0.65701 is 250: error Iteration 0.65545 260: is error Iteration 0.65372 270: error is Iteration 0.65246 280: is error Iteration error is 0.65154 290: Iteration is 0.65086 300: error Iteration 310: is 0.65032 error Iteration 320: is 0.64991 error Iteration 330: is 0.64958 error is Iteration 340: 0.64931 error Iteration 350: is 0.64909 error Iteration 360: is 0.64891 error Iteration 370: 0.64876 is error Iteration 380: is 0.64863 error

Iteration is 0.64852 390: error Iteration 400: is 0.64843 error Iteration 0.64835 is 410: error Iteration 0.64828 420: error is Iteration 0.64822 430: error is Iteration 440: 0.64817 is error Iteration 0.64813 450: is error Iteration 460: is 0.64809 error Iteration 470: is 0.64806 error Iteration 480: error is 0.64803 Iteration 0.64801 490: is error Iteration error is 0.64798 500: 0.64796 Iteration 510: is error Iteration 520: is 0.64794 error Iteration 530: is 0.64793 error Iteration 540: is 0.64791 error is Iteration 550: 0.6479 error Iteration 560: is 0.64789 error Iteration 570: is 0.64788 error Iteration 580: 0.64787 is error Iteration 590: is 0.64786 error

Iteration is 0.64785 600: error 0.64785 Iteration 610: is error Iteration 0.64784 is 620: error Iteration 630: is 0.64784 error 0.64783 Iteration error 640: is Iteration 650: 0.64783 is error Iteration 0.64782 660: is error Iteration is 0.64782 670: error Iteration 0.64782 680: is error Iteration 0.64781 690: error is Iteration 0.64781 700: is error Iteration error is 710: 0.64781 Iteration 720: is 0.64781 error Iteration is 730: 0.6478 error Iteration is 0.6478 740: error Iteration 750: is 0.6478 error Iteration is 760: 0.6478 error Iteration 770: is 0.6478 error Iteration 780: is 0.6478 error Iteration 0.64779 790: is error Iteration 800: error is 0.64779

Iteration 810: error is 0.64779 Iteration 820: is 0.64779 error Iteration 830: error is 0.64779 Iteration 840: error is 0.64779 error is Iteration 850: 0.64779 Iteration 860: error is 0.64779 Iteration 870: error is 0.64779 Iteration 880: error is 0.64779 Iteration 890: error is 0.64779 Iteration 900: error is 0.64779 Iteration 910: error is 0.64779 Iteration 920: error is 0.64779 0.64779 Iteration 930: error is Iteration 940: error is 0.64779 Iteration 950: error is 0.64779 Iteration 960: error is 0.64779 Iteration 970: error is 0.64778 Iteration 980: error is 0.64778 Iteration 990: error is 0.64778 Iteration 1000: error is 0.64778 J new = 0.8372

- J new = 0.8218
- J new = 0.8199
- $J_{new} = 0.8196$
- J new = 0.8170
- J new = 0.8168
- J new = 0.8129
- J new = 0.8112
- J new = 0.8073
- J new = 0.8052
- J new = 0.7873
- J new = 0.7453
- J new = 0.7438
- J new = 0.7446
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 40.1877
- Iteration 20: error is 37.94
- Iteration 30: error is 37.0553
- Iteration 40: error is 37.3987
- Iteration 50: error is 36.9742

Iteration is 37.2785 60: error is Iteration 70: 37,2044 error is Iteration 38.1324 80: error Iteration 90: is 37.8607 error Iteration 100: is 2.4454 error Iteration 1.2558 110: is error Iteration 0.90054 120: is error Iteration error is 0.78924 130: Iteration 0.74239 140: is error Iteration 150: error is 0.6883 Iteration 160: 0.67621 error is Iteration error is 170: 0.66334 error is Iteration 180: 0.65965 Iteration 0.65739 190: error is Iteration is 200: 0.65521 error Iteration is 210: 0.65349 error Iteration is 0.65212 220: error Iteration 230: is 0.65087 error Iteration 240: is 0.64991 error Iteration 250: 0.64911 is error Iteration 260: error is 0.6477

Iteration is 0.6463 270: error 0.64519 Iteration 280: is error Iteration 0.64434 is 290: error Iteration 300: is 0.64372 error Iteration 0.64324 error 310: is Iteration 320: error is 0.64285 Iteration 0.64254 330: is error Iteration is 0.64229 340: error Iteration 0.64208 350: is error Iteration 360: is 0.64191 error Iteration 370: 0.64177 is error Iteration 380: error is 0.64165 Iteration 390: 0.64155 is error Iteration 400: error is 0.64146 Iteration is 0.64138 410: error Iteration 420: is 0.64132 error Iteration is 0.64127 430: error Iteration is 0.64123 440: error Iteration 450: is 0.64118 error Iteration 460: 0.64115 is error Iteration 470: error is 0.64112

Iteration is 0.64109 480: error 0.64107 Iteration 490: is error Iteration 0.64105 is 500: error Iteration 510: 0.64103 is error 520: 0.64101 Iteration error is Iteration 530: error is 0.641 Iteration 540: 0.64098 is error Iteration 550: is 0.64097 error 560: Iteration is 0.64096 error Iteration 570: is error 0.64096 Iteration 580: 0.64095 is error Iteration error is 0.64094 590: Iteration error is 600: 0.64093 Iteration 610: error is 0.64093 Iteration is 620: 0.64093 error Iteration is 630: 0.64092 error Iteration is 0.64092 640: error Iteration 650: is 0.64091 error Iteration 660: is 0.64091 error Iteration 670: 0.64091 is error Iteration error is 680: 0.64091

Iteration is 0.6409 690: error Iteration 700: is 0.6409 error Iteration is 710: 0.6409 error Iteration 720: 0.6409 is error Iteration error 730: is 0.6409 Iteration error 0.6409 740: is Iteration 750: is 0.6409 error Iteration 760: is error 0.64089 Iteration 0.64089 770: is error Iteration 780: error is 0.64089 Iteration 0.64089 790: is error Iteration error is 0.64089 800: Iteration 810: is 0.64089 error Iteration is 820: 0.64089 error Iteration 830: is 0.64089 error Iteration 840: is 0.64089 error is Iteration 850: 0.64089 error Iteration 860: is 0.64089 error Iteration 870: is 0.64089 error Iteration 0.64089 is 880: error Iteration 890: error is 0.64089

```
Iteration 900: error is 0.64089
```

J new =
$$0.8416$$

J new =
$$0.8264$$

J new =
$$0.8142$$

J new =
$$0.8112$$

J new =
$$0.8098$$

J new =
$$0.8054$$

J new =
$$0.8006$$

J new =
$$0.7851$$

J new =
$$0.7431$$

J new =
$$0.7416$$

J new = 0.7424Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.2662 Iteration 20: error is 36.9309 Iteration 30: error is 36.474 Iteration 40: error is 36.4562 Iteration 50: error is 36.678 Iteration 60: error is 36.9119 Iteration 70: error is 37.3551 Iteration 80: error is 37.3717 Iteration 90: error is 37.6916 Iteration 100: error is 2.3331 Iteration 110: error is 1.421 Iteration 120: error is 0.96839 Iteration 130: error is 0.76504 Iteration 140: error is 0.6722 Iteration 150: error is 0.66768 Iteration 160: error is 0.65886 Iteration 170: error is 0.65442

Iteration is 0.65143 180: error 0.64927 Iteration 190: is error Iteration is 200: 0.64704 error Iteration 0.64549 210: is error 0.64417 Iteration error 220: is Iteration 230: 0.64299 is error Iteration 0.64205 240: is error Iteration is 0.6412 250: error Iteration 0.63991 260: is error Iteration 270: error is 0.6384 Iteration 0.63737 280: is error Iteration error is 0.63664 290: Iteration is 300: 0.63608 error Iteration 310: is 0.63562 error Iteration 320: is 0.63527 error Iteration 330: is 0.63498 error is Iteration 340: 0.63475 error Iteration 350: is 0.63455 error Iteration 360: is 0.63439 error Iteration 370: 0.63426 is error Iteration 0.63414 380: is error

Iteration is 0.63404 390: error 400: Iteration is 0.63397 error Iteration is 410: 0.6339 error Iteration 0.63384 420: is error Iteration is 0.63379 430: error Iteration 440: is 0.63374 error Iteration 0.6337 450: is error Iteration 460: is 0.63367 error Iteration 0.63364 470: is error Iteration 0.63362 480: error is Iteration 0.63359 490: is error Iteration 500: error is 0.63357 Iteration 510: 0.63356 is error Iteration 520: is 0.63354 error Iteration 530: is 0.63353 error Iteration 540: is 0.63352 error Iteration is 550: 0.63351 error Iteration 560: is 0.6335 error Iteration 570: is 0.63349 error Iteration 580: 0.63349 is error Iteration 590: is 0.63348 error

Iteration is 0.63347 600: error Iteration 0.63347 610: is error Iteration is 620: 0.63347 error Iteration 630: is 0.63346 error Iteration 0.63346 error 640: is Iteration 650: error is 0.63345 Iteration 660: 0.63345 is error Iteration 0.63345 is 670: error Iteration 0.63345 680: is error Iteration is 0.63345 690: error Iteration 0.63344 700: is error Iteration error is 0.63344 710: Iteration 720: is 0.63344 error Iteration is 730: 0.63344 error Iteration is 0.63344 740: error Iteration 750: is 0.63344 error Iteration is 760: 0.63344 error Iteration 770: is 0.63344 error Iteration 780: is 0.63344 error Iteration 0.63343 is 790: error Iteration 800: is 0.63343 error

Iteration 810: error is 0.63343 is 0.63343 Iteration 820: error Iteration 830: error is 0.63343 Iteration 840: error is 0.63343 error is Iteration 850: 0.63343 Iteration 860: error is 0.63343 Iteration 870: error is 0.63343 Iteration 880: error is 0.63343 Iteration 890: error is 0.63343 Iteration 900: error is 0.63343 Iteration 910: error is 0.63343 Iteration 920: error is 0.63343 Iteration 930: error is 0.63343 Iteration 940: error is 0.63343 Iteration 950: error is 0.63343 Iteration 960: error is 0.63343 Iteration 970: error is 0.63343 Iteration 980: error is 0.63343 Iteration 990: error is 0.63343 Iteration 1000: error is 0.63343 J new = 0.8400

- J new = 0.8266
- J new = 0.8145
- J new = 0.8116
- J new = 0.8100
- J new = 0.8058
- J new = 0.8009
- J new = 0.7855
- J new = 0.7434
- J new = 0.7420
- $J_{new} = 0.7426$
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.9468
- Iteration 20: error is 37.4541
- Iteration 30: error is 37.301
- Iteration 40: error is 37.1213
- Iteration 50: error is 37.0785
- Iteration 60: error is 37.2981
- Iteration 70: error is 37.1567
- Iteration 80: error is 37.2489

Iteration 90: error is 37.2374 100: Iteration İS 2.179 error is Iteration 110: 1.3166 error Iteration 120: 0.94782 İS error 130: Iteration 0.80785 error is Iteration error is 140: 0.70006 Iteration 150: is 0.6674 error Iteration 160: is 0.66021 error Iteration 0.65551 170: is error Iteration 0.65192 180: error is Iteration 0.64902 error is 190: Iteration 200: error is 0.64671 Iteration error is 210: 0.64493 Iteration 220: error is 0.64344 Iteration is 0.64216 230: error Iteration is 240: 0.64114 error Iteration is 250: 0.64018 error Iteration 260: 0.63877 is error Iteration 270: is 0.6372 error Iteration 0.63605 is 280: error Iteration 290: error is 0.63517

Iteration 300: is 0.63451 error 0.63399 Iteration 310: is error Iteration 320: 0.63359 is error Iteration 330: İS 0.63327 error 0.63301 Iteration 340: is error Iteration 350: is 0.6328 error Iteration 360: 0.63263 is error Iteration 370: 0.63247 is error Iteration 0.63231 380: is error Iteration 390: 0.63214 error is Iteration 400: error is 0.632 Iteration error is 0.63188 410: Iteration 420: error is 0.63157 Iteration error is 430: 0.63143 Iteration 440: is 0.63137 error Iteration 450: 0.63133 is error Iteration 0.6313 is 460: error Iteration 470: is 0.63126 error Iteration 480: is 0.63123 error Iteration 490: is 0.6312 error Iteration 500: error is 0.63117

Iteration 510: is 0.63115 error Iteration 520: is 0.63113 error Iteration 530: is 0.63112 error Iteration 540: is 0.6311 error Iteration 550: is 0.63109 error Iteration 560: is 0.63107 error Iteration 570: 0.63106 is error Iteration 0.63105 580: is error Iteration is 0.63105 590: error Iteration 600: 0.63104 error is Iteration 610: 0.63103 error is Iteration error is 0.63103 620: Iteration 0.63102 630: error is Iteration 640: error is 0.63102 Iteration is 650: 0.63101 error Iteration is 660: 0.63101 error Iteration is 670: 0.63101 error Iteration 680: is 0.631 error Iteration 690: is 0.631 error Iteration is 0.631 700: error Iteration 710: error is 0.631

Iteration is 0.63099 720: error Iteration 730: is 0.63099 error Iteration is 740: 0.63099 error Iteration 750: is 0.63099 error 0.63099 Iteration is 760: error Iteration 770: error is 0.63099 Iteration 0.63099 780: is error Iteration 0.63098 is 790: error Iteration 0.63098 is 800: error Iteration 0.63098 810: error is Iteration 0.63098 820: is error Iteration error is 0.63098 830: Iteration 0.63098 840: is error Iteration 850: is 0.63098 error Iteration is 860: 0.63098 error Iteration is 870: 0.63098 error Iteration is 880: 0.63098 error Iteration 890: is 0.63098 error Iteration 900: is 0.63098 error Iteration 0.63098 is 910: error Iteration 920: is 0.63098 error

```
Iteration 930: error is 0.63098
```

J new =
$$0.8453$$

J new =
$$0.8276$$

J new =
$$0.8166$$

J new =
$$0.8150$$

J new =
$$0.8145$$

J new =
$$0.8108$$

J new =
$$0.8088$$

J new =
$$0.8052$$

J new =
$$0.8031$$

J new =
$$0.7896$$

J new =
$$0.7820$$

J new =
$$0.7418$$

J new =
$$0.7425$$

Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.3836 Iteration 20: error is 36.5764 Iteration 30: error is 36.831 Iteration 40: error is 36.7648 Iteration 50: error is 37.2873 Iteration 60: error is 37.924 Iteration 70: error is 37.6533 Iteration 80: error is 37.4724 Iteration 90: error is 37.0884 Iteration 100: error is 2.3804 Iteration 110: error is 1.2718 error is 0.85735 Iteration 120: Iteration 130: error is 0.73665 Iteration 140: error is 0.71399 Iteration 150: error is 0.70383 Iteration 160: error is 0.69831 Iteration 170: error is 0.69348 Iteration 180: error is 0.69016

Iteration is 0.68683 190: error 0.65812 Iteration 200: is error Iteration 210: is 0.64927 error Iteration 220: is 0.64787 error 0.64663 Iteration error 230: is Iteration 240: 0.64558 is error Iteration 250: is 0.6447 error Iteration 0.64331 260: is error Iteration 0.64188 270: is error Iteration is 280: 0.6408 error Iteration 0.64004 290: is error Iteration 300: error is 0.63943 Iteration 0.63898 310: is error Iteration 320: is 0.63861 error Iteration 330: is 0.63831 error Iteration 340: is 0.63807 error is Iteration 350: 0.63787 error Iteration 360: is 0.63771 error Iteration 370: is 0.63758 error Iteration 0.63747 380: is error Iteration 390: is 0.63737 error

Iteration 400: is 0.63729 error Iteration 410: is 0.63723 error Iteration is 420: 0.63717 error Iteration 430: is 0.63712 error Iteration is 0.63708 error 440: Iteration 450: is 0.63704 error Iteration 0.63701 460: is error Iteration 0.63699 is 470: error Iteration 0.63696 is 480: error Iteration is 0.63694 490: error Iteration 500: 0.63693 is error Iteration 510: error is 0.63691 Iteration 520: is 0.6369 error Iteration 530: 0.63688 error is Iteration 540: is 0.63687 error Iteration 550: is 0.63687 error is Iteration 560: 0.63686 error Iteration 570: is 0.63685 error Iteration 580: is 0.63684 error Iteration 590: is 0.63684 error Iteration 600: is 0.63683 error

Iteration 610: is 0.63683 error Iteration is 0.63682 620: error Iteration is 630: 0.63682 error Iteration 0.63682 640: error is Iteration 650: error 0.63681 is Iteration 0.63681 660: is error Iteration 0.63681 670: is error Iteration 0.63681 680: is error Iteration 0.6368 690: is error Iteration 0.6368 700: error is Iteration 0.6368 710: is error Iteration error is 0.6368 720: Iteration error is 730: 0.6368 Iteration 740: error is 0.6368 Iteration 750: is 0.6368 error Iteration 760: is 0.6368 error Iteration is 770: 0.6368 error Iteration 780: is 0.63679 error Iteration 790: is 0.63679 error Iteration 0.63679 is 800: error Iteration error is 810: 0.63679

Iteration 820: error is 0.63679 is 0.63679 Iteration 830: error error is 0.63679 Iteration 840: Iteration 850: error is 0.63679 error is Iteration 860: 0.63679 Iteration 870: error is 0.63679 Iteration 880: error is 0.63679 Iteration 890: error is 0.63679 Iteration 900: error is 0.63679 Iteration 910: error is 0.63679 Iteration 920: error is 0.63679 Iteration 930: error is 0.63679 Iteration 940: error is 0.63679 Iteration 950: error is 0.63679 Iteration 960: error is 0.63679 Iteration 970: error is 0.63679 error is 0.63679 Iteration 980: Iteration 990: error is 0.63679 Iteration 1000: error is 0.63679 J new = 0.7961J new = 0.7676

J new = 0.7508

 $J_{new} = 0.7407$

 $J_{new} = 0.7397$

 $J_{new} = 0.7401$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.044

Iteration 20: error is 37.2852

Iteration 30: error is 36.9023

Iteration 40: error is 36.9713

Iteration 50: error is 37.3291

Iteration 60: error is 37.3776

Iteration 70: error is 37.3758

Iteration 80: error is 37.0007

Iteration 90: error is 37.5231

Iteration 100: error is 2.2548

Iteration 110: error is 1.1105

Iteration 120: error is 0.77691

Iteration 130: error is 0.70694

Iteration 140: error is 0.68543

Iteration 150: is 0.67439 error is Iteration 160: 0.6676 error is Iteration 170: 0.66289 error Iteration 180: 0.6593 is error 0.65646 Iteration error 190: is Iteration 200: 0.65432 is error Iteration 0.65252 210: is error Iteration 0.65091 is 220: error Iteration is 0.64968 230: error Iteration 0.64861 240: is error Iteration 250: 0.6477 is error Iteration error is 0.64629 260: Iteration 270: is 0.64499 error Iteration is 0.64369 280: error Iteration is 0.64291 290: error Iteration is 300: 0.64231 error is Iteration 310: 0.64182 error Iteration 320: is 0.64142 error Iteration 330: is 0.64111 error Iteration 0.64086 340: is error Iteration 350: is 0.64067 error

Iteration 360: is 0.6405 error is 0.64035 Iteration 370: error Iteration 0.64024 380: is error Iteration 390: is 0.64014 error Iteration error 400: is 0.64006 Iteration 410: is 0.63999 error Iteration 0.63993 420: is error Iteration 0.63988 is 430: error Iteration 440: 0.63983 is error Iteration 450: is 0.63979 error Iteration 460: 0.63976 is error Iteration error is 0.63973 470: Iteration 480: is 0.63971 error Iteration is 0.63968 490: error Iteration 500: is 0.63966 error Iteration 510: is 0.63965 error Iteration 520: is 0.63963 error Iteration 530: is 0.63962 error Iteration 540: is 0.63961 error Iteration 550: 0.63959 is error Iteration 560: is 0.63958 error

Iteration 570: is 0.63953 error 0.63952 Iteration 580: is error Iteration 0.63951 is 590: error Iteration 600: is 0.63951 error 610: Iteration is 0.6395 error Iteration 620: is 0.6395 error Iteration 0.63949 630: is error Iteration 0.63949 is 640: error Iteration 0.63949 650: is error Iteration 0.63948 660: error is Iteration 0.63948 670: is error Iteration error is 0.63948 680: Iteration 0.63947 690: is error Iteration is 700: 0.63947 error Iteration is 0.63947 710: error Iteration 0.63947 720: is error Iteration is 0.63947 730: error Iteration 740: is 0.63947 error Iteration 0.63947 750: is error Iteration 760: 0.63946 is error Iteration 770: is 0.63946 error

Iteration is 0.63946 780: error Iteration 790: is 0.63946 error Iteration is 800: 0.63946 error Iteration 810: 0.63946 is error Iteration 0.63946 error 820: is Iteration 830: 0.63946 is error Iteration 0.63946 840: is error Iteration is 0.63946 850: error Iteration 0.63946 860: is error Iteration 0.63946 870: error is Iteration 0.63946 880: is error Iteration 0.63946 890: is error Iteration 900: is 0.63946 error Iteration is 910: 0.63946 error Iteration 920: is 0.63946 error Iteration 930: is 0.63946 error Iteration is 940: 0.63946 error Iteration 950: is 0.63946 error Iteration 960: is 0.63946 error Iteration 0.63946 is 970: error Iteration 980: is 0.63946 error

Iteration 990: error is 0.63946

Iteration 1000: error is 0.63946

 $J_{new} = 0.8423$

J new = 0.8267

J new = 0.8148

J new = 0.8116

J new = 0.8100

J new = 0.8058

J new = 0.8009

 $J_{new} = 0.7855$

J new = 0.7434

J new = 0.7420

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9613

Iteration 20: error is 37.0512

Iteration 30: error is 36.9439

Iteration 40: error is 36.3122

Iteration 50: error is 37.2449

Iteration is 37.2423 60: error is Iteration 70: 37.3571 error is Iteration 37,183 80: error Iteration 90: error is 36.6816 Iteration 100: is 2.3995 error Iteration 1,4243 110: is error Iteration 0.91498 120: is error Iteration error is 0.83367 130: Iteration 0.79048 140: is error Iteration 150: 0.72422 error is Iteration 160: 0.67128 error is Iteration error is 0.65964 170: error is Iteration 180: 0.65607 Iteration 190: error is 0.6532 Iteration is 200: 0.65115 error Iteration 210: is 0.64949 error Iteration is 220: 0.64816 error Iteration 230: is 0.64699 error Iteration 240: is 0.64599 error Iteration 250: 0.64517 is error Iteration 260: error is 0.64381

Iteration is 0.64237 270: error 0.64128 Iteration 280: is error Iteration is 290: 0.64045 error Iteration 300: is 0.63981 error Iteration 0.63934 error 310: is Iteration 320: is 0.63896 error Iteration 0.63864 330: is error Iteration 0.63839 is 340: error Iteration 0.63819 350: is error Iteration 360: 0.63801 is error Iteration 370: 0.63787 is error 0.63774 Iteration 380: error is 0.63764 Iteration 390: is error Iteration 0.63755 400: error is Iteration is 0.63748 410: error Iteration 420: is 0.63741 error Iteration is 0.63736 430: error Iteration is 0.63731 440: error Iteration 450: is 0.63726 error Iteration 460: 0.63722 is error Iteration 470: is 0.63719 error

Iteration is 0.63716 480: error Iteration 490: is 0.63713 error Iteration 0.63711 is 500: error Iteration 510: is 0.63709 error 520: Iteration 0.63707 error is Iteration 530: is 0.63705 error Iteration 540: 0.63704 is error Iteration 550: is 0.63702 error 560: Iteration 0.63701 is error Iteration 570: error is 0.637 Iteration 580: 0.63699 is error Iteration 590: error is 0.63698 Iteration 0.63697 600: is error Iteration is 0.63697 610: error Iteration is 620: 0.63696 error Iteration is 630: 0.63696 error Iteration is 640: 0.63695 error Iteration 650: is 0.63695 error Iteration 660: is 0.63694 error Iteration 670: is 0.63694 error Iteration 680: is 0.63693 error

Iteration is 0.63693 690: error 700: Iteration is 0.63693 error Iteration is 710: 0.63692 error Iteration 0.63692 720: error is Iteration 0.63692 error 730: is Iteration 0.63692 740: is error Iteration 0.63692 750: is error Iteration 0.63691 760: is error Iteration 0.63691 770: is error Iteration 0.63691 780: error is Iteration 0.63691 790: is error Iteration error is 0.63691 800: Iteration 0.63691 810: is error Iteration is 0.63691 820: error Iteration 830: is 0.63691 error Iteration is 840: 0.63691 error is Iteration 850: 0.6369 error Iteration 860: is 0.6369 error Iteration 870: is 0.6369 error Iteration is 0.6369 880: error Iteration is 890: 0.6369 error

```
Iteration 900: error is 0.6369
```

J new =
$$0.8514$$

J new =
$$0.8279$$

J new =
$$0.8161$$

J new =
$$0.8148$$

J new =
$$0.8143$$

J new =
$$0.8107$$

$$J \text{ new} = 0.8088$$

$$J \text{ new} = 0.8052$$

$$J \text{ new} = 0.8032$$

J new =
$$0.7896$$

J new = 0.7820

J new = 0.7418

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.0769

Iteration 20: error is 36.8821

Iteration 30: error is 36.7211

Iteration 40: error is 37.1192

Iteration 50: error is 36.8081

Iteration 60: error is 37.2307

Iteration 70: error is 36.5909

Iteration 80: error is 37.1964

Iteration 90: error is 37.4676

Iteration 100: error is 2.197

Iteration 110: error is 1.0871

Iteration 120: error is 0.81819

Iteration 130: error is 0.73957

Iteration 140: error is 0.68749

Iteration 150: error is 0.66553

Iteration is 0.65905 160: error is 0.65407 Iteration 170: error Iteration 0.65038 180: is error Iteration 0.64744 190: is error Iteration is 0.64515 error 200: Iteration 210: 0.64347 is error Iteration 0.64179 220: is error Iteration is 0.64051 230: error Iteration 0.6394 240: is error Iteration 250: 0.63844 is error Iteration 0.63698 260: is error Iteration error is 0.63541 270: Iteration 0.63423 280: is error Iteration is 0.63335 290: error Iteration 300: is 0.63268 error Iteration 310: is 0.63215 error is Iteration 320: 0.63177 error Iteration 330: is 0.63144 error Iteration 340: is 0.63118 error Iteration 350: 0.63097 is error Iteration 360: is 0.63079 error

Iteration 370: is 0.63065 error Iteration 380: is 0.63053 error Iteration 0.63042 is 390: error Iteration 400: 0.63034 is error 0.63027 Iteration 410: error is Iteration 420: 0.63021 is error Iteration 0.63015 430: is error Iteration is 0.63011 440: error Iteration 0.63007 450: is error Iteration 0.63003 460: error is Iteration 470: is 0.63 error Iteration error is 480: 0.62997 0.62995 Iteration 490: is error Iteration 500: is 0.62992 error Iteration 510: is 0.6299 error Iteration 520: is 0.62989 error Iteration 530: is 0.62987 error Iteration 540: is 0.62986 error Iteration 550: is 0.62985 error Iteration 560: 0.62984 is error Iteration 570: is 0.62983 error

Iteration is 0.62982 580: error Iteration 590: is 0.62982 error Iteration is 600: 0.62981 error Iteration 610: is 0.6298 error Iteration 0.6298 620: error is Iteration 630: 0.62979 is error Iteration 0.62979 640: is error Iteration 650: is 0.62979 error Iteration 660: is 0.62978 error Iteration 0.62978 670: error is Iteration 0.62978 680: is error Iteration error is 690: 0.62977 Iteration 700: is 0.62977 error Iteration 0.62977 710: is error Iteration is 0.62977 720: error Iteration 730: is 0.62977 error Iteration 740: is 0.62977 error Iteration 750: is 0.62976 error Iteration 760: is 0.62976 error Iteration 0.62976 770: is error Iteration 780: is 0.62976 error

Iteration is 0.62976 790: error Iteration 800: is 0.62976 error Iteration 0.62976 is 810: error Iteration 820: 0.62976 is error 830: Iteration 0.62976 error is Iteration 840: 0.62976 is error Iteration 850: 0.62976 is error Iteration 860: is 0.62976 error Iteration 870: is 0.62976 error Iteration 0.62976 880: error is Iteration 0.62976 890: is error Iteration 900: is 0.62976 error Iteration 910: is 0.62976 error Iteration is 0.62975 920: error Iteration is 930: 0.62975 error Iteration 940: is 0.62975 error Iteration is 950: 0.62975 error Iteration 960: is 0.62975 error Iteration 0.62975 970: is error Iteration 0.62975 980: is error Iteration 990: is 0.62975 error

Iteration 1000: error is 0.62975 J new = 0.8416J new = 0.8263J new = 0.8146J new = 0.8116J new = 0.8100J new = 0.8058J new = 0.8009J new = 0.7855J new = 0.7434J new = 0.7420J new = 0.7426Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 40.0457 Iteration 20: error is 37.3998 Iteration 30: error is 37.1825 Iteration 40: error is 37.0605 Iteration 50: error is 37.2708 Iteration 60: error is 37.0419

Iteration 70: is 37.2445 error is Iteration 80: 37,3601 error Iteration 90: is 37.5471 error Iteration 100: error İS 2.2614 Iteration is 110: error 1.2836 Iteration 120: 0.81852 is error Iteration 130: 0.70513 is error Iteration error is 140: 0.68181 Iteration 150: is 0.67123 error Iteration 160: error is 0.66447 Iteration 170: 0.65933 error is Iteration error is 180: 0.65571 error is Iteration 190: 0.6535 Iteration 200: error is 0.65065 Iteration 210: is 0.64884 error Iteration is 220: 0.64736 error Iteration is 0.64612 230: error Iteration 240: is 0.64508 error Iteration 250: is 0.64415 error Iteration 260: 0.64271 is error Iteration 270: error is 0.64115

Iteration is 0.64001 280: error 0.63919 Iteration 290: is error is Iteration 300: 0.63856 error Iteration 310: 0.63807 error is Iteration 0.63769 error 320: is Iteration 330: is 0.63739 error Iteration 0.63714 340: is error Iteration 0.63694 350: is error Iteration 360: 0.63678 is error Iteration 0.63664 370: error is Iteration 380: 0.63652 is error Iteration error is 0.63643 390: Iteration 400: is 0.63634 error Iteration is 0.63628 410: error Iteration is 420: 0.63621 error Iteration 430: is 0.63616 error Iteration is 440: 0.63612 error Iteration 450: 0.63608 is error Iteration 460: is 0.63605 error Iteration 470: is 0.63602 error Iteration 480: is 0.63599 error

Iteration is 0.63597 490: error 0.63595 Iteration 500: is error Iteration 0.63593 is 510: error Iteration 520: is 0.63591 error 530: Iteration is 0.6359 error Iteration 540: is 0.63589 error Iteration 550: 0.63588 is error Iteration 0.63587 560: is error Iteration 0.63586 570: is error Iteration 580: 0.63585 error is Iteration 0.63584 590: is error Iteration 0.63583 600: is error Iteration 0.63583 610: is error Iteration is 0.63582 620: error Iteration is 630: 0.63582 error Iteration 640: is 0.63582 error Iteration is 650: 0.63581 error Iteration 660: 0.63581 is error Iteration 670: is 0.6358 error Iteration 680: is 0.6358 error Iteration 690: is 0.6358 error

Iteration 700: is 0.6358 error Iteration 0.6358 710: is error Iteration 0.63579 is 720: error Iteration 730: is 0.63579 error Iteration is 0.63579 error 740: Iteration 750: error is 0.63579 Iteration 760: 0.63579 is error Iteration is 0.63579 770: error Iteration 0.63579 780: is error Iteration 0.63578 790: error is Iteration 0.63578 800: is error Iteration error is 810: 0.63578 Iteration 0.63578 820: is error Iteration is 0.63578 830: error Iteration is 0.63578 840: error Iteration 850: is 0.63578 error Iteration is 860: 0.63578 error Iteration 870: is 0.63578 error Iteration 880: is 0.63578 error Iteration 0.63578 890: is error Iteration 900: is 0.63578 error

```
Iteration 910: error is 0.63578
```

J new =
$$0.8693$$

J new =
$$0.8358$$

J new =
$$0.8233$$

$$J new = 0.8142$$

J new =
$$0.8108$$

J new =
$$0.8088$$

J new =
$$0.8052$$

$$J \text{ new} = 0.8031$$

J new =
$$0.7896$$

J new =
$$0.7820$$

J new =
$$0.7418$$

J new = 0.7425Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.2299 Iteration 20: error is 37.1384 Iteration 30: error is 36.8842 Iteration 40: error is 36.7533 Iteration 50: error is 37.0079 Iteration 60: error is 36.7442 Iteration 70: error is 36.6901 Iteration 80: error is 36.8998 Iteration 90: error is 37.4389 Iteration 100: error is 2.117 Iteration 110: error is 1.095 Iteration 120: error is 0.8363 Iteration 130: error is 0.7183 Iteration 140: error is 0.68598 Iteration 150: error is 0.67529 Iteration 160: error is 0.66817 Iteration 170: error is 0.66329

Iteration is 0.65958 180: error is 0.65669 Iteration 190: error is Iteration 0.65446 200: error Iteration 210: is 0.65266 error 0.65109 Iteration error 220: is Iteration 230: is 0.64977 error Iteration 0.64869 240: is error Iteration 0.64775 is 250: error Iteration is 0.6463 260: error Iteration is 0.64472 270: error Iteration 0.64362 280: is error Iteration error is 0.64281 290: Iteration 0.64219 300: is error Iteration 310: error is 0.64173 Iteration 320: is 0.64136 error Iteration 330: is 0.64105 error is Iteration 340: 0.64082 error Iteration 350: is 0.64062 error Iteration 360: is 0.64047 error Iteration 0.64033 is 370: error Iteration 380: is 0.64022 error

Iteration is 0.64013 390: error 400: Iteration is 0.64005 error Iteration is 410: 0.63998 error Iteration 420: is 0.63992 error Iteration is 0.63987 430: error Iteration 440: error is 0.63983 Iteration 450: 0.63979 error is Iteration 460: is 0.63976 error Iteration 0.63973 470: is error Iteration is 0.63971 480: error Iteration 0.63969 490: is error Iteration 500: error is 0.63967 Iteration 510: 0.63965 is error Iteration 520: 0.63964 error is Iteration 530: is 0.63963 error Iteration 540: is 0.63962 error Iteration 550: is 0.63961 error Iteration 560: is 0.6396 error Iteration 570: 0.63959 is error Iteration 580: 0.63958 is error Iteration 590: is 0.63958 error

Iteration is 0.63957 600: error Iteration 0.63957 610: is error Iteration is 620: 0.63956 error Iteration 630: is 0.63956 error 640: Iteration is 0.63956 error Iteration is 0.63955 650: error Iteration 660: 0.63955 error is Iteration 670: 0.63955 is error Iteration 0.63955 680: is error Iteration is 0.63954 690: error Iteration 0.63954 700: is error Iteration error is 0.63954 710: Iteration 720: 0.63954 is error Iteration is 0.63954 730: error Iteration is 0.63954 740: error Iteration 750: is 0.63954 error Iteration 0.63954 760: is error Iteration 770: is 0.63953 error Iteration 0.63953 780: is error Iteration 0.63953 790: is error Iteration 800: is 0.63953 error

Iteration 810: error is 0.63953 is 0.63953 Iteration 820: error Iteration 830: error is 0.63953 Iteration 840: error is 0.63953 Iteration 850: error is 0.63953 Iteration 860: error is 0.63953 Iteration 870: error is 0.63953 Iteration 880: error is 0.63953 Iteration 890: error is 0.63953 Iteration 900: error is 0.63953 Iteration 910: error is 0.63953 Iteration 920: error is 0.63953 Iteration 930: error is 0.63953 Iteration 940: error is 0.63953 error is 0.63953 Iteration 950: Iteration 960: error is 0.63953 Iteration 970: error is 0.63953 Iteration 980: error is 0.63953 Iteration 990: error is 0.63953 Iteration 1000: error is 0.63953 J new = 0.8429

- J new = 0.8271
- $J_{new} = 0.8166$
- $J_{new} = 0.8150$
- J new = 0.8145
- J new = 0.8108
- J new = 0.8088
- J new = 0.8052
- J new = 0.8031
- J new = 0.7896
- J new = 0.7820
- J new = 0.7418
- J new = 0.7425
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 40.3063
- Iteration 20: error is 36.6862
- Iteration 30: error is 37.0244
- Iteration 40: error is 36.9222
- Iteration 50: error is 36.9102
- Iteration 60: error is 36.9089

Iteration 70: is 37.1668 error is 37.636 Iteration 80: error Iteration 90: is 37.6127 error Iteration 100: error İS 2.2423 Iteration is 1,2087 110: error Iteration 120: 0.82911 is error Iteration 130: 0.76046 is error Iteration 140: is 0.6816 error Iteration is 0.66893 150: error Iteration 160: error is 0.66129 Iteration 170: 0.65635 error is Iteration error is 0.65247 180: error is Iteration 190: 0.64973 Iteration 200: error is 0.64751 Iteration 210: is 0.64565 error Iteration 220: is 0.64416 error Iteration is 0.64307 230: error Iteration 240: is 0.64194 error Iteration 250: is 0.64103 error Iteration 260: 0.63964 is error Iteration 270: error is 0.63816

Iteration is 0.63707 280: error Iteration 290: is 0.63622 error Iteration is 300: 0.63557 error Iteration 310: 0.63505 is error 0.63467 Iteration error 320: is Iteration 330: 0.63437 is error Iteration 0.63411 340: is error Iteration 350: is 0.63391 error Iteration 360: 0.63374 is error Iteration 0.63361 370: error is Iteration 380: 0.6335 is error Iteration error is 0.6334 390: Iteration 400: 0.63332 is error Iteration 0.63325 410: error is Iteration 420: is 0.63319 error Iteration 430: is 0.63314 error Iteration is 0.63309 440: error Iteration 450: is 0.63306 error Iteration 460: is 0.63302 error Iteration 470: is 0.63299 error Iteration 480: error is 0.63297

Iteration is 0.63295 490: error Iteration 500: is 0.63293 error Iteration is 510: 0.63291 error Iteration 520: is 0.6329 error 530: 0.63288 Iteration error is Iteration 540: is 0.63287 error Iteration 550: 0.63286 is error Iteration 0.63285 560: is error Iteration 0.63285 570: is error Iteration 580: 0.63284 error is Iteration 0.63283 590: is error Iteration error is 0.63283 600: Iteration 0.63282 610: is error Iteration is 620: 0.63282 error Iteration is 630: 0.63281 error Iteration is 640: 0.63281 error Iteration is 650: 0.63281 error Iteration 660: 0.63281 is error Iteration 670: is 0.6328 error Iteration 680: is 0.6328 error Iteration is 690: 0.6328 error

Iteration 700: is 0.6328 error Iteration 710: is 0.6328 error Iteration is 720: 0.63279 error Iteration 730: is 0.63279 error Iteration is 0.63279 error 740: Iteration 750: error is 0.63279 Iteration 760: 0.63279 is error Iteration 0.63279 is 770: error Iteration 0.63279 780: is error Iteration 0.63279 790: error is Iteration 0.63279 800: is error 0.63279 Iteration error is 810: Iteration 820: is 0.63279 error Iteration 0.63279 830: error is Iteration is 0.63279 840: error Iteration 850: is 0.63279 error is Iteration 860: 0.63279 error Iteration 870: is 0.63279 error Iteration 880: is 0.63279 error Iteration 0.63279 890: is error Iteration 900: is 0.63279 error

```
Iteration 910: error is 0.63279
Iteration 920: error is 0.63278
Iteration 930: error is 0.63278
Iteration 940: error is 0.63278
Iteration 950: error is 0.63278
Iteration 960: error is 0.63278
Iteration 970: error is 0.63278
Iteration 980: error is 0.63278
Iteration 990: error is 0.63278
Iteration 1000: error is 0.63278
J new = 0.8689
J \text{ new} = 0.8388
J new = 0.8218
J \text{ new} = 0.8099
J \text{ new} = 0.8060
J new = 0.8011
J new = 0.7854
J new = 0.7430
J new = 0.7416
J new = 0.7423
Mean value of sigma: 0.16017
```

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 40.0725 Iteration 20: error is 37.4635 Iteration 30: error is 37.3699 Iteration 40: error is 36.6991 Iteration 50: error is 36.884 Iteration 60: error is 36.9212 Iteration 70: error is 36.905 Iteration 80: error is 37.2185 Iteration 90: error is 37.3731 Iteration 100: error is 2.2393 Iteration 110: error is 1.2014 Iteration 120: error is 0.81819 Iteration 130: error is 0.72749 Iteration 140: error is 0.68419 Iteration 150: error is 0.66698 Iteration 160: error is 0.66062 Iteration 170: error is 0.6557 Iteration 180: error is 0.652 Iteration 190: error is 0.64908

Iteration is 0.64683 200: error is 0.64509 Iteration 210: error Iteration is 220: 0.64347 error Iteration 230: is 0.64215 error Iteration 0.64107 error 240: is Iteration 250: 0.64014 is error Iteration 260: 0.63861 is error Iteration 0.63703 is 270: error Iteration 0.63581 280: is error Iteration 0.63487 290: is error Iteration 0.63419 300: is error Iteration 310: error is 0.63368 Iteration 320: 0.63328 is error Iteration 330: is 0.63297 error Iteration 340: is 0.63271 error Iteration 350: is 0.63249 error is Iteration 360: 0.63232 error Iteration 370: is 0.63217 error Iteration 380: is 0.63205 error Iteration 0.63194 is 390: error Iteration 400: is 0.63185 error

Iteration 410: is 0.63177 error 0.6317 Iteration 420: is error Iteration is 430: 0.63164 error Iteration 0.63159 is 440: error 0.63155 Iteration is 450: error Iteration 460: is 0.63151 error Iteration 0.63147 470: is error Iteration 0.63144 is 480: error Iteration 0.63141 is 490: error Iteration 0.63139 500: is error Iteration 510: 0.63137 is error Iteration 520: error is 0.63135 Iteration 530: 0.63133 is error Iteration 540: is 0.63132 error Iteration 550: is 0.63131 error Iteration 560: 0.63129 is error Iteration is 570: 0.63128 error Iteration 580: is 0.63127 error Iteration 590: is 0.63127 error Iteration 600: 0.63126 is error Iteration 610: is 0.63125 error

Iteration 620: is 0.63124 error 0.63124 Iteration 630: is error Iteration 640: is 0.63123 error Iteration 650: 0.63123 error is Iteration 660: 0.63122 error is Iteration 670: error 0.63122 is Iteration 0.63122 680: is error Iteration is 0.63121 690: error Iteration 0.63121 700: is error Iteration 0.63121 710: error is Iteration 0.63121 720: is error Iteration error is 0.63121 730: Iteration error is 740: 0.6312 Iteration 750: error is 0.6312 Iteration is 760: 0.6312 error Iteration 770: is 0.6312 error Iteration is 780: 0.6312 error Iteration 790: 0.6312 is error Iteration 800: is 0.63119 error Iteration 0.63119 is 810: error Iteration error is 820: 0.63119

```
Iteration 830:
               error is 0.63119
Iteration 840:
               error is 0.63119
               error is 0.63119
Iteration 850:
Iteration 860:
               error is 0.63119
Iteration 870:
               error is 0.63119
Iteration 880:
               error is 0.63119
Iteration 890:
               error is 0.63119
Iteration 900:
               error is 0.63119
Iteration 910:
               error is 0.63119
Iteration 920:
               error is 0.63119
Iteration 930:
               error is 0.63119
Iteration 940:
               error is 0.63119
Iteration 950:
               error is 0.63119
Iteration 960:
               error is 0.63119
Iteration 970:
               error is 0.63119
Iteration 980:
               error is 0.63119
               error is 0.63119
Iteration 990:
Iteration 1000: error is 0.63118
J new = 0.8324
J new = 0.8189
J \text{ new} = 0.8146
```

J new = 0.8126

J new = 0.8094

J new = 0.8069

J new = 0.8004

J new = 0.7865

J new = 0.7426

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.8127

Iteration 20: error is 36.1601

Iteration 30: error is 36.0184

Iteration 40: error is 36.899

Iteration 50: error is 36.5609

Iteration 60: error is 37.1529

Iteration 70: error is 36.8295

Iteration 80: error is 36.7258

Iteration 90: error is 37.1488

Iteration 100: error is 2.0237

Iteration 110: error is 1.2771

Iteration 120: is 0.822 error Iteration 130: is 0.74095 error Iteration is 140: 0.68696 error Iteration 150: 0.67031 error is Iteration 160: error is 0.664 Iteration 0.65942 170: is error Iteration 180: 0.65578 is error Iteration 0.6531 is 190: error Iteration 0.65091 200: is error Iteration is 0.64919 210: error Iteration 0.64773 220: is error Iteration error is 0.64652 230: Iteration error is 0.64559 240: Iteration 250: error is 0.6446 Iteration is 260: 0.64323 error Iteration is 270: 0.6418 error Iteration is 0.64075 280: error Iteration 290: is 0.63999 error Iteration 300: is 0.6394 error Iteration 0.63893 is 310: error Iteration error is 320: 0.63856

Iteration 330: is 0.63829 error is Iteration 340: 0.63806 error is Iteration 350: 0.63786 error Iteration 360: is 0.6377 error Iteration 370: is 0.63758 error Iteration 380: is 0.63746 error Iteration 0.63737 390: is error Iteration 0.6373 is 400: error Iteration 0.63723 410: is error Iteration 420: 0.63717 error is Iteration 0.63713 430: is error Iteration error is 0.63708 440: Iteration 0.63705 450: is error Iteration is 460: 0.63701 error Iteration is 0.63699 470: error Iteration is 480: 0.63696 error Iteration is 490: 0.63694 error Iteration 500: 0.63692 is error Iteration 510: is 0.63691 error Iteration 520: is 0.63689 error Iteration is 530: 0.63688 error

Iteration 540: is 0.63687 error 550: is Iteration 0.63686 error is Iteration 560: 0.63685 error Iteration 570: 0.63684 is error 580: Iteration error 0.63684 is Iteration 0.63683 590: is error Iteration 0.63682 600: is error Iteration 0.63682 610: is error Iteration 0.63681 620: is error Iteration 630: 0.63681 error is Iteration 0.63681 640: is error Iteration error is 0.6368 650: Iteration 660: is 0.6368 error Iteration is 670: 0.6368 error Iteration 680: is 0.6368 error Iteration is 690: 0.63679 error Iteration is 700: 0.63679 error Iteration 710: is 0.63679 error Iteration 720: is 0.63679 error Iteration 730: 0.63679 is error Iteration 740: is 0.63679 error

Iteration is 0.63679 750: error Iteration 760: is 0.63679 error Iteration is 770: 0.63679 error Iteration 0.63678 780: is error 0.63678 Iteration error 790: is Iteration 800: 0.63678 is error Iteration 0.63678 810: is error Iteration is 0.63678 820: error Iteration 0.63678 830: is error Iteration 0.63678 840: is error Iteration 850: 0.63678 is error Iteration error is 0.63678 860: Iteration 0.63678 870: is error Iteration is 0.63678 880: error Iteration is 0.63678 890: error Iteration is 900: 0.63678 error Iteration is 910: 0.63678 error Iteration 920: 0.63678 is error Iteration 930: is 0.63678 error Iteration 940: is 0.63678 error Iteration 950: is 0.63678 error

Iteration 960: error is 0.63678

Iteration 970: error is 0.63678

Iteration 980: error is 0.63678

Iteration 990: error is 0.63678

Iteration 1000: error is 0.63678

J new = 0.8346

 $J_{new} = 0.8192$

J new = 0.8171

J new = 0.8162

J new = 0.8139

J new = 0.8119

J new = 0.8083

J new = 0.8064

J new = 0.8026

J new = 0.7908

J new = 0.7815

J new = 0.7429

J new = 0.7420

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312 Iteration 10: error is 39.5344 is 36.6532 Iteration 20: error Iteration 30: error is 36.6515 Iteration 40: error is 36.8431 Iteration 50: error is 36.5851 Iteration 60: error is 36.9775 Iteration 70: error is 37.4402 Iteration 80: error is 37.3687 Iteration 90: error is 37.0607 error is 2.1836 Iteration 100: Iteration 110: error is 0.98028 Iteration 120: error is 0.74921 Iteration 130: error is 0.70049 error is 0.68262 Iteration 140: Iteration 150: error is 0.67238 Iteration 160: error is 0.6654 Iteration 170: error is 0.66062 Iteration 180: error is 0.65682 Iteration 190: error is 0.654 Iteration 200: error is 0.65177

Iteration is 0.64995 210: error 0.64852 Iteration 220: is error Iteration is 230: 0.64735 error Iteration 240: 0.64628 is error 250: 0.6454 Iteration error is Iteration 260: 0.6441 is error Iteration 0.64267 270: is error Iteration 0.64154 is 280: error Iteration 0.64073 is 290: error Iteration is 0.64013 300: error Iteration 310: 0.63967 is error Iteration error is 0.63929 320: Iteration 330: 0.63901 is error Iteration 340: is 0.63877 error Iteration 350: is 0.63856 error Iteration 360: is 0.6384 error is Iteration 370: 0.63827 error Iteration 380: 0.63815 is error Iteration 390: is 0.63806 error Iteration is 0.63798 400: error Iteration 410: is 0.63792 error

Iteration 420: is 0.63786 error Iteration 430: is 0.63781 error Iteration is 440: 0.63777 error Iteration 450: 0.63773 error is Iteration is 460: error 0.6377 Iteration 470: 0.63767 is error Iteration 0.63765 480: is error Iteration 0.63763 is 490: error Iteration 0.63761 500: is error Iteration 510: 0.63759 error is Iteration 520: 0.63758 is error Iteration error is 0.63757 530: 0.63756 Iteration 540: is error Iteration 550: is 0.63755 error Iteration is 560: 0.63754 error Iteration 570: is 0.63753 error Iteration is 580: 0.63753 error Iteration 590: is 0.63752 error Iteration 600: is 0.63752 error Iteration 610: 0.63751 is error Iteration 620: is 0.63751 error

Iteration is 0.6375 630: error Iteration 640: is 0.6375 error Iteration is 650: 0.6375 error Iteration 660: is 0.6375 error Iteration is 0.63749 error 670: Iteration 680: error is 0.63749 Iteration 0.63749 690: is error Iteration 0.63749 is 700: error Iteration 0.63749 710: is error Iteration is 0.63749 720: error Iteration 730: 0.63748 is error Iteration error is 0.63748 740: Iteration 0.63748 750: is error Iteration 760: error is 0.63748 Iteration is 0.63748 770: error Iteration 780: is 0.63748 error Iteration is 790: 0.63748 error Iteration 800: is 0.63748 error Iteration 810: is 0.63748 error Iteration 0.63748 820: is error Iteration 830: is 0.63748 error

Iteration 840: error is 0.63748 Iteration 850: error is 0.63748 error is 0.63748 Iteration 860: Iteration 870: error is 0.63748 Iteration 880: error is 0.63748 Iteration 890: error is 0.63748 Iteration 900: error is 0.63748 Iteration 910: error is 0.63748 Iteration 920: error is 0.63748 Iteration 930: error is 0.63748 Iteration 940: error is 0.63748 Iteration 950: error is 0.63748 Iteration 960: error is 0.63748 Iteration 970: error is 0.63748 error is 0.63748 Iteration 980: Iteration 990: error is 0.63748 Iteration 1000: error is 0.63748 J new = 0.8459J new = 0.8294J new = 0.8188J new = 0.8162

J new = 0.8166Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.1785 Iteration 20: error is 37.0989 Iteration 30: error is 37.0646 Iteration 40: error is 36.9653 Iteration 50: error is 37.0603 Iteration 60: error is 37.5136 Iteration 70: error is 37.5363 Iteration 80: error is 37.5086 Iteration 90: error is 37.8399 error is 2.1363 Iteration 100: Iteration 110: error is 1.1956 Iteration 120: error is 0.78194 Iteration 130: error is 0.71672 Iteration 140: error is 0.68139 Iteration 150: error is 0.66988 Iteration 160: error is 0.66422 Iteration 170: error is 0.65947

Iteration is 0.65618 180: error is 0.65337 Iteration 190: error Iteration is 200: 0.65122 error Iteration 210: 0.64944 is error Iteration 0.64791 error 220: is Iteration 230: 0.64645 is error Iteration 0.64364 240: is error Iteration is 0.64274 250: error Iteration is 0.6413 260: error Iteration 0.63974 270: error is Iteration 0.63864 280: is error Iteration error is 0.63785 290: Iteration 0.63726 300: is error Iteration 310: is 0.63678 error Iteration 320: is 0.63642 error Iteration 330: is 0.63613 error is 0.63589 Iteration 340: error Iteration 350: is 0.63569 error Iteration 360: is 0.63553 error Iteration 370: is 0.6354 error Iteration 380: is 0.63528 error

Iteration is 0.63519 390: error 400: Iteration is 0.63511 error Iteration is 410: 0.63504 error Iteration 420: is 0.63498 error 0.63493 Iteration 430: error is Iteration 440: 0.63488 is error Iteration 0.63484 450: is error Iteration 460: is 0.63481 error Iteration 0.63478 470: is error Iteration 0.63475 480: error is Iteration 0.63473 490: is error Iteration error is 500: 0.63471 0.63469 Iteration 510: is error Iteration 520: is 0.63467 error Iteration 530: is 0.63466 error Iteration 540: is 0.63465 error Iteration is 550: 0.63464 error Iteration 560: 0.63463 is error Iteration 570: is 0.63462 error Iteration 580: is 0.63461 error Iteration 0.63461 590: is error

Iteration is 0.6346 600: error Iteration 0.63459 610: is error Iteration 0.63459 is 620: error Iteration 630: is 0.63458 error 0.63458 Iteration error 640: is Iteration 650: error 0.63458 is Iteration 660: 0.63457 is error Iteration is 0.63457 670: error Iteration 0.63457 680: is error Iteration 0.63457 690: error is Iteration 0.63457 700: is error Iteration error is 0.63456 710: Iteration 720: 0.63456 is error Iteration is 0.63456 730: error Iteration is 0.63456 740: error Iteration 750: is 0.63456 error Iteration is 0.63456 760: error Iteration 770: is 0.63456 error Iteration 780: is 0.63456 error Iteration 0.63455 790: is error Iteration 800: error is 0.63455

Iteration 810: error is 0.63455 Iteration 820: is 0.63455 error Iteration 830: error is 0.63455 Iteration 840: error is 0.63455 Iteration 850: error is 0.63455 Iteration 860: error is 0.63455 Iteration 870: error is 0.63455 Iteration 880: error is 0.63455 Iteration 890: error is 0.63455 Iteration 900: error is 0.63455 Iteration 910: error is 0.63455 Iteration 920: error is 0.63455 Iteration 930: 0.63455 error is Iteration 940: error is 0.63455 error is 0.63455 Iteration 950: Iteration 960: error is 0.63455 Iteration 970: error is 0.63455 Iteration 980: error is 0.63455 Iteration 990: error is 0.63455 Iteration 1000: error is 0.63455 J new = 0.8486

- J new = 0.8265
- J new = 0.8147
- $J_{new} = 0.8115$
- J new = 0.8101
- J new = 0.8057
- J new = 0.8010
- J new = 0.7854
- J new = 0.7435
- J new = 0.7419
- J new = 0.7428
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 38.671
- Iteration 20: error is 36.9636
- Iteration 30: error is 36.454
- Iteration 40: error is 36.8364
- Iteration 50: error is 37.1997
- Iteration 60: error is 37.2005
- Iteration 70: error is 37.2284
- Iteration 80: error is 37.005

Iteration 90: error is 37.0916 100: Iteration is 2.2722 error is Iteration 110: 1.2857 error Iteration 120: 0.96325 is error 130: Iteration 0.80245 error is Iteration 140: error 0.73453 is Iteration 150: 0.70946 is error Iteration 0.69853 160: is error Iteration 0.69437 170: is error Iteration 0.69104 180: is error Iteration 0.68853 190: is error Iteration 200: error is 0.68666 Iteration 210: is 0.68508 error Iteration is 220: 0.68369 error Iteration is 0.68259 230: error Iteration is 240: 0.68152 error Iteration is 250: 0.68071 error Iteration 260: 0.67948 is error Iteration 270: is 0.67823 error Iteration is 0.67724 280: error Iteration 290: error is 0.67201

Iteration 300: is 0.65285 error 0.64444 Iteration 310: is error Iteration 320: is 0.64224 error Iteration 330: 0.64121 is error Iteration error 340: is 0.6406 Iteration 350: error 0.6401 is Iteration 0.63985 360: is error Iteration 0.63965 370: is error Iteration 0.63947 380: is error Iteration 0.63931 390: error is Iteration 0.63918 400: is error Iteration error is 0.63906 410: Iteration 420: 0.63896 is error Iteration is 430: 0.63887 error Iteration is 440: 0.6388 error Iteration is 450: 0.63874 error Iteration is 460: 0.63869 error Iteration 470: 0.63864 is error Iteration 480: is 0.6386 error Iteration 490: 0.63856 is error Iteration 500: is 0.63853 error

Iteration 510: is 0.63851 error 0.63848 Iteration 520: is error is Iteration 530: 0.63846 error Iteration 540: 0.63844 is error Iteration 550: 0.63843 is error Iteration 560: 0.63841 is error Iteration 570: is 0.6384 error Iteration 0.63839 580: is error Iteration 0.63838 590: is error Iteration 600: 0.63837 error is Iteration 610: 0.63836 is error Iteration error is 0.63836 620: Iteration 630: 0.63835 is error Iteration is 0.63834 640: error Iteration is 0.63834 650: error Iteration 660: 0.63833 is error Iteration is 0.63833 670: error Iteration 680: is 0.63833 error Iteration 0.63832 690: is error Iteration 700: 0.63832 is error Iteration 710: is 0.63832 error

Iteration is 0.63832 720: error Iteration 0.63831 730: is error Iteration is 740: 0.63831 error Iteration 0.63831 750: error is 760: Iteration 0.63831 error is Iteration 0.63831 770: is error Iteration 0.63831 780: is error Iteration is 0.6383 790: error Iteration is 0.6383 800: error Iteration 0.6383 810: error is Iteration 0.6383 820: is error Iteration error is 0.6383 830: Iteration 840: is 0.6383 error Iteration is 850: 0.6383 error Iteration is 860: 0.6383 error Iteration 870: is 0.6383 error is Iteration 880: 0.6383 error Iteration 890: is 0.6383 error Iteration 900: is 0.6383 error Iteration is 0.6383 910: error Iteration is 920: 0.6383 error

Iteration 930: error is 0.6383

Iteration 940: error is 0.6383

Iteration 950: error is 0.6383

Iteration 960: error is 0.63829

Iteration 970: error is 0.63829

Iteration 980: error is 0.63829

Iteration 990: error is 0.63829

Iteration 1000: error is 0.63829

 $J_{new} = 0.8468$

J new = 0.8329

J new = 0.8238

J new = 0.8217

 $J_{new} = 0.8228$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.6529

Iteration 20: error is 36.8493

Iteration 30: error is 36.9484

Iteration 40: error is 37.6785

Iteration 50: error is 37.3785

Iteration is 37.184 60: error is 37.5954 Iteration 70: error is Iteration 37,4321 80: error Iteration 90: error is 37.7045 Iteration 100: is 2.3193 error Iteration 110: 1.1669 is error Iteration 0.86169 120: is error Iteration error is 0.72219 130: Iteration 140: 0.72025 is error Iteration 150: 0.68362 error is Iteration 160: 0.66154 error is Iteration error is 0.6569 170: error is Iteration 180: 0.65361 Iteration 0.65036 190: error is Iteration is 200: 0.64805 error Iteration is 210: 0.64631 error Iteration is 0.64483 220: error Iteration 230: 0.64363 is error Iteration 240: is 0.64268 error Iteration 250: 0.64166 is error Iteration 260: error is 0.64023

Iteration is 0.63875 270: error 0.63757 Iteration 280: is error Iteration is 290: 0.63664 error Iteration 300: 0.63583 is error Iteration 0.63532 error 310: is Iteration 320: is 0.63492 error Iteration 0.63462 330: is error Iteration is 0.63432 340: error Iteration 350: 0.63318 is error Iteration 360: 0.63213 is error Iteration 370: 0.63163 error is Iteration 380: error is 0.63135 Iteration 390: 0.6312 is error Iteration 400: error is 0.6311 Iteration 410: is 0.63102 error Iteration is 420: 0.63095 error Iteration is 430: 0.63088 error Iteration 0.63083 440: is error Iteration 450: is 0.63079 error Iteration 460: 0.63075 is error Iteration error is 470: 0.63071

Iteration is 0.63068 480: error is Iteration 490: 0.63066 error is Iteration 500: 0.63064 error Iteration 510: 0.63062 is error 520: Iteration error is 0.6306 Iteration 530: is 0.63058 error Iteration 540: 0.63057 is error Iteration 0.63056 550: is error 560: Iteration 0.63055 is error Iteration 570: is 0.63054 error Iteration 580: 0.63053 is error Iteration 590: error is 0.63052 Iteration 0.63052 600: is error Iteration 0.63051 610: error is Iteration is 620: 0.63051 error Iteration is 630: 0.6305 error Iteration is 640: 0.6305 error Iteration 650: is 0.63049 error Iteration 660: is 0.63049 error Iteration 670: 0.63049 is error Iteration 680: is 0.63049 error

Iteration is 0.63048 690: error 700: Iteration is 0.63048 error Iteration is 710: 0.63048 error Iteration 720: 0.63048 is error Iteration 730: error is 0.63048 Iteration error 0.63047 740: is Iteration 0.63047 750: is error Iteration 760: is error 0.63047 Iteration 0.63047 770: is error Iteration 0.63047 780: error is Iteration 0.63047 790: is error Iteration error is 0.63047 800: Iteration 810: is 0.63047 error Iteration is 820: 0.63047 error Iteration 830: is 0.63047 error Iteration is 840: 0.63047 error is Iteration 850: 0.63047 error Iteration 860: is 0.63047 error Iteration 870: is 0.63047 error Iteration is 0.63046 880: error Iteration 890: is 0.63046 error

```
Iteration 900: error is 0.63046
```

Iteration 910: error is 0.63046

Iteration 920: error is 0.63046

Iteration 930: error is 0.63046

Iteration 940: error is 0.63046

Iteration 950: error is 0.63046

Iteration 960: error is 0.63046

Iteration 970: error is 0.63046

Iteration 980: error is 0.63046

Iteration 990: error is 0.63046

Iteration 1000: error is 0.63046

J new = 0.8091

J new = 0.7974

J new = 0.7740

J new = 0.7542

J new = 0.7457

J new = 0.7393

J new = 0.7386

J new = 0.7396

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312 Iteration 10: error is 38.7344 is 37.0594 Iteration 20: error Iteration 30: error is 36.785 Iteration 40: error is 36.7658 Iteration 50: error is 37.298 Iteration 60: error is 37.361 Iteration 70: error is 37.3699 Iteration 80: error is 37.5414 Iteration 90: error is 37.3151 error is 2.2833 Iteration 100: Iteration 110: error is 1.1606 Iteration 120: error is 0.83473 Iteration 130: error is 0.71549 Iteration 140: error is 0.69997 Iteration 150: error is 0.67847 Iteration 160: error is 0.67277 Iteration 170: error is 0.66849 Iteration 180: error is 0.66525 Iteration 190: error is 0.66267 Iteration 200: error is 0.66076

Iteration is 0.65906 210: error is Iteration 220: 0.65772 error Iteration is 230: 0.65659 error Iteration 0.65557 240: is error Iteration 250: is 0.6547 error Iteration 0.65337 260: is error Iteration 0.65185 270: is error Iteration 0.65083 is 280: error Iteration 0.64958 is 290: error Iteration 0.64864 300: is error Iteration 310: 0.64816 is error Iteration error is 0.6478 320: Iteration 330: 0.64752 is error Iteration 340: is 0.64727 error Iteration 350: is 0.64705 error Iteration 360: is 0.64688 error is Iteration 370: 0.64673 error Iteration 380: 0.64661 is error Iteration 390: is 0.64651 error Iteration 400: 0.64642 is error Iteration 0.64635 410: is error

Iteration 420: is 0.64628 error 0.64623 Iteration 430: is error Iteration is 440: 0.64618 error Iteration 0.64614 450: is error Iteration 460: 0.64611 is error Iteration 470: is 0.64608 error Iteration 0.64605 480: is error Iteration 0.64603 is 490: error Iteration 0.64601 500: is error Iteration 510: is 0.64599 error Iteration 520: 0.64597 is error Iteration 530: error is 0.64596 Iteration 540: 0.64595 is error Iteration 550: error is 0.64594 Iteration 560: is 0.64593 error Iteration 570: is 0.64592 error Iteration 580: is 0.64591 error Iteration 590: is 0.64591 error Iteration 0.6459 600: is error Iteration 610: 0.64589 is error Iteration 620: is 0.64589 error

Iteration is 0.64589 630: error 0.64588 Iteration 640: is error Iteration is 650: 0.64588 error Iteration 0.64588 660: error is Iteration 0.64587 error 670: is Iteration 680: error 0.64587 is Iteration 0.64587 690: is error Iteration 0.64587 is 700: error Iteration 0.64587 710: is error Iteration 0.64586 720: is error 730: Iteration 0.64586 is error Iteration 0.64586 740: is error Iteration 0.64586 750: is error Iteration is 0.64586 760: error Iteration is 0.64586 770: error Iteration is 0.64586 780: error Iteration is 0.64586 790: error Iteration 800: 0.64586 is error Iteration 810: is 0.64586 error Iteration 0.64586 is 820: error Iteration 830: is 0.64586 error

```
Iteration 840:
               error is 0.64586
Iteration 850:
               error is 0.64585
               error is 0.64585
Iteration 860:
Iteration 870:
               error is 0.64585
Iteration 880:
               error is 0.64585
Iteration 890:
               error is 0.64585
Iteration 900:
               error is 0.64585
Iteration 910:
               error is 0.64585
Iteration 920:
               error is 0.64585
Iteration 930:
               error is 0.64585
Iteration 940:
               error is 0.64585
Iteration 950: error is 0.64585
Iteration 960:
               error is 0.64585
Iteration 970: error is 0.64585
Iteration 980: error is 0.64585
Iteration 990: error is 0.64585
Iteration 1000: error is 0.64585
J new = 0.8372
J \text{ new} = 0.8192
J new = 0.8171
J new = 0.8161
```

- J new = 0.8139
- J new = 0.8119
- J new = 0.8083
- J new = 0.8064
- J new = 0.8026
- J new = 0.7908
- J new = 0.7815
- J new = 0.7429
- J new = 0.7420
- $J_{new} = 0.7426$
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 40.099
- Iteration 20: error is 38.1897
- Iteration 30: error is 37.1084
- Iteration 40: error is 36.9637
- Iteration 50: error is 37.5701
- Iteration 60: error is 37.3491
- Iteration 70: error is 36.7932
- Iteration 80: error is 37.4949

Iteration 90: error is 37.5706 100: Iteration is 2.2601 error is Iteration 1.1809 110: error Iteration 120: 0.79624 is error 130: Iteration 0.69692 error is Iteration 140: error 0.68058 is Iteration 150: 0.67116 is error Iteration 0.66443 160: is error Iteration 0.65965 170: is error Iteration 0.65607 180: error is Iteration 0.65332 error is 190: Iteration 200: error is 0.65116 Iteration 210: is 0.64937 error Iteration 0.64793 220: error is Iteration is 0.64677 230: error Iteration is 240: 0.64568 error Iteration is 250: 0.64475 error Iteration 260: is 0.64335 error Iteration 270: is 0.64186 error Iteration 0.64079 is 280: error Iteration 290: error is 0.63993

Iteration 300: is 0.63932 error Iteration 310: is 0.63883 error Iteration 320: is 0.63843 error Iteration 330: 0.63811 is error Iteration 340: 0.63785 error is Iteration 350: error 0.63764 is Iteration 360: 0.63747 is error Iteration 0.63733 370: is error Iteration 0.63722 380: is error Iteration 0.63712 390: error is Iteration 0.63703 400: is error Iteration error is 0.63696 410: Iteration 420: is 0.6369 error Iteration 0.63685 430: error is Iteration is 440: 0.6368 error Iteration is 450: 0.63676 error Iteration is 460: 0.63673 error Iteration 470: is 0.6367 error Iteration 480: is 0.63667 error Iteration 490: is 0.63665 error Iteration 500: error is 0.63663

Iteration 510: is 0.63661 error is Iteration 520: 0.6366 error is Iteration 530: 0.63659 error Iteration 540: 0.63657 is error Iteration 550: 0.63656 error is Iteration 560: 0.63655 is error Iteration 0.63655 570: is error Iteration 0.63654 580: is error Iteration 0.63653 590: is error Iteration 600: 0.63653 is error Iteration 610: 0.63652 is error Iteration error is 0.63652 620: Iteration 0.63651 630: is error Iteration is 0.63651 640: error Iteration is 0.63651 650: error Iteration 660: is 0.6365 error Iteration is 670: 0.6365 error Iteration 680: is 0.6365 error Iteration 690: is 0.6365 error Iteration 0.63649 is 700: error Iteration 710: is 0.63649 error

Iteration is 0.63649 720: error Iteration 730: is 0.63649 error Iteration is 740: 0.63649 error Iteration 0.63649 750: error is Iteration 760: error 0.63649 is Iteration 770: 0.63649 is error Iteration 0.63648 780: is error Iteration is 0.63648 790: error Iteration 0.63648 800: is error Iteration 0.63648 810: error is Iteration 0.63648 820: is error Iteration error is 0.63648 830: Iteration 840: is 0.63648 error Iteration is 0.63648 850: error Iteration is 860: 0.63648 error Iteration is 870: 0.63648 error is Iteration 880: 0.63648 error Iteration 890: is 0.63648 error Iteration 900: is 0.63648 error Iteration is 0.63648 910: error Iteration 920: is 0.63648 error

Iteration 930: error is 0.63648

Iteration 940: error is 0.63648

Iteration 950: error is 0.63648

Iteration 960: error is 0.63648

Iteration 970: error is 0.63648

Iteration 980: error is 0.63648

Iteration 990: error is 0.63648

Iteration 1000: error is 0.63648

J new = 0.8898

J new = 0.8738

J new = 0.8500

J new = 0.8326

J new = 0.8245

J new = 0.8240

J new = 0.8239

J new = 0.8226

J new = 0.8234

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.4051

Iteration 20: is 37.2066 error 30: is Iteration 36.7215 error is Iteration 40: error 37.2066 Iteration 50: is 37.7491 error Iteration 60: is 38.0151 error Iteration is 37.5547 70: error Iteration 80: 37,7486 is error Iteration is 90: 37.75 error Iteration is 100: 2.4012 error Iteration 110: is 1,4425 error Iteration 120: 0.99148 is error Iteration 130: error is 0.84039 error is Iteration 140: 0.77529 Iteration 150: error is 0.73863 Iteration 160: is 0.67425 error Iteration 170: is 0.66346 error is Iteration 180: 0.65892 error Iteration 190: is 0.65591 error Iteration 0.65366 200: is error Iteration 0.65185 210: is error Iteration 220: error is 0.65043

Iteration is 0.64914 230: error Iteration 240: is 0.64818 error Iteration is 250: 0.64722 error Iteration 0.64583 260: error is Iteration error 0.6443 270: is Iteration 0.64321 280: error is Iteration 290: is 0.6424 error Iteration is 0.64178 300: error Iteration 310: is 0.64129 error Iteration is 0.64091 320: error Iteration 330: 0.64061 error is Iteration 340: error is 0.64037 Iteration 350: error is 0.64017 Iteration 360: error is 0.64 Iteration 370: is 0.63986 error Iteration 380: is 0.63974 error Iteration 390: is 0.63964 error Iteration 400: is 0.63956 error Iteration 410: is 0.6395 error Iteration 420: 0.63943 is error Iteration 430: error is 0.63938

Iteration 440: is 0.63933 error Iteration 450: is 0.63929 error Iteration 460: is 0.63926 error Iteration 470: 0.63923 error is Iteration 0.6392 error 480: is Iteration 490: error 0.63918 is Iteration 0.63916 500: is error Iteration 510: is 0.63914 error Iteration 0.63912 520: is error Iteration 530: 0.63911 error is Iteration 540: 0.63909 is error Iteration 0.63908 550: is error 560: Iteration is 0.63907 error Iteration is 570: 0.63906 error Iteration 580: is 0.63906 error Iteration 590: is 0.63905 error Iteration is 600: 0.63904 error Iteration 610: 0.63904 is error Iteration 620: is 0.63903 error Iteration 630: 0.63903 is error Iteration 640: is 0.63902 error

Iteration 650: is 0.63902 error Iteration 660: is 0.63902 error Iteration is 670: 0.63901 error Iteration 680: 0.63901 error is 0.63901 Iteration 690: error is Iteration 700: error 0.639 is Iteration 710: is 0.639 error Iteration 0.639 is 720: error Iteration is 0.639 730: error Iteration 740: error is 0.639 Iteration 750: is 0.639 error Iteration error is 0.63899 760: 0.63899 Iteration 770: is error Iteration 780: error is 0.63899 Iteration is 0.63899 790: error Iteration 800: is 0.63899 error Iteration 0.63899 810: is error Iteration 820: is 0.63899 error Iteration 830: is 0.63899 error Iteration 0.63899 840: is error Iteration 850: error is 0.63899

```
Iteration 860: error is 0.63899
Iteration 870:
               error is 0.63899
               error is 0.63899
Iteration 880:
Iteration 890:
               error is 0.63898
Iteration 900:
               error is 0.63898
Iteration 910:
               error is 0.63898
Iteration 920:
               error is 0.63898
Iteration 930:
               error is 0.63898
Iteration 940: error is 0.63898
Iteration 950:
               error is 0.63898
Iteration 960: error is 0.63898
Iteration 970: error is 0.63898
Iteration 980: error is 0.63898
Iteration 990: error is 0.63898
Iteration 1000: error is 0.63898
J new = 0.8431
J new = 0.8276
J new = 0.8180
J new = 0.8160
J new = 0.8158
J new = 0.8134
```

- J new = 0.8117
- J new = 0.8079
- J new = 0.8061
- J new = 0.8022
- J new = 0.7905
- J new = 0.7811
- J new = 0.7427
- J new = 0.7416
- J new = 0.7424
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.0418
- Iteration 20: error is 37.1782
- Iteration 30: error is 36.8972
- Iteration 40: error is 37.4132
- Iteration 50: error is 37.0167
- Iteration 60: error is 37.1655
- Iteration 70: error is 37.243
- Iteration 80: error is 37.77
- Iteration 90: error is 37.6078

Iteration is 100: 2.2541 error is Iteration 110: 1,4263 error Iteration is 120: 0.92412 error Iteration 130: is 0.77345 error 140: Iteration 0.72946 error is Iteration 0.70332 150: is error Iteration 160: 0.68085 is error Iteration 170: is 0.67157 error Iteration 0.66806 180: is error Iteration 0.66523 190: is error Iteration 0.66312 200: is error Iteration error is 0.6613 210: Iteration is 220: 0.65991 error Iteration 230: error is 0.6586 Iteration is 0.65757 240: error Iteration is 250: 0.65669 error Iteration is 260: 0.65523 error Iteration 270: is 0.6537 error Iteration 280: is 0.65256 error Iteration 0.6517 is 290: error Iteration 300: is 0.65106 error

Iteration 310: is 0.65057 error 0.65016 Iteration 320: is error Iteration 330: is 0.64984 error Iteration 340: 0.64957 is error Iteration 350: 0.64935 error is Iteration 360: error 0.64917 is Iteration 0.64902 370: is error Iteration is 0.64889 380: error Iteration 0.64878 is 390: error Iteration is 0.64869 400: error Iteration is 0.6486 410: error Iteration 420: error is 0.64853 Iteration 430: is 0.64847 error Iteration 440: error is 0.64841 Iteration is 0.64836 450: error Iteration 460: is 0.64832 error Iteration is 0.64828 470: error Iteration 480: is 0.64825 error Iteration 490: is 0.64822 error Iteration 500: 0.64819 is error Iteration 510: is 0.64816 error

Iteration 520: is 0.64814 error Iteration 530: is 0.64812 error Iteration 540: is 0.6481 error Iteration 550: 0.64808 is error Iteration 560: error is 0.64806 Iteration 570: 0.64805 is error Iteration 580: 0.64803 is error Iteration is 0.64802 590: error Iteration 0.64801 600: is error Iteration 610: error is 0.648 Iteration 620: 0.64799 is error Iteration error is 0.64798 630: 0.64797 Iteration 640: is error Iteration 650: is 0.64796 error Iteration is 0.64795 660: error Iteration 670: is 0.64795 error Iteration is 0.64794 680: error Iteration 690: is 0.64793 error Iteration 0.64793 700: is error Iteration 0.64792 710: is error Iteration 720: is 0.64792 error

Iteration is 0.64791 730: error Iteration 740: is 0.64791 error Iteration is 750: 0.6479 error Iteration 760: 0.6479 is error Iteration error 770: is 0.6479 Iteration 780: 0.64789 is error Iteration 0.64789 790: error is Iteration 0.64789 is 800: error Iteration 0.64788 810: is error Iteration 0.64788 820: is error Iteration 0.64788 830: is error Iteration error is 0.64788 840: Iteration 850: is 0.64787 error Iteration 860: is 0.64787 error Iteration is 0.64787 870: error Iteration 880: is 0.64787 error is Iteration 890: 0.64786 error Iteration 0.64786 900: is error Iteration 910: is 0.64786 error Iteration 0.64786 is 920: error Iteration 930: is 0.64786 error

Iteration 940: error is 0.64786

Iteration 950: error is 0.64785

Iteration 960: error is 0.64785

Iteration 970: error is 0.64785

Iteration 980: error is 0.64785

Iteration 990: error is 0.64785

Iteration 1000: error is 0.64785

J new = 0.8331

J new = 0.8174

J new = 0.8140

J new = 0.8122

J new = 0.8088

J new = 0.8064

J new = 0.7997

J new = 0.7860

J new = 0.7422

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9118

Iteration 20: is 36.9312 error 30: is Iteration 37,2443 error Iteration is 37.1057 40: error Iteration 50: is 37.148 error 60: Iteration is 37.0857 error Iteration 70: is 37.5898 error Iteration 80: error is 37,4517 Iteration error is 90: 37.5601 Iteration 100: is 2,1456 error Iteration 110: error is 1.3633 Iteration 120: 0.89527 error is Iteration 130: error is 0.76854 error is Iteration 140: 0.72765 Iteration 150: 0.67636 error is Iteration 160: is 0.66633 error Iteration 170: is 0.66168 error is Iteration 180: 0.65837 error Iteration 190: is 0.65587 error Iteration 0.65382 200: is error Iteration 0.65211 is 210: error Iteration 220: error is 0.65073

Iteration is 0.64959 230: error is 0.64865 Iteration 240: error Iteration is 250: 0.64783 error Iteration 0.64655 260: error is 0.6452 Iteration error 270: is Iteration 280: 0.6442 is error Iteration 0.64345 290: is error Iteration is 0.64286 300: error Iteration 0.64242 310: is error Iteration 0.64208 320: error is Iteration 330: 0.6418 is error Iteration 340: error is 0.64158 Iteration 350: is 0.64141 error Iteration 360: is 0.64126 error Iteration 370: is 0.64114 error Iteration 380: is 0.64103 error Iteration 390: is 0.64095 error Iteration 400: 0.64087 is error Iteration 410: is 0.64081 error Iteration 420: 0.64076 is error Iteration 430: error is 0.64071

Iteration 440: is 0.64067 error Iteration 450: is 0.64064 error Iteration is 460: 0.6406 error Iteration 0.64056 470: is error Iteration error 480: is 0.6405 Iteration 490: error 0.64042 is Iteration 500: is 0.64034 error Iteration 510: is 0.64032 error Iteration 520: is 0.6403 error Iteration 530: error is 0.64029 Iteration 540: 0.64028 is error Iteration 550: error is 0.64027 Iteration 560: is 0.64026 error Iteration 570: error is 0.64026 Iteration 580: is 0.64025 error Iteration 590: is 0.64024 error Iteration is 600: 0.64024 error Iteration 610: is 0.64023 error Iteration 620: is 0.64023 error Iteration 630: 0.64022 is error Iteration 640: error is 0.64022

Iteration 650: is 0.64022 error Iteration 660: is 0.64021 error Iteration is 670: 0.64021 error Iteration 680: 0.64021 İS error Iteration 690: error is 0.64021 Iteration 700: error 0.64021 is Iteration 710: is 0.6402 error Iteration is 0.6402 720: error Iteration 0.6402 730: is error Iteration 740: error is 0.6402 Iteration 750: 0.6402 error is Iteration error is 760: 0.6402 Iteration error is 770: 0.6402 Iteration 780: error is 0.6402 Iteration is 0.6402 790: error Iteration is 800: 0.6402 error is Iteration 810: 0.64019 error Iteration 820: is 0.64019 error Iteration 830: is 0.64019 error Iteration 0.64019 is 840: error Iteration 850: error is 0.64019

```
Iteration 860: error is 0.64019
Iteration 870:
               error is 0.64019
               error is 0.64019
Iteration 880:
Iteration 890: error is 0.64019
Iteration 900:
               error is 0.64019
Iteration 910:
               error is 0.64019
Iteration 920:
               error is 0.64019
Iteration 930: error is 0.64019
Iteration 940: error is 0.64019
Iteration 950: error is 0.64019
Iteration 960: error is 0.64019
Iteration 970: error is 0.64019
Iteration 980: error is 0.64019
Iteration 990: error is 0.64019
Iteration 1000: error is 0.64019
J new = 0.8431
J new = 0.8272
J new = 0.8170
J new = 0.8154
J new = 0.8148
J \text{ new} = 0.8112
```

J new = 0.8090

J new = 0.8056

 $J_{new} = 0.8034$

J new = 0.7900

J new = 0.7823

J new = 0.7422

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.8651

Iteration 20: error is 37.0572

Iteration 30: error is 36.9058

Iteration 40: error is 36.739

Iteration 50: error is 36.8609

Iteration 60: error is 36.9843

Iteration 70: error is 36.4582

Iteration 80: error is 36.617

Iteration 90: error is 36.6478

Iteration 100: error is 2.2117

Iteration 110: error is 1.2289

Iteration is 0.77205 120: error Iteration 130: is 0.72284 error Iteration 140: is 0.70596 error Iteration 0.68494 150: is error Iteration 160: 0.67009 error is Iteration 170: 0.66434 is error Iteration 180: 0.66011 is error Iteration 0.6571 is 190: error Iteration 0.65431 200: is error Iteration 0.65234 210: is error Iteration 0.65063 220: is error Iteration error is 0.64928 230: Iteration 0.64812 240: is error Iteration 250: error is 0.64713 Iteration is 260: 0.64568 error Iteration is 270: 0.6439 error Iteration is 0.64276 280: error Iteration 290: is 0.64194 error Iteration 300: is 0.64131 error Iteration 0.64081 is 310: error Iteration error is 320: 0.64043

Iteration 330: is 0.64012 error 0.63987 Iteration 340: is error Iteration 350: is 0.63967 error Iteration 360: 0.6395 is error Iteration 370: is 0.63937 error Iteration 380: error is 0.63925 Iteration 0.63916 390: is error Iteration is 0.63907 400: error Iteration is 410: 0.639 error Iteration 420: is 0.63894 error Iteration 430: 0.63889 is error Iteration error is 0.63884 440: Iteration 0.63881 450: is error Iteration is 0.63877 460: error Iteration is 0.63874 470: error Iteration is 480: 0.63872 error Iteration is 490: 0.6387 error Iteration 500: is 0.63868 error Iteration 510: is 0.63866 error Iteration 520: is 0.63864 error Iteration error is 530: 0.63863

Iteration 540: is 0.63862 error 550: Iteration is 0.63861 error is Iteration 560: 0.6386 error Iteration 570: is 0.6386 error 580: Iteration is 0.63859 error Iteration 590: error is 0.63858 Iteration 600: 0.63858 is error Iteration 0.63857 610: is error Iteration 0.63857 620: is error Iteration 630: 0.63856 error is Iteration 0.63855 640: is error Iteration error is 0.63852 650: Iteration 0.63851 660: is error Iteration is 0.63851 670: error Iteration is 680: 0.6385 error Iteration 690: is 0.6385 error Iteration is 700: 0.6385 error Iteration 710: is 0.63849 error Iteration 720: is 0.63849 error Iteration 730: 0.63849 is error Iteration 740: is 0.63849 error

Iteration is 0.63849 750: error Iteration 760: is 0.63848 error Iteration 770: is 0.63848 error Iteration 780: 0.63848 error is Iteration error 0.63848 790: is Iteration 800: 0.63848 is error Iteration 0.63848 810: is error Iteration is 0.63848 820: error Iteration 0.63848 830: is error Iteration 0.63848 840: is error Iteration 850: 0.63848 is error Iteration 0.63848 860: is error Iteration 870: is 0.63848 error Iteration is 880: 0.63848 error Iteration is 0.63847 890: error Iteration 900: is 0.63847 error Iteration is 910: 0.63847 error Iteration 920: is 0.63847 error Iteration 930: is 0.63847 error Iteration 940: 0.63847 is error Iteration 950: is 0.63847 error

```
Iteration 960: error is 0.63847
Iteration 970: error is 0.63847
Iteration 980: error is 0.63847
Iteration 990: error is 0.63847
Iteration 1000: error is 0.63847
J new = 0.8540
J new = 0.8286
J new = 0.8184
J new = 0.8164
J new = 0.8160
J \text{ new} = 0.8138
J new = 0.8119
J \text{ new} = 0.8083
J \text{ new} = 0.8064
J new = 0.8026
J new = 0.7908
J new = 0.7815
J new = 0.7429
J new = 0.7420
```

Mean value of sigma: 0.16017

J new = 0.7426

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 38.5709 Iteration 20: error is 36.8363 Iteration 30: error is 36.8701 Iteration 40: error is 37.0065 Iteration 50: error is 37.5598 Iteration 60: error is 37.1529 Iteration 70: error is 37.3826 Iteration 80: error is 37.5491 Iteration 90: error is 37.1911 Iteration 100: error is 2.1331 Iteration 110: error is 1.2846 Iteration 120: error is 0.87898 Iteration 130: error is 0.7194 Iteration 140: error is 0.68153 Iteration 150: error is 0.66611 Iteration 160: error is 0.65935 Iteration 170: error is 0.65414 Iteration 180: error is 0.65006 Iteration 190: error is 0.64687

Iteration is 0.64458 200: error 0.64265 Iteration 210: is error Iteration is 220: 0.64103 error Iteration 230: 0.63966 error is Iteration 0.63856 error 240: is Iteration 250: 0.63769 is error Iteration 260: 0.63626 is error Iteration 0.63476 is 270: error Iteration 0.63368 280: is error Iteration 0.63291 290: is error Iteration 0.63231 300: is error Iteration 310: error is 0.63185 Iteration 320: is 0.63148 error Iteration 330: is 0.63118 error Iteration 340: is 0.63094 error Iteration 350: is 0.63075 error is Iteration 360: 0.6306 error Iteration 370: is 0.63047 error Iteration 380: is 0.63036 error Iteration 0.63027 is 390: error Iteration 400: is 0.63019 error

Iteration 410: is 0.63013 error Iteration 420: is 0.63007 error Iteration is 430: 0.63002 error Iteration is 0.62998 440: error Iteration 0.62995 450: error is Iteration 460: 0.62991 is error Iteration 0.62989 470: is error Iteration 0.62987 is 480: error Iteration 0.62985 is 490: error Iteration 0.62983 500: error is Iteration 510: 0.62981 is error Iteration error is 520: 0.6298 Iteration 530: is 0.62979 error Iteration 540: 0.62978 is error Iteration 550: is 0.62977 error Iteration 560: is 0.62976 error Iteration is 570: 0.62976 error Iteration 580: is 0.62975 error 0.62974 Iteration 590: is error Iteration 600: 0.62974 is error Iteration 0.62973 610: is error

Iteration 620: is 0.62973 error Iteration 630: is 0.62973 error Iteration is 640: error 0.62972 Iteration 650: 0.62972 error is Iteration 0.62972 660: error is Iteration 670: 0.62972 is error Iteration 0.62972 680: is error Iteration is 0.62971 690: error Iteration 0.62971 700: is error Iteration 0.62971 710: error is Iteration 0.62971 error is 720: Iteration error is 730: 0.62971 Iteration 740: is 0.62971 error Iteration error is 0.62971 750: Iteration is 0.62971 760: error Iteration 770: is 0.62971 error Iteration 780: is 0.62971 error Iteration 790: 0.62971 is error Iteration 800: is 0.6297 error Iteration 0.6297 810: is error Iteration 820: error is 0.6297

Iteration 830: error is 0.6297 error is 0.6297 Iteration 840: error is 0.6297 Iteration 850: Iteration 860: error is 0.6297 error is 0.6297 Iteration 870: Iteration 880: error is 0.6297 Iteration 890: error is 0.6297 Iteration 900: error is 0.6297 Iteration 910: error is 0.6297 Iteration 920: error is 0.6297 Iteration 930: error is 0.6297 Iteration 940: error is 0.6297 Iteration 950: error is 0.6297 Iteration 960: error is 0.6297 Iteration 970: error is 0.6297 error is 0.6297 Iteration 980: error is 0.6297 Iteration 990: Iteration 1000: error is 0.6297 J new = 0.8079J new = 0.7957J new = 0.7773

 $J_{new} = 0.7616$

 $J_{new} = 0.7529$

 $J_{new} = 0.7450$

J new = 0.7449

 $J_{new} = 0.7456$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9924

Iteration 20: error is 37.3447

Iteration 30: error is 36.7011

Iteration 40: error is 36.922

Iteration 50: error is 37.5165

Iteration 60: error is 37.3932

Iteration 70: error is 37.4356

Iteration 80: error is 37.8052

Iteration 90: error is 38.1366

Iteration 100: error is 2.2795

Iteration 110: error is 1.3452

Iteration 120: error is 0.89213

Iteration 130: error is 0.78958

Iteration 140: is 0.71249 error 150: is Iteration 0.66963 error is Iteration 160: 0.6633 error 170: Iteration 0.6589 is error Iteration is 0.6557 error 180: Iteration 190: 0.65315 is error Iteration 0.65104 200: is error Iteration 0.64933 is 210: error Iteration 0.64794 220: is error Iteration is 0.64678 230: error Iteration 0.64577 240: is error Iteration error is 0.64501 250: Iteration 0.64358 260: is error Iteration is 270: 0.64214 error Iteration is 280: 0.64109 error Iteration is 290: 0.64032 error Iteration 300: is 0.6397 error Iteration 310: is 0.63921 error Iteration 320: is 0.63884 error Iteration 330: 0.63854 is error Iteration 340: is 0.6383 error

Iteration 350: is 0.63811 error Iteration 360: is 0.63794 error Iteration 370: is 0.6378 error Iteration 380: 0.63769 is error Iteration 390: is error 0.6376 Iteration 400: error 0.63752 is Iteration 0.63745 410: is error Iteration 0.63739 is 420: error Iteration 430: 0.63734 is error Iteration 0.6373 440: error is Iteration 450: 0.63726 is error Iteration error is 0.63723 460: Iteration 470: is 0.6372 error Iteration 480: error is 0.63717 Iteration is 0.63715 490: error Iteration 500: is 0.63713 error Iteration 510: is 0.63711 error Iteration 520: is 0.6371 error Iteration 530: is 0.63709 error Iteration 540: 0.63708 is error Iteration 550: error is 0.63707

Iteration 560: is 0.63706 error Iteration 570: is 0.63705 error Iteration is 580: 0.63704 error Iteration 590: 0.63704 İS error 600: Iteration error is 0.63703 Iteration 610: error 0.63703 is Iteration 0.63702 620: is error Iteration is 0.63702 630: error Iteration 0.63701 640: is error Iteration 0.63701 650: error is Iteration 0.63701 660: is error Iteration error is 0.63701 670: Iteration 680: is 0.637 error Iteration is 0.63699 690: error Iteration is 0.63699 700: error Iteration is 710: 0.63698 error Iteration is 720: 0.63698 error Iteration 730: 0.63698 is error Iteration 740: is 0.63698 error Iteration 750: is 0.63698 error Iteration 760: is 0.63698 error

Iteration is 0.63698 770: error Iteration is 780: 0.63698 error Iteration is 790: 0.63698 error Iteration 0.63697 800: is error Iteration 0.63697 error 810: is Iteration 0.63697 820: is error Iteration 0.63697 830: is error Iteration 0.63697 is 840: error Iteration 0.63697 850: is error Iteration 0.63697 860: error is Iteration 870: 0.63697 is error Iteration error is 0.63697 880: Iteration 0.63697 890: is error Iteration is 0.63697 900: error Iteration is 0.63697 910: error Iteration 920: is 0.63697 error Iteration 930: is 0.63697 error Iteration 940: is 0.63697 error Iteration 950: is 0.63697 error Iteration 960: 0.63697 is error Iteration 970: is 0.63697 error

Iteration 980: error is 0.63697

Iteration 990: error is 0.63697

Iteration 1000: error is 0.63697

J new = 0.8317

J new = 0.8183

J new = 0.8142

J new = 0.8124

J new = 0.8090

J new = 0.8067

J new = 0.7999

J new = 0.7862

J new = 0.7422

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.3667

Iteration 20: error is 37.3814

Iteration 30: error is 37.2769

Iteration 40: error is 37.1683

Iteration 50: error is 37.5463

Iteration is 37.7897 60: error is Iteration 70: 38.3422 error is Iteration 80: 38.2968 error Iteration is 37.9269 90: error Iteration 100: is 2.4464 error Iteration 110: is 1,4068 error Iteration 0.99317 120: is error Iteration error is 0.84336 130: Iteration 0.76466 140: is error Iteration 150: error is 0.68677 Iteration 160: 0.65943 error is Iteration error is 0.65528 170: Iteration 180: is 0.65237 error Iteration 0.65008 190: error is Iteration is 200: 0.64824 error Iteration 210: is 0.64668 error Iteration is 0.64533 220: error Iteration 230: 0.64416 is error Iteration 240: is 0.64328 error Iteration 250: 0.64249 is error Iteration 260: error is 0.64122

Iteration is 0.63986 270: error Iteration 280: is 0.63885 error Iteration 290: is 0.63808 error Iteration 300: 0.63751 error is 0.63707 Iteration error 310: is Iteration 320: 0.63671 is error Iteration 0.63643 330: is error Iteration is 0.6362 340: error Iteration is 0.63602 350: error Iteration 360: 0.63587 is error Iteration 0.63574 370: is error Iteration 380: error is 0.63564 Iteration 0.63555 390: is error Iteration is 400: 0.63548 error Iteration is 0.63541 410: error Iteration 420: is 0.63536 error Iteration is 0.63531 430: error Iteration is 0.63527 440: error Iteration 450: is 0.63524 error Iteration 460: 0.63521 is error Iteration 470: is 0.63518 error

Iteration is 0.63516 480: error Iteration 490: is 0.63514 error Iteration 0.63512 is 500: error Iteration 510: is 0.6351 error 520: 0.63509 Iteration error is Iteration 530: 0.63508 is error Iteration 540: 0.63507 is error Iteration 550: is 0.63506 error 560: Iteration 0.63505 is error Iteration 570: 0.63504 error is Iteration 580: 0.63504 is error Iteration error is 0.63503 590: Iteration 600: is 0.63503 error Iteration is 610: 0.63502 error Iteration is 620: 0.63502 error Iteration is 630: 0.63502 error Iteration is 640: 0.63501 error Iteration 650: 0.63501 is error Iteration 660: is 0.63501 error Iteration 670: is 0.635 error Iteration 680: is 0.635 error

Iteration is 690: 0.635 error Iteration is 700: 0.635 error Iteration is 710: 0.635 error Iteration 0.635 720: is error Iteration is 730: error 0.635 Iteration error is 0.63499 740: Iteration 0.63499 750: is error Iteration 760: is 0.63499 error Iteration 770: is 0.63499 error Iteration 0.63499 780: error is Iteration 0.63499 790: is error Iteration error is 0.63499 800: Iteration 0.63499 810: is error Iteration is 0.63499 820: error Iteration 830: is 0.63499 error Iteration 840: is 0.63499 error Iteration is 850: 0.63499 error Iteration 860: is 0.63499 error Iteration 870: is 0.63499 error Iteration 0.63499 880: is error Iteration 890: error is 0.63499

```
Iteration 900: error is 0.63499
```

J new =
$$0.8445$$

$$J new = 0.8288$$

J new =
$$0.8180$$

J new =
$$0.8162$$

J new =
$$0.8159$$

J new =
$$0.8135$$

J new =
$$0.8116$$

J new =
$$0.8079$$

$$J \text{ new} = 0.8061$$

$$J \text{ new} = 0.8022$$

 $J_{new} = 0.7905$

 $J_{new} = 0.7811$

 $J_{new} = 0.7427$

J new = 0.7416

J new = 0.7424

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 40.3972

Iteration 20: error is 37.1465

Iteration 30: error is 36.9894

Iteration 40: error is 37.5889

Iteration 50: error is 37.4417

Iteration 60: error is 37.6505

Iteration 70: error is 37.0782

Iteration 80: error is 37.1591

Iteration 90: error is 37.7285

Iteration 100: error is 2.2748

Iteration 110: error is 1.2969

Iteration 120: error is 0.90917

Iteration 130: error is 0.81615

Iteration is 0.75766 140: error 150: is 0.69252 Iteration error Iteration is 160: 0.66306 error 170: Iteration 0.65649 is error Iteration 0.65297 error 180: is Iteration 190: 0.6502 is error Iteration 0.64755 200: is error Iteration 0.64565 is 210: error Iteration 0.64413 220: is error Iteration 0.64288 230: is error Iteration 0.64178 240: is error Iteration error is 0.64089 250: Iteration 0.63939 260: is error Iteration is 0.63778 270: error Iteration is 280: 0.63662 error Iteration is 290: 0.63578 error Iteration is 0.63513 300: error Iteration 310: 0.63463 is error Iteration 320: is 0.63426 error Iteration 330: 0.63395 is error Iteration 340: is 0.63369 error

Iteration 350: is 0.63348 error Iteration 360: is 0.63331 error Iteration 370: is 0.63317 error Iteration 380: 0.63304 is error Iteration error 0.63294 390: is Iteration 400: 0.63285 is error Iteration 0.63278 410: is error Iteration is 0.63271 420: error Iteration 0.63266 430: is error Iteration 0.63261 440: error is Iteration 450: 0.63257 is error Iteration error is 0.63253 460: Iteration 470: is 0.6325 error Iteration is 480: 0.63247 error Iteration is 490: 0.63244 error Iteration is 500: 0.63242 error Iteration 510: is 0.6324 error Iteration 520: is 0.63239 error Iteration 530: is 0.63237 error Iteration 540: 0.63236 is error Iteration 0.63234 550: is error

Iteration 560: is 0.63233 error 0.63232 Iteration 570: is error Iteration 580: is 0.63232 error Iteration 590: 0.63231 error is Iteration 600: error 0.6323 is Iteration 610: error is 0.6323 Iteration 0.63229 620: is error Iteration is 0.63229 630: error Iteration 0.63228 640: is error Iteration 650: 0.63228 error is Iteration 0.63227 error is 660: 0.63227 Iteration error is 670: Iteration error is 680: 0.63227 Iteration 0.63227 690: error is Iteration is 0.63226 700: error Iteration is 710: 0.63226 error Iteration is 720: 0.63226 error Iteration 730: 0.63226 is error Iteration 740: is 0.63226 error Iteration 750: 0.63226 is error Iteration 760: is 0.63225 error

Iteration is 0.63225 770: error Iteration 780: is 0.63225 error Iteration is 790: 0.63225 error Iteration 0.63225 800: error is 0.63225 Iteration error 810: is Iteration 820: 0.63225 is error Iteration 0.63225 830: is error Iteration 0.63225 is 840: error Iteration 0.63225 850: is error Iteration 0.63225 860: error is Iteration 0.63225 870: is error Iteration error is 0.63225 880: Iteration 0.63225 890: is error Iteration is 0.63225 900: error Iteration is 0.63224 910: error Iteration 920: is 0.63224 error Iteration 930: is 0.63224 error Iteration 940: 0.63224 is error Iteration 950: is 0.63224 error Iteration 960: 0.63224 is error Iteration 970: is 0.63224 error

Iteration 980: error is 0.63224

Iteration 990: error is 0.63224

Iteration 1000: error is 0.63224

J new = 0.8345

J new = 0.8190

J new = 0.8162

J new = 0.8152

J new = 0.8109

J new = 0.8088

J new = 0.8052

J new = 0.8031

J new = 0.7896

J new = 0.7820

J new = 0.7418

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.6872

Iteration 20: error is 37.1874

Iteration 30: error is 37.2847

Iteration 40: is 36.592 error is Iteration 50: 37.0542 error is Iteration 37.4377 60: error Iteration 70: is 37.7104 error Iteration 80: is 37.4039 error Iteration 90: error is 37,2774 Iteration 2.2873 100: is error Iteration is 110: 1,026 error Iteration is 0.74959 120: error Iteration 130: error is 0.70014 Iteration 140: 0.68382 error is Iteration 150: error is 0.67353 error is Iteration 160: 0.66687 Iteration 170: error is 0.66187 Iteration 180: is 0.65812 error Iteration 190: is 0.65513 error Iteration is 0.65282 200: error Iteration 210: 0.65088 is error Iteration 220: is 0.64932 error Iteration 230: 0.64803 is error Iteration 240: error is 0.64691

Iteration is 0.64592 250: error Iteration 260: is 0.6444 error Iteration is 270: 0.64274 error Iteration 280: is 0.64154 error 0.64066 Iteration error 290: is Iteration 300: is 0.64 error Iteration 0.63948 310: is error Iteration 0.63908 is 320: error Iteration 0.63875 330: is error Iteration 340: 0.63848 is error Iteration 350: 0.63827 error is Iteration 360: error is 0.63809 Iteration 370: 0.63795 is error Iteration 380: 0.63782 error is Iteration 390: is 0.63771 error Iteration 400: is 0.63762 error Iteration is 410: 0.63754 error Iteration 420: is 0.63748 error Iteration 430: is 0.63742 error Iteration 0.63737 440: is error Iteration 450: error is 0.63733

Iteration 460: is 0.63729 error Iteration 470: is 0.63726 error Iteration 480: is 0.63723 error Iteration 490: is 0.6372 error Iteration 0.63718 error 500: is Iteration 510: error 0.63716 is Iteration 0.63714 520: is error Iteration 0.63713 is 530: error Iteration 0.63711 540: is error Iteration 550: error is 0.6371 Iteration 560: 0.63709 is error Iteration error is 0.63708 570: 0.63707 Iteration 580: is error Iteration 590: is 0.63707 error Iteration is 600: 0.63706 error Iteration is 610: 0.63705 error Iteration is 620: 0.63705 error Iteration 630: 0.63704 is error Iteration 640: is 0.63704 error Iteration 650: is 0.63704 error Iteration 660: is 0.63703 error

Iteration is 0.63703 670: error Iteration 680: is 0.63703 error Iteration 690: is 0.63702 error Iteration 700: 0.63702 is error Iteration error 710: is 0.63702 Iteration error 0.63702 720: is Iteration 0.63702 730: is error Iteration is 0.63702 740: error Iteration 750: 0.63701 is error Iteration 0.63701 760: error is Iteration 0.63701 770: is error Iteration error is 0.63701 780: Iteration 790: is 0.63701 error Iteration is 800: 0.63701 error Iteration is 810: 0.63701 error Iteration is 820: 0.63701 error is Iteration 830: 0.63701 error Iteration 840: 0.63701 is error Iteration 850: is 0.63701 error Iteration 860: is 0.63701 error Iteration 870: is 0.63701 error

```
Iteration 880: error is 0.63701
```

Iteration 890: error is 0.63701

Iteration 900: error is 0.63701

Iteration 910: error is 0.63701

Iteration 920: error is 0.63701

Iteration 930: error is 0.637

Iteration 940: error is 0.637

Iteration 950: error is 0.637

Iteration 960: error is 0.637

Iteration 970: error is 0.637

Iteration 980: error is 0.637

Iteration 990: error is 0.637

Iteration 1000: error is 0.637

 $J_{new} = 0.8440$

J new = 0.8287

J new = 0.8182

J new = 0.8165

J new = 0.8162

J new = 0.8137

J new = 0.8120

J new = 0.8081

J new = 0.8065

J new = 0.8025

J new = 0.7909

 $J_{new} = 0.7814$

J new = 0.7431

J new = 0.7419

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.6676

Iteration 20: error is 37.3248

Iteration 30: error is 36.9647

Iteration 40: error is 36.8349

Iteration 50: error is 36.725

Iteration 60: error is 36.8717

Iteration 70: error is 37.0522

Iteration 80: error is 37.5126

Iteration 90: error is 37.1538

Iteration 100: error is 2.3035

Iteration 110: error is 1.273

Iteration is 0.90283 120: error 0.79848 Iteration 130: is error Iteration is 140: 0.74969 error Iteration 150: is 0.68612 error Iteration 160: error 0.66346 is Iteration 170: is 0.6591 error Iteration 180: 0.65585 is error Iteration 0.65337 is 190: error Iteration 0.65125 is 200: error Iteration is 0.64953 210: error Iteration 0.64811 220: is error Iteration error is 0.64696 230: Iteration 0.64587 240: is error Iteration is 250: 0.64509 error Iteration is 0.64365 260: error Iteration is 270: 0.64223 error Iteration is 0.6411 280: error Iteration 290: is 0.64029 error Iteration 300: is 0.63965 error Iteration 0.63915 is 310: error Iteration 320: is 0.63876 error

Iteration 330: is 0.63842 error Iteration 340: is 0.63813 error Iteration 350: is 0.63791 error Iteration 360: is 0.63775 error Iteration 370: is error 0.6376 Iteration 380: error is 0.63748 Iteration 0.63737 390: is error Iteration 400: is 0.63728 error Iteration 410: is 0.6372 error Iteration 0.63714 420: error is Iteration 430: 0.63708 error is Iteration error is 0.63703 440: Iteration error is 0.63699 450: Iteration error is 0.63695 460: Iteration is 0.63692 470: error Iteration is 480: 0.63689 error Iteration is 490: 0.63687 error Iteration 500: is 0.63685 error Iteration 510: is 0.63683 error Iteration 520: is 0.63681 error Iteration 530: error is 0.6368

Iteration 540: is 0.63678 error Iteration 550: is 0.63677 error is Iteration 560: 0.63676 error Iteration 570: 0.63675 is error Iteration 0.63674 error 580: is Iteration 590: error 0.63674 is Iteration 600: 0.63673 is error Iteration 610: is 0.63672 error Iteration 0.63672 620: is error Iteration 630: 0.63671 error is Iteration 0.63671 640: is error Iteration error is 0.63671 650: Iteration 660: is 0.6367 error Iteration is 670: 0.6367 error Iteration 680: is 0.6367 error Iteration is 690: 0.63669 error Iteration is 700: 0.63669 error Iteration 710: is 0.63669 error Iteration 720: is 0.63669 error Iteration 730: is 0.63669 error Iteration is 740: 0.63668 error

Iteration is 0.63668 750: error is Iteration 760: 0.63668 error Iteration is 770: 0.63668 error Iteration 0.63668 780: error is Iteration error 0.63668 790: is Iteration 0.63668 800: is error Iteration 0.63668 810: is error Iteration 0.63668 is 820: error Iteration is 0.63668 830: error Iteration 0.63667 840: is error Iteration 850: 0.63667 is error Iteration error is 0.63667 860: Iteration 870: is 0.63667 error Iteration is 0.63667 880: error Iteration is 890: 0.63667 error Iteration is 900: 0.63667 error Iteration is 910: 0.63667 error Iteration 920: 0.63667 is error Iteration 930: is 0.63667 error Iteration is 0.63667 940: error Iteration is 950: 0.63667 error

Iteration 960: error is 0.63667

Iteration 970: error is 0.63667

Iteration 980: error is 0.63667

Iteration 990: error is 0.63667

Iteration 1000: error is 0.63667

J new = 0.8365

J new = 0.8187

J new = 0.8155

J new = 0.8149

J new = 0.8108

J new = 0.8088

J new = 0.8052

J new = 0.8032

J new = 0.7896

J new = 0.7820

J new = 0.7418

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.8495

Iteration 20: is 36.574 error 30: is Iteration 36,9197 error Iteration is 40: 37.0171 error Iteration 50: is 37.0223 error 60: Iteration 37.5533 is error Iteration 70: is 37,6533 error Iteration 80: is 36,9301 error Iteration is 90: 37, 3047 error Iteration 100: is 2.1108 error Iteration 110: is 1.1562 error Iteration 120: 0.88948 error is Iteration 130: error is 0.84051 0.78537 error is Iteration 140: Iteration 150: error is 0.69117 Iteration 160: is 0.66519 error Iteration 170: is 0.65828 error is Iteration 180: 0.65455 error Iteration 190: 0.65158 is error Iteration 200: is 0.64963 error Iteration 0.64803 is 210: error Iteration 220: error is 0.64672

Iteration is 0.6456 230: error 0.64487 Iteration 240: is error Iteration 0.64386 is 250: error Iteration 0.64309 260: is error 0.63955 Iteration is error 270: Iteration 280: 0.63826 is error Iteration 0.63744 290: is error Iteration 0.63689 is 300: error Iteration 0.63641 310: is error Iteration 0.63596 320: error is Iteration 330: 0.63567 is error Iteration error is 0.63544 340: Iteration 350: 0.63525 is error Iteration 360: is 0.63509 error Iteration 370: is 0.63495 error Iteration 380: is 0.63484 error Iteration is 390: 0.63475 error Iteration 400: 0.63467 is error Iteration 410: is 0.6346 error Iteration 420: 0.63454 is error Iteration 0.63449 430: is error

Iteration 440: is 0.63445 error Iteration 450: is 0.63441 error Iteration 460: is 0.63438 error Iteration 0.63435 470: error İS 0.63433 Iteration error 480: is Iteration 490: error 0.63431 is Iteration 0.63429 500: is error Iteration 510: is 0.63427 error Iteration 520: 0.63426 is error Iteration 530: 0.63425 error is Iteration 540: 0.63424 is error Iteration 550: error is 0.63423 560: 0.63422 Iteration is error Iteration is 0.63421 570: error Iteration 580: is 0.63421 error Iteration 590: is 0.6342 error Iteration is 600: 0.6342 error Iteration 610: is 0.63419 error Iteration 620: is 0.63419 error Iteration 630: 0.63418 is error Iteration 0.63418 640: is error

Iteration 650: is 0.63418 error 0.63417 Iteration 660: is error Iteration is 670: 0.63417 error Iteration 680: 0.63417 error is Iteration 0.63417 690: error is Iteration 700: error 0.63417 is Iteration 0.63417 710: is error Iteration is 0.63416 720: error Iteration 0.63416 730: is error Iteration 0.63416 740: error is Iteration 750: 0.63416 is error Iteration error is 0.63416 760: Iteration 0.63416 770: is error Iteration is 0.63416 780: error Iteration is 0.63416 790: error Iteration 800: is 0.63416 error Iteration is 810: 0.63416 error Iteration 820: 0.63416 is error Iteration 830: is 0.63415 error Iteration 0.63415 840: is error Iteration 850: error is 0.63415

```
Iteration 860: error is 0.63415
Iteration 870:
               error is 0.63415
Iteration 880:
               error is 0.63415
Iteration 890: error is 0.63415
Iteration 900:
               error is 0.63415
Iteration 910:
               error is 0.63415
Iteration 920:
               error is 0.63415
Iteration 930:
               error is 0.63415
Iteration 940: error is 0.63415
Iteration 950: error is 0.63415
Iteration 960: error is 0.63415
Iteration 970: error is 0.63415
Iteration 980: error is 0.63415
Iteration 990: error is 0.63415
Iteration 1000: error is 0.63415
J new = 0.8368
J \text{ new} = 0.8190
J new = 0.8159
J new = 0.8154
J new = 0.8111
J \text{ new} = 0.8092
```

J new = 0.8054

J new = 0.8036

J new = 0.7898

J new = 0.7825

J new = 0.7420

J new = 0.7429

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.3008

Iteration 20: error is 36.7463

Iteration 30: error is 36.9066

Iteration 40: error is 37.1682

Iteration 50: error is 37.344

Iteration 60: error is 37.6389

Iteration 70: error is 38.4718

Iteration 80: error is 37.3005

Iteration 90: error is 37.1258

Iteration 100: error is 2.2392

Iteration 110: error is 1.2075

Iteration 120: error is 0.91064

Iteration is 0.85397 130: error Iteration 140: is 0.82257 error Iteration 150: is 0.70778 error Iteration 160: is 0.6997 error 170: Iteration 0.69343 error is Iteration 180: 0.69017 is error Iteration 0.68753 190: is error Iteration 0.68543 is 200: error Iteration 0.68356 210: is error Iteration 0.68223 220: error is Iteration 0.68124 230: is error Iteration error is 0.68025 240: 0.67938 Iteration 250: is error Iteration 260: is 0.67813 error Iteration 270: is 0.67678 error Iteration 280: is 0.67582 error Iteration is 290: 0.67511 error Iteration 300: is 0.67458 error Iteration 310: is 0.67417 error Iteration 0.67386 is 320: error Iteration 330: 0.67361 is error

Iteration 340: is 0.67342 error 350: Iteration is 0.67326 error Iteration 360: error is 0.67313 Iteration 370: 0.67302 is error Iteration error 380: is 0.67294 Iteration 390: is 0.67286 error Iteration 400: error is 0.6728 Iteration is 0.67275 410: error Iteration 420: 0.67271 is error Iteration 0.67268 430: error is Iteration 440: 0.67264 is error Iteration error is 450: 0.67262 Iteration 460: is 0.6726 error Iteration 470: error is 0.67258 Iteration is 0.67256 480: error Iteration 490: is 0.67255 error Iteration is 500: 0.67254 error Iteration 510: is 0.67253 error Iteration 520: is 0.67252 error Iteration 530: 0.67251 is error Iteration 540: error is 0.6725

Iteration 550: is 0.6725 error Iteration 560: is 0.67249 error Iteration 570: error is 0.67249 Iteration 580: 0.67248 is error Iteration error 590: is 0.67248 Iteration is 600: 0.67248 error Iteration 0.67247 610: error is Iteration 0.67247 620: error is Iteration 630: 0.67247 is error Iteration 640: error is 0.67247 Iteration 0.67247 650: is error Iteration error is 660: 0.67246 Iteration 670: is 0.67246 error Iteration is 680: 0.67246 error Iteration is 690: 0.67246 error Iteration is 700: 0.67246 error Iteration 710: is 0.67246 error Iteration 720: is 0.67246 error Iteration 730: is 0.67246 error Iteration is 0.67246 740: error Iteration 750: is 0.67246 error

Iteration 760: is 0.67246 error Iteration 770: is 0.67246 error Iteration 780: error is 0.67246 Iteration 790: İS 0.67246 error Iteration error 800: is 0.67246 Iteration error 0.67246 810: is Iteration 820: error is 0.67246 Iteration 0.67246 830: error is Iteration 0.67246 840: is error Iteration 850: error is 0.67246 Iteration 0.67245 860: is error 0.67245 Iteration error is 870: Iteration 880: is 0.67245 error Iteration is 890: 0.67245 error Iteration is 0.67245 900: error Iteration 910: is 0.67245 error is Iteration 920: 0.67245 error Iteration 930: is 0.67245 error Iteration 940: is 0.67245 error Iteration 950: 0.67245 is error Iteration 960: is 0.67245 error

Iteration 970: error is 0.67245

Iteration 980: error is 0.67245

Iteration 990: error is 0.67245

Iteration 1000: error is 0.67245

J new = 0.8539

J new = 0.8209

J new = 0.8095

J new = 0.8062

J new = 0.8011

J new = 0.7853

J new = 0.7431

J new = 0.7416

J new = 0.7424

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.9095

Iteration 20: error is 37.3471

Iteration 30: error is 36.7427

Iteration 40: error is 36.4494

Iteration 50: error is 36.7278

Iteration is 37.2611 60: error is Iteration 70: 37.1789 error is Iteration 80: 37.9062 error Iteration is 37.4844 90: error Iteration 100: is 2.1484 error Iteration 110: 1.0857 is error Iteration 0.77835 120: is error Iteration is 0.70163 130: error Iteration 0.68192 140: is error Iteration 0.67178 150: error is Iteration 160: 0.66484 error is Iteration error is 0.65996 170: Iteration 180: is 0.65631 error Iteration 190: error is 0.65348 Iteration is 200: 0.65127 error Iteration 0.64943 210: is error Iteration is 0.64793 220: error Iteration 230: is 0.6467 error Iteration 240: is 0.64553 error Iteration 250: 0.64469 is error Iteration 0.64327 260: error is

Iteration is 0.64181 270: error is Iteration 280: 0.6407 error Iteration is 290: 0.63985 error Iteration 300: 0.63922 is error Iteration 0.63874 error 310: is Iteration 320: 0.63836 is error Iteration 0.63805 330: is error Iteration 0.6378 is 340: error Iteration 0.6376 350: is error Iteration 360: 0.63744 is error Iteration 0.6373 370: is error Iteration 380: error is 0.63719 0.63709 Iteration 390: is error Iteration is 400: 0.63701 error Iteration is 0.63694 410: error Iteration is 420: 0.63688 error Iteration is 430: 0.63683 error Iteration is 0.63679 440: error Iteration 450: is 0.63675 error Iteration 460: is 0.63672 error Iteration 470: error is 0.63669

Iteration is 0.63667 480: error is Iteration 490: 0.63664 error is Iteration 500: 0.63662 error Iteration 510: 0.63661 is error 520: Iteration error 0.63659 is Iteration 0.63658 530: is error Iteration 540: 0.63657 is error Iteration 0.63656 550: is error 560: Iteration 0.63655 is error Iteration 570: 0.63654 error is Iteration 580: 0.63654 is error Iteration 590: error is 0.63653 Iteration 0.63652 600: is error Iteration is 0.63652 610: error Iteration is 620: 0.63652 error Iteration is 630: 0.63651 error Iteration is 640: 0.63651 error Iteration 650: 0.63651 is error Iteration 660: is 0.6365 error Iteration 670: is 0.6365 error Iteration is 680: 0.6365 error

Iteration is 0.6365 690: error 700: Iteration is 0.63649 error Iteration is 710: 0.63649 error Iteration 0.63649 720: is error Iteration error 0.63649 730: is Iteration error 0.63649 740: is Iteration 0.63649 750: is error Iteration 0.63649 760: is error Iteration 0.63649 770: is error Iteration 0.63648 780: error is Iteration 0.63648 790: is error Iteration error is 0.63646 800: Iteration 810: is 0.63644 error Iteration is 820: 0.63644 error Iteration is 830: 0.63644 error Iteration is 840: 0.63643 error Iteration is 850: 0.63643 error Iteration 860: 0.63643 is error Iteration 870: is 0.63643 error Iteration is 0.63643 880: error Iteration 890: is 0.63643 error

```
Iteration 900: error is 0.63643
```

J new =
$$0.8521$$

$$J new = 0.8279$$

J new =
$$0.8175$$

J new =
$$0.8163$$

J new =
$$0.8157$$

J new =
$$0.8139$$

J new =
$$0.8118$$

J new =
$$0.8064$$

$$J \text{ new} = 0.8035$$

J new =
$$0.7899$$

J new = 0.7824

J new = 0.7422

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.1836

Iteration 20: error is 36.7143

Iteration 30: error is 36.7616

Iteration 40: error is 37.3901

Iteration 50: error is 36.5329

Iteration 60: error is 37.5878

Iteration 70: error is 37.5452

Iteration 80: error is 37.4385

Iteration 90: error is 38.0082

Iteration 100: error is 2.2245

Iteration 110: error is 1.2215

Iteration 120: error is 0.87111

Iteration 130: error is 0.77832

Iteration 140: error is 0.68966

Iteration 150: error is 0.67407

Iteration is 0.66791 160: error is 0.66325 Iteration 170: error is Iteration 180: 0.65906 error Iteration 0.65628 190: is error Iteration error 200: is 0.6542 Iteration 0.65254 210: is error Iteration 0.65109 220: is error Iteration 0.64995 is 230: error Iteration 0.64895 240: is error Iteration 250: 0.64807 is error Iteration 0.64673 260: is error Iteration error is 0.64525 270: Iteration 280: is 0.64415 error Iteration is 0.64337 290: error Iteration 300: is 0.64277 error Iteration 310: is 0.64228 error is Iteration 320: 0.64194 error Iteration 330: is 0.64166 error Iteration 340: is 0.64143 error Iteration 350: 0.64122 is error Iteration 360: is 0.64106 error

Iteration 370: is 0.64093 error 0.64081 Iteration 380: is error Iteration 0.64072 is 390: error Iteration 400: 0.64063 is error Iteration error 0.64056 410: is Iteration 420: error 0.6405 is Iteration 430: is 0.64044 error Iteration 0.64039 is 440: error Iteration 0.64035 450: is error Iteration 0.64032 460: error is Iteration 470: 0.64029 is error Iteration error is 480: 0.64026 Iteration 490: is 0.64024 error Iteration 500: is 0.64022 error Iteration 510: is 0.6402 error Iteration 520: is 0.64019 error is Iteration 530: 0.64018 error Iteration 540: 0.64016 is error Iteration 550: is 0.64015 error Iteration 560: 0.64014 is error Iteration 0.64013 570: error is

Iteration 580: is 0.64013 error 0.64012 Iteration 590: is error Iteration is 600: 0.64011 error Iteration 0.64011 610: is error Iteration 620: error 0.64011 is Iteration 630: error 0.6401 is Iteration 640: is 0.6401 error Iteration 650: is 0.64009 error Iteration 0.64009 660: is error Iteration 670: error is 0.64009 Iteration 0.64009 680: is error Iteration error is 0.64008 690: Iteration 700: is 0.64008 error Iteration is 710: 0.64008 error Iteration is 0.64008 720: error Iteration is 730: 0.64008 error Iteration is 740: 0.64008 error Iteration 750: is 0.64007 error Iteration 760: is 0.64007 error Iteration is 0.64007 770: error Iteration 780: error is 0.64007

Iteration is 0.64007 790: error is Iteration 800: 0.64007 error is Iteration 810: 0.64007 error Iteration 820: 0.64007 is error Iteration error 0.64007 830: is Iteration 840: error 0.64007 is Iteration 850: is 0.64007 error Iteration 860: is error 0.64007 Iteration 0.64007 870: is error Iteration 880: error is 0.64007 Iteration 0.64007 890: is error Iteration error is 0.64006 900: Iteration is 910: 0.64006 error Iteration is 920: 0.64006 error Iteration 930: is 0.64006 error Iteration is 940: 0.64006 error is Iteration 950: 0.64006 error Iteration 960: is 0.64006 error Iteration 970: is 0.64006 error Iteration is 0.64006 980: error Iteration 990: is 0.64006 error

Iteration 1000: error is 0.64006 J new = 0.8084J new = 0.7939J new = 0.7703J new = 0.7534J new = 0.7452J new = 0.7444J new = 0.7453Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.1149 Iteration 20: error is 36.5796 Iteration 30: error is 36.9025 Iteration 40: error is 36.9507 Iteration 50: error is 36.9921 Iteration 60: error is 37.7863 Iteration 70: error is 37.7552 Iteration 80: error is 37.2033 Iteration 90: error is 37.3691 Iteration 100: error is 2.2768

Iteration is 110: 1.2973 error is 0.93066 Iteration 120: error Iteration 130: 0.84567 is error Iteration 140: is 0.82242 error 0.80539 Iteration 150: is error Iteration 160: is 0.78345 error Iteration 170: 0.75476 is error Iteration 0.75284 180: is error Iteration 0.66834 190: is error Iteration 0.66121 200: is error Iteration 0.65748 210: is error Iteration error is 0.65603 220: Iteration 230: is 0.65481 error Iteration is 0.65302 240: error Iteration 250: is 0.65186 error Iteration is 260: 0.65034 error Iteration is 0.64854 270: error Iteration 280: is 0.64746 error Iteration 290: is 0.64666 error Iteration 0.64573 is 300: error Iteration 310: is 0.64437 error

Iteration 320: is 0.6437 error Iteration 330: is 0.64295 error Iteration 340: is 0.64246 error Iteration 350: 0.64221 error is Iteration 360: 0.64204 error is Iteration 370: error 0.64189 is Iteration 0.64175 380: is error Iteration is 0.64163 390: error Iteration 0.64152 is 400: error Iteration is 0.64143 410: error Iteration 0.64136 error is 420: Iteration error is 0.64129 430: Iteration 440: error is 0.64123 Iteration 0.64118 450: error is Iteration 460: is 0.64113 error Iteration 470: is 0.64109 error Iteration is 480: 0.64106 error Iteration 490: 0.64103 is error Iteration 500: is 0.641 error Iteration 510: 0.64098 is error Iteration error is 520: 0.64096

Iteration is 0.64094 530: error 0.64092 Iteration 540: is error Iteration 550: is 0.64091 error Iteration 560: 0.64089 is error Iteration 570: error 0.64088 is Iteration 580: 0.64087 is error Iteration 590: is 0.64086 error Iteration 0.64085 600: is error Iteration 610: 0.64085 is error Iteration 620: error is 0.64084 Iteration 0.64083 630: is error Iteration error is 0.64083 640: Iteration 650: is 0.64082 error Iteration is 660: 0.64082 error Iteration is 0.64081 670: error Iteration is 680: 0.64081 error Iteration is 690: 0.6408 error Iteration 700: is 0.6408 error Iteration 710: is 0.6408 error Iteration 0.64079 is 720: error Iteration 730: is 0.64079 error

Iteration is 0.64079 740: error 0.64079 Iteration 750: is error Iteration is 760: 0.64079 error Iteration 0.64078 770: is error Iteration error 780: is 0.64078 Iteration 790: 0.64078 is error Iteration 800: is 0.64078 error Iteration is 0.64078 810: error Iteration 0.64078 820: is error Iteration 0.64078 830: error is Iteration 0.64078 840: is error Iteration error is 0.64077 850: Iteration 860: is 0.64077 error Iteration is 870: 0.64077 error Iteration is 880: 0.64077 error Iteration is 890: 0.64077 error is Iteration 900: 0.64077 error Iteration 0.64077 910: is error Iteration 920: is 0.64077 error Iteration is 0.64077 930: error Iteration 940: is 0.64077 error

```
Iteration 950: error is 0.64077
```

J new =
$$0.8569$$

J new =
$$0.8276$$

J new =
$$0.8156$$

J new =
$$0.8139$$

J new =
$$0.8117$$

J new =
$$0.8079$$

$$J new = 0.8061$$

J new =
$$0.8022$$

J new =
$$0.7905$$

J new =
$$0.7811$$

$$J_{new} = 0.7427$$

J new =
$$0.7416$$

$$J_{new} = 0.7424$$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312 Iteration 10: error is 39.1255 is 36.8754 Iteration 20: error Iteration 30: error is 36.9111 Iteration 40: error is 36.7055 Iteration 50: error is 37.4355 Iteration 60: error is 36.9182 Iteration error is 37.5657 70: Iteration 80: is 37.2436 error Iteration 90: error is 37.6263 error is 2.2173 Iteration 100: Iteration 110: error is 1.3342 Iteration 120: error is 1.0861 Iteration 130: error is 0.91113 Iteration 140: error is 0.81986 Iteration 150: error is 0.71278 Iteration 160: 0.69181 error is Iteration 170: 0.65931 error is Iteration 180: error is 0.65604 Iteration 190: error is 0.65396 Iteration 200: error is 0.65214

Iteration is 0.65068 210: error is 0.64953 Iteration 220: error is Iteration 230: 0.6483 error Iteration 240: 0.64738 is error 250: Iteration error is 0.6466 Iteration 260: 0.64536 is error Iteration 0.64395 270: is error Iteration is 0.64292 280: error Iteration is 0.6422 290: error Iteration 0.64162 300: is error Iteration 310: 0.64118 is error Iteration error is 0.64083 320: Iteration 330: is 0.64055 error Iteration 340: is 0.64032 error Iteration 350: is 0.64014 error Iteration 360: is 0.63998 error is Iteration 370: 0.63985 error Iteration 380: is 0.63974 error Iteration 390: is 0.63965 error Iteration 0.63958 is 400: error Iteration 410: is 0.6395 error

Iteration 420: is 0.63944 error 0.63939 Iteration 430: is error Iteration is 440: 0.63935 error Iteration 450: is 0.63931 error 0.63927 Iteration 460: error is Iteration 470: is 0.63924 error Iteration 0.63922 480: is error Iteration is 0.6392 490: error Iteration 0.63918 500: is error Iteration 510: 0.63916 is error Iteration 520: 0.63914 is error Iteration 530: error is 0.63913 Iteration 540: 0.63912 is error Iteration 550: is 0.63911 error Iteration 560: is 0.6391 error Iteration 570: is 0.63909 error Iteration is 580: 0.63908 error Iteration 590: is 0.63907 error Iteration 600: is 0.63907 error Iteration 610: 0.63906 is error Iteration 620: is 0.63906 error

Iteration is 0.63906 630: error 0.63905 Iteration 640: is error Iteration is 650: 0.63905 error Iteration 660: 0.63905 error is Iteration 0.63904 error 670: is Iteration 680: 0.63904 is error Iteration 0.63904 690: is error Iteration 0.63904 is 700: error Iteration 0.63903 710: is error Iteration 0.63903 720: error is 730: Iteration 0.63903 is error Iteration error is 0.63903 740: Iteration 0.63903 750: is error Iteration is 760: 0.63903 error Iteration is 0.63903 770: error Iteration 780: is 0.63903 error Iteration is 0.63903 790: error Iteration 800: 0.63902 is error Iteration 810: is 0.63902 error Iteration 0.63902 is 820: error Iteration 830: is 0.63902 error

```
Iteration 840: error is 0.63902
Iteration 850:
               error is 0.63902
               error is 0.63902
Iteration 860:
Iteration 870:
               error is 0.63902
Iteration 880:
               error is 0.63902
Iteration 890:
               error is 0.63902
Iteration 900:
               error is 0.63902
Iteration 910:
               error is 0.63902
Iteration 920:
               error is 0.63902
Iteration 930:
               error is 0.63902
Iteration 940: error is 0.63902
Iteration 950: error is 0.63902
Iteration 960: error is 0.63902
Iteration 970: error is 0.63902
Iteration 980: error is 0.63902
Iteration 990: error is 0.63902
Iteration 1000: error is 0.63902
J \text{ new} = 0.8702
J new = 0.8384
J new = 0.8213
J \text{ new} = 0.8097
```

J new = 0.8063

 $J_{new} = 0.8014$

J new = 0.7857

J new = 0.7434

J new = 0.7420

J new = 0.7426

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.7858

Iteration 20: error is 37.0692

Iteration 30: error is 37.3712

Iteration 40: error is 36.7248

Iteration 50: error is 36.997

Iteration 60: error is 37.1212

Iteration 70: error is 37.7949

Iteration 80: error is 37.3347

Iteration 90: error is 37.4757

Iteration 100: error is 2.3065

Iteration 110: error is 1.2269

Iteration 120: error is 0.80337

Iteration is 0.74298 130: error Iteration 140: is 0.70122 error Iteration 150: is 0.68572 error Iteration 160: is 0.67922 error 170: Iteration 0.67439 error is Iteration 180: is 0.67079 error Iteration 0.66806 190: is error Iteration 0.66585 is 200: error Iteration is 0.66402 210: error Iteration 0.66254 220: is error Iteration 0.66128 230: is error Iteration error is 0.66026 240: Iteration 250: is 0.65936 error Iteration 260: is 0.65794 error Iteration is 0.65639 270: error Iteration is 0.65525 280: error Iteration is 0.65444 290: error Iteration 300: is 0.65368 error Iteration 0.65317 310: is error Iteration 0.65278 is 320: error Iteration 330: is 0.65247 error

Iteration 340: is 0.6522 error 350: is 0.65199 Iteration error Iteration 360: is 0.65181 error Iteration 370: is 0.65166 error Iteration 380: is 0.65153 error Iteration 390: 0.65142 is error Iteration 0.65133 400: is error Iteration 0.65125 is 410: error Iteration 0.65118 420: is error Iteration 430: is 0.65112 error Iteration 0.65107 error is 440: Iteration error is 0.65102 450: Iteration 0.65098 460: is error Iteration error is 0.65095 470: Iteration 480: is 0.65092 error Iteration is 490: 0.65089 error Iteration 500: is 0.65087 error Iteration 510: is 0.65085 error Iteration 520: 0.65083 is error Iteration 530: 0.65081 is error Iteration 540: error is 0.6508

Iteration 550: is 0.65078 error 0.65077 Iteration 560: is error is Iteration 570: 0.65076 error Iteration 580: 0.65075 is error 0.65074 Iteration error 590: is Iteration 0.65073 600: error is Iteration 610: 0.65073 is error Iteration 620: is 0.65072 error Iteration 0.65071 630: is error Iteration 0.65071 640: error is Iteration 650: 0.6507 is error Iteration error is 0.6507 660: Iteration 670: is 0.6507 error Iteration is 0.65069 680: error Iteration is 0.65069 690: error Iteration is 700: 0.65069 error Iteration is 0.65068 710: error Iteration 720: 0.65068 is error Iteration 730: is 0.65068 error Iteration 0.65068 is 740: error Iteration 750: error is 0.65068

Iteration 760: is 0.65067 error is Iteration 770: 0.65067 error Iteration is 780: 0.65067 error Iteration 0.65067 790: is error Iteration 0.65067 error 800: is Iteration 0.65067 810: is error Iteration 0.65067 820: is error Iteration 0.65067 is 830: error Iteration is 0.65067 840: error Iteration 850: 0.65066 error is Iteration 0.65066 860: is error Iteration error is 0.65066 870: Iteration 880: is 0.65066 error Iteration is 0.65066 890: error Iteration is 0.65066 900: error Iteration 910: is 0.65066 error is Iteration 920: 0.65066 error Iteration 930: 0.65066 is error Iteration 940: is 0.65066 error Iteration 950: 0.65066 is error Iteration is 960: 0.65066 error

Iteration 970: error is 0.65066

Iteration 980: error is 0.65066

Iteration 990: error is 0.65066

Iteration 1000: error is 0.65066

 $J_{new} = 0.7846$

J new = 0.7625

 $J_{new} = 0.7502$

J new = 0.7402

J new = 0.7398

J new = 0.7399

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.7935

Iteration 20: error is 37.4008

Iteration 30: error is 36.8741

Iteration 40: error is 37.4626

Iteration 50: error is 37.2276

Iteration 60: error is 36.7086

Iteration 70: error is 37.9142

Iteration 80: error is 37.4265

Iteration 90: error is 37.4402 100: Iteration is 2.1693 error is Iteration 110: 1.3047 error Iteration 120: 0.89216 İS error 130: Iteration 0.82463 error is Iteration error is 140: 0.76015 Iteration 150: 0.71563 is error Iteration 160: is error 0.6762 Iteration 0.67099 170: is error Iteration error is 0.66518 180: Iteration 0.66226 error is 190: Iteration 200: error is 0.65986 Iteration error is 0.65775 210: Iteration 0.65613 220: error is Iteration 0.65484 is 230: error Iteration is 240: 0.65382 error Iteration is 250: 0.65298 error Iteration 260: is 0.6516 error Iteration 270: is 0.65007 error Iteration 0.64899 is 280: error Iteration error is 290: 0.64817

Iteration 300: is 0.64753 error 0.64704 Iteration 310: is error Iteration 320: 0.64666 is error Iteration 330: 0.64635 error is Iteration 340: error is 0.6461 Iteration 350: is 0.6459 error Iteration 360: 0.64573 is error Iteration 0.64559 370: is error Iteration 0.64547 380: is error Iteration is 0.64537 390: error Iteration 0.64528 error is 400: Iteration error is 0.64521 410: Iteration 420: error is 0.64514 Iteration 0.64509 430: error is Iteration 440: is 0.64504 error Iteration is 450: 0.645 error Iteration is 0.64496 460: error Iteration 470: is 0.64493 error Iteration 480: is 0.6449 error Iteration 490: 0.64487 is error Iteration 500: error is 0.64485

Iteration is 0.64483 510: error Iteration 520: is 0.64481 error Iteration 530: 0.6448 is error Iteration 540: is 0.64478 error Iteration 550: 0.64477 error is Iteration 560: 0.64476 is error Iteration 0.64475 570: error is Iteration 580: is 0.64474 error Iteration 0.64473 590: is error Iteration 0.64472 600: is error Iteration 610: 0.64471 is error Iteration error is 0.64471 620: Iteration 630: is 0.6447 error Iteration 640: error is 0.6447 Iteration is 0.64469 650: error Iteration 660: is 0.64469 error Iteration is 670: 0.64468 error Iteration 0.64468 680: is error Iteration 690: is 0.64468 error Iteration 0.64467 is 700: error Iteration 710: error is 0.64467

Iteration is 0.64467 720: error Iteration 730: is 0.64467 error Iteration 0.64466 is 740: error Iteration 750: 0.64466 error is Iteration 760: error 0.64466 is Iteration 770: error 0.64466 is Iteration 0.64466 780: is error Iteration is 0.64466 790: error Iteration 0.64465 800: is error Iteration 0.64465 810: is error Iteration 0.64465 820: is error Iteration error is 0.64465 830: Iteration 0.64465 840: is error Iteration is 0.64465 850: error Iteration is 860: 0.64465 error Iteration 870: is 0.64465 error is Iteration 0.64465 880: error Iteration 890: is 0.64465 error Iteration 900: is 0.64465 error Iteration 0.64464 is 910: error Iteration 0.64464 920: is error

```
Iteration 930: error is 0.64464
```

Iteration 940: error is 0.64464

Iteration 950: error is 0.64464

Iteration 960: error is 0.64464

Iteration 970: error is 0.64464

Iteration 980: error is 0.64464

Iteration 990: error is 0.64464

Iteration 1000: error is 0.64464

J new = 0.8379

J new = 0.8221

J new = 0.8148

J new = 0.8116

J new = 0.8099

J new = 0.8054

J new = 0.8006

J new = 0.7851

J new = 0.7431

J new = 0.7416

 $J_{new} = 0.7424$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312 Iteration 10: error is 39.6753 is 37.8451 Iteration 20: error Iteration 30: error is 37.163 Iteration 40: error is 37.615 Iteration 50: error is 37.9545 Iteration 60: error is 37.4721 Iteration 70: error is 37.3621 Iteration 80: is 37.7004 error Iteration 90: error is 37.5517 error is 2.2443 Iteration 100: Iteration 110: error is 1.1409 Iteration 120: error is 0.76407 Iteration 130: error is 0.69906 error is 0.67741 Iteration 140: Iteration 150: error is 0.66692 Iteration 160: 0.65979 error is Iteration 170: 0.65471 error is Iteration 180: error is 0.65074 Iteration 190: error is 0.64774 Iteration 200: error is 0.64534

Iteration is 0.64338 210: error 0.64178 Iteration 220: is error Iteration is 230: 0.6404 error Iteration 240: is 0.63923 error 250: Iteration 0.63823 error is Iteration 260: 0.6367 is error Iteration 0.63508 270: is error Iteration 0.63387 is 280: error Iteration 0.63299 290: is error Iteration 0.6323 300: is error Iteration 310: 0.63178 is error Iteration 320: error is 0.63138 Iteration 330: 0.63105 is error Iteration 340: 0.63079 error is Iteration 350: is 0.63057 error Iteration 360: is 0.6304 error is Iteration 370: 0.63026 error Iteration 380: 0.63014 is error Iteration 390: is 0.63004 error Iteration 400: 0.62995 is error Iteration 410: is 0.62988 error

Iteration 420: is 0.62982 error Iteration 430: is 0.62976 error Iteration 0.62971 is 440: error Iteration 450: 0.62967 error is Iteration 0.62964 460: error is Iteration 470: error 0.62961 is Iteration 0.62958 480: is error Iteration 0.62956 is 490: error Iteration 0.62954 500: is error Iteration 510: 0.62952 error is Iteration 520: 0.6295 is error Iteration error is 530: 0.62949 0.62948 Iteration 540: is error Iteration 550: 0.62947 is error Iteration 560: is 0.62946 error Iteration 570: is 0.62945 error Iteration is 580: 0.62944 error Iteration 590: is 0.62943 error Iteration 600: is 0.62943 error Iteration 610: 0.62942 is error Iteration 620: is 0.62942 error

Iteration is 0.62941 630: error Iteration 640: is 0.62941 error Iteration is 650: 0.6294 error Iteration 660: 0.6294 error is Iteration 0.6294 error 670: is Iteration 680: error is 0.6294 Iteration 0.62939 690: is error Iteration 0.62939 is 700: error Iteration 0.62939 710: is error Iteration is 0.62939 720: error 730: Iteration 0.62939 error is Iteration error is 0.62939 740: 0.62938 Iteration 750: is error Iteration 0.62938 760: error is Iteration is 0.62938 770: error Iteration 780: is 0.62938 error Iteration 0.62938 790: is error Iteration 800: is 0.62938 error Iteration 810: is 0.62938 error Iteration 0.62938 820: is error Iteration 830: error is 0.62938

```
Iteration 840:
               error is 0.62938
Iteration 850:
               error is 0.62938
               error is 0.62938
Iteration 860:
Iteration 870:
               error is 0.62938
Iteration 880:
               error is 0.62938
Iteration 890:
               error is 0.62938
Iteration 900:
               error is 0.62938
Iteration 910:
               error is 0.62938
Iteration 920:
               error is 0.62938
Iteration 930:
               error is 0.62938
Iteration 940: error is 0.62938
Iteration 950:
               error is 0.62938
Iteration 960:
               error is 0.62938
Iteration 970: error is 0.62938
Iteration 980: error is 0.62938
Iteration 990: error is 0.62938
Iteration 1000: error is 0.62938
J new = 0.8430
J new = 0.8274
J new = 0.8175
J new = 0.8156
```

J new = 0.8148

J new = 0.8111

 $J_{new} = 0.8072$

J new = 0.8027

J new = 0.7907

J new = 0.7816

 $J_{new} = 0.7430$

J new = 0.7421

J new = 0.7426

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.5278

Iteration 20: error is 37.3151

Iteration 30: error is 36.7133

Iteration 40: error is 37.1292

Iteration 50: error is 37.4111

Iteration 60: error is 37.475

Iteration 70: error is 36.4882

Iteration 80: error is 37.2606

Iteration 90: error is 37.743

Iteration is 100: 2.3511 error is Iteration 110: 1,2702 error Iteration 0.88865 is 120: error Iteration 130: 0.83442 error is Iteration is 0.8077 error 140: Iteration 150: is 0.787 error Iteration 160: 0.74196 is error Iteration 170: is 0.66441 error Iteration is 0.65943 180: error Iteration 0.6572 190: is error Iteration 0.6554 200: is error Iteration error is 0.65384 210: Iteration 0.65262 220: is error Iteration is 0.65154 230: error Iteration is 0.65057 240: error Iteration is 250: 0.64811 error Iteration is 260: 0.64679 error Iteration 270: is 0.64545 error Iteration 280: is 0.64443 error Iteration 0.64364 is 290: error Iteration 0.64301 300: is error

Iteration 310: is 0.64252 error Iteration 320: is 0.64214 error Iteration 330: is 0.64184 error Iteration 340: 0.6416 is error Iteration 350: error is 0.6414 Iteration 360: 0.64124 is error Iteration 370: is 0.6411 error Iteration is 0.64099 380: error Iteration 0.64089 is 390: error Iteration error is 400: 0.64081 Iteration 0.64075 error is 410: Iteration 420: error is 0.64069 Iteration 430: error is 0.64064 Iteration 440: error is 0.64059 Iteration is 0.64056 450: error Iteration is 460: 0.64052 error Iteration is 470: 0.6405 error Iteration 480: is 0.64047 error Iteration 490: is 0.64045 error Iteration 0.64043 is 500: error Iteration error is 510: 0.64042

Iteration 520: is 0.6404 error 0.64039 Iteration 530: is error is Iteration 540: 0.64038 error Iteration 550: 0.64037 error is Iteration 560: error 0.64036 is Iteration 570: error 0.64036 is Iteration 580: is 0.64035 error Iteration 0.64034 is 590: error Iteration is 0.64034 600: error Iteration 610: 0.64033 error is Iteration 620: 0.64033 is error Iteration error is 0.64033 630: Iteration 640: is 0.64032 error Iteration 650: error is 0.64032 Iteration is 0.64032 660: error Iteration is 670: 0.64032 error Iteration is 0.64031 680: error Iteration 690: 0.64031 is error Iteration 700: is 0.64031 error Iteration 0.64031 is 710: error Iteration 720: error is 0.64031

Iteration is 0.64031 730: error Iteration 740: is 0.64031 error is Iteration 750: 0.6403 error Iteration 0.6403 760: is error Iteration error 0.6403 770: is Iteration 780: error 0.6403 is Iteration 790: is 0.6403 error Iteration is 800: error 0.6403 Iteration 810: 0.6403 is error Iteration 820: error is 0.6403 Iteration error is 830: 0.6403 Iteration error is 0.6403 840: Iteration error is 850: 0.6403 Iteration 860: error is 0.6403 Iteration is 0.6403 870: error Iteration 880: is 0.6403 error is Iteration 890: 0.6403 error Iteration 900: is 0.6403 error Iteration 910: is 0.6403 error Iteration is 0.6403 920: error Iteration error is 930: 0.6403

Iteration 940: error is 0.6403

Iteration 950: error is 0.6403

Iteration 960: error is 0.6403

Iteration 970: error is 0.6403

Iteration 980: error is 0.6403

Iteration 990: error is 0.6403

Iteration 1000: error is 0.6403

J new = 0.8029

J new = 0.7870

J new = 0.7627

J new = 0.7533

J new = 0.7451

J new = 0.7449

J new = 0.7456

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.6267

Iteration 20: error is 36.9948

Iteration 30: error is 36.7511

Iteration 40: error is 36.4511

Iteration is 36.7186 50: error is Iteration 60: 37,2168 error Iteration is 36.8085 70: error Iteration 80: is 37.0277 error Iteration is 90: 36.8353 error Iteration 100: is 2.0442 error Iteration 110: is 1.1611 error Iteration 120: is 0.83485 error Iteration 0.75754 130: is error Iteration 140: 0.71243 error is Iteration 150: 0.67613 error is Iteration error is 0.66948 160: error is Iteration 170: 0.66472 Iteration 180: error is 0.66119 Iteration is 190: 0.65869 error Iteration is 200: 0.65644 error Iteration is 0.65421 210: error Iteration 220: 0.65039 is error Iteration 230: is 0.64804 error Iteration 0.64701 is 240: error Iteration error is 250: 0.6461

Iteration is 0.64475 260: error 0.64319 Iteration 270: is error Iteration is 280: 0.6421 error Iteration 290: 0.64133 is error Iteration error 300: is 0.64071 Iteration 310: error 0.64025 is Iteration 320: is 0.6399 error Iteration 0.63961 is 330: error Iteration 0.63937 340: is error Iteration 350: 0.63918 is error Iteration 360: 0.63902 is error Iteration 370: error is 0.63889 Iteration 380: 0.63878 is error Iteration 390: 0.63868 error is Iteration is 400: 0.6386 error Iteration is 410: 0.63853 error Iteration is 420: 0.63847 error Iteration 430: 0.63842 is error Iteration 440: is 0.63837 error Iteration 450: 0.63833 is error Iteration 460: error is 0.6383

Iteration is 0.63827 470: error Iteration 480: is 0.63824 error Iteration is 490: 0.63822 error Iteration 500: is 0.6382 error 510: Iteration 0.63818 error is Iteration 520: 0.63817 is error Iteration 0.63815 530: is error Iteration 540: is 0.63814 error Iteration 0.63813 550: is error Iteration 560: 0.63812 is error Iteration 570: 0.63811 is error Iteration error is 0.63811 580: Iteration 590: is 0.6381 error Iteration is 600: 0.63809 error Iteration is 610: 0.63809 error Iteration is 620: 0.63808 error Iteration is 630: 0.63808 error Iteration 640: 0.63808 is error Iteration 650: is 0.63807 error Iteration 660: is 0.63807 error Iteration 670: is 0.63807 error

Iteration 680: is 0.63807 error Iteration 690: is 0.63806 error Iteration is 700: error 0.63806 Iteration 0.63806 710: is error Iteration error 0.63806 720: is Iteration 730: error 0.63806 is Iteration 0.63806 740: is error Iteration 750: error is 0.63806 Iteration 0.63805 760: is error Iteration 0.63805 770: error is Iteration 0.63805 780: is error Iteration 0.63805 790: is error Iteration 0.63805 800: is error Iteration is 0.63805 810: error Iteration is 0.63805 820: error Iteration is 830: 0.63805 error is Iteration 840: 0.63805 error Iteration 850: 0.63805 is error Iteration 860: is 0.63805 error Iteration 0.63805 is 870: error Iteration 880: is 0.63805 error

```
Iteration 890: error is 0.63805
Iteration 900: error is 0.63805
```

Iteration 910: error is 0.63805

Iteration 920: error is 0.63805

Iteration 930: error is 0.63805

Iteration 940: error is 0.63805

Iteration 950: error is 0.63805

Iteration 960: error is 0.63805

Iteration 970: error is 0.63805

Iteration 980: error is 0.63805

Iteration 990: error is 0.63805

Iteration 1000: error is 0.63805

 $J_{new} = 0.8316$

J new = 0.8183

J new = 0.8146

J new = 0.8128

J new = 0.8093

J new = 0.8071

J new = 0.8002

J new = 0.7867

J new = 0.7424

J new = 0.7429Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.757 Iteration 20: error is 37.0407 Iteration 30: error is 36.6834 Iteration 40: error is 36.9887 Iteration 50: error is 36.6378 Iteration 60: error is 37.1881 Iteration 70: error is 37.0885 Iteration 80: error is 37.1724 Iteration 90: error is 37.6786 Iteration 100: error is 2.1686 Iteration 110: error is 1.1918 Iteration 120: error is 0.74362 Iteration 130: error is 0.69691 Iteration 140: error is 0.68306 Iteration 150: error is 0.6733 Iteration 160: error is 0.66679 Iteration 170: error is 0.66206

Iteration is 0.65856 180: error 0.65587 Iteration 190: is error Iteration is 200: 0.65369 error Iteration 210: is 0.65202 error 0.65056 Iteration error 220: is Iteration 0.64939 230: is error Iteration 0.64836 240: is error Iteration 0.6475 is 250: error Iteration 0.64616 260: is error Iteration is 0.6447 270: error Iteration 0.64361 280: is error Iteration error is 290: 0.64278 Iteration 0.64215 300: is error Iteration 310: error is 0.64164 Iteration 320: is 0.64128 error Iteration 330: is 0.64101 error is Iteration 340: 0.64077 error Iteration 350: is 0.64058 error Iteration 360: is 0.64043 error Iteration 370: 0.64029 is error Iteration error is 380: 0.64018

Iteration is 0.64009 390: error Iteration 400: is 0.64002 error Iteration is 410: 0.63995 error Iteration 420: is 0.6399 error Iteration is 0.63985 430: error Iteration 440: error is 0.63981 Iteration 450: 0.63977 error is Iteration 460: is 0.63974 error Iteration 470: is 0.63972 error Iteration 0.63969 480: error is Iteration 0.63967 490: is error Iteration error is 0.63966 500: 0.63964 Iteration 510: is error Iteration 520: is 0.63963 error Iteration 530: is 0.63961 error Iteration 540: is 0.6396 error Iteration is 550: 0.63959 error Iteration 560: is 0.63959 error Iteration 570: 0.63958 is error Iteration 580: 0.63957 is error Iteration 590: is 0.63957 error

Iteration is 0.63956 600: error Iteration 610: is 0.63956 error Iteration is 620: 0.63955 error Iteration 630: is 0.63955 error 640: Iteration is 0.63955 error Iteration is 0.63954 650: error Iteration 660: 0.63954 error is Iteration 670: 0.63954 is error Iteration 0.63954 680: is error Iteration is 0.63954 690: error Iteration 0.63953 700: is error Iteration error is 0.63953 710: Iteration 720: 0.63953 is error Iteration is 0.63953 730: error Iteration is 0.63953 740: error Iteration 750: is 0.63953 error Iteration 0.63953 760: is error Iteration 770: is 0.63953 error Iteration 0.63953 780: is error Iteration 0.63953 790: is error Iteration 800: error is 0.63953

Iteration 810: error is 0.63953 is 0.63952 Iteration 820: error Iteration 830: error is 0.63952 Iteration 840: error is 0.63952 Iteration 850: error is 0.63952 Iteration 860: error is 0.63952 Iteration 870: error is 0.63952 Iteration 880: error is 0.63952 Iteration 890: error is 0.63952 Iteration 900: error is 0.63952 Iteration 910: error is 0.63952 Iteration 920: error is 0.63952 Iteration 930: 0.63952 error is Iteration 940: error is 0.63952 error is 0.63952 Iteration 950: Iteration 960: error is 0.63952 Iteration 970: error is 0.63952 Iteration 980: error is 0.63952 Iteration 990: error is 0.63952 Iteration 1000: error is 0.63952 J new = 0.8340

J new = 0.8203

J new = 0.8196

 $J_{new} = 0.8197$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.327

Iteration 20: error is 36.8996

Iteration 30: error is 36.0205

Iteration 40: error is 36.7813

Iteration 50: error is 37.0647

Iteration 60: error is 37.3215

Iteration 70: error is 37.4796

Iteration 80: error is 37.0914

Iteration 90: error is 37.6374

Iteration 100: error is 2.2418

Iteration 110: error is 1.1877

Iteration 120: error is 0.82275

Iteration 130: error is 0.69981

Iteration 140: error is 0.68213

Iteration 150: error is 0.6706

Iteration 160: is 0.66406 error is Iteration 170: 0.6594 error Iteration 0.65591 180: is error Iteration 190: is 0.6532 error 0.65107 Iteration error 200: is Iteration 210: 0.64933 is error Iteration 220: is 0.6479 error Iteration 0.64678 is 230: error Iteration 0.64574 240: is error Iteration 250: is 0.6448 error Iteration 0.64338 260: is error Iteration error is 0.64188 270: Iteration 280: is 0.64079 error Iteration is 290: 0.64001 error Iteration 300: is 0.63941 error Iteration 310: is 0.63894 error is Iteration 320: 0.63858 error Iteration 330: is 0.63829 error Iteration 340: is 0.63805 error Iteration 350: 0.63786 is error Iteration 360: is 0.6377 error

Iteration 370: is 0.63756 error Iteration 380: is 0.63745 error Iteration is 390: 0.63735 error Iteration 400: is 0.63722 error Iteration is 0.63714 error 410: Iteration 420: error is 0.63708 Iteration 0.63703 430: is error Iteration 0.63699 is 440: error Iteration 0.63695 450: is error Iteration is 0.63692 460: error Iteration 470: 0.63689 is error Iteration error is 0.63686 480: Iteration 490: is 0.63684 error Iteration 500: is 0.63682 error Iteration 510: is 0.63681 error Iteration 520: is 0.63679 error Iteration 530: is 0.63678 error Iteration 540: is 0.63676 error Iteration 550: is 0.63675 error Iteration 560: is 0.63674 error Iteration 0.63674 570: is error

Iteration is 0.63673 580: error Iteration 590: is 0.63672 error is Iteration 600: 0.63671 error Iteration 610: 0.63671 is error Iteration 620: error 0.6367 is Iteration 630: error 0.6367 is Iteration 640: is 0.6367 error Iteration 0.63669 650: is error Iteration 0.63669 660: is error Iteration 0.63669 670: error is Iteration 0.63669 680: is error Iteration error is 0.63668 690: Iteration 700: is 0.63668 error Iteration is 0.63668 710: error Iteration is 0.63668 720: error Iteration is 730: 0.63668 error Iteration is 740: 0.63668 error Iteration 750: is 0.63667 error Iteration 760: is 0.63667 error Iteration is 0.63667 770: error Iteration is 780: 0.63667 error

Iteration is 0.63667 790: error is Iteration 800: 0.63667 error is Iteration 810: 0.63667 error Iteration 0.63667 820: is error Iteration error 0.63667 830: is Iteration 0.63667 840: is error Iteration 850: is 0.63667 error Iteration 0.63667 860: is error Iteration is 0.63667 870: error Iteration 0.63667 880: is error Iteration 0.63667 890: is error Iteration 0.63667 900: is error Iteration 910: is 0.63667 error Iteration is 0.63667 920: error Iteration is 930: 0.63667 error Iteration is 940: 0.63667 error is Iteration 950: 0.63666 error Iteration 960: is 0.63666 error Iteration 970: is 0.63666 error Iteration is 0.63666 980: error Iteration 990: is 0.63666 error

```
Iteration 1000: error is 0.63666
J new = 0.8657
J new = 0.8365
J new = 0.8241
J new = 0.8155
J new = 0.8137
J new = 0.8120
J new = 0.8081
J new = 0.8065
J new = 0.8025
J new = 0.7909
J new = 0.7814
J new = 0.7431
J new = 0.7419
J new = 0.7428
Mean value of sigma: 0.16017
Minimum value of sigma: 0.1114
Maximum value of sigma: 0.27312
Iteration 10: error is 39.4078
Iteration 20: error is 36.1006
Iteration 30: error is 36.7665
```

Iteration 40: is 37.292 error is Iteration 50: 37,058 error is Iteration 60: 36.6643 error Iteration 70: is 36.9304 error Iteration 80: is 37.1242 error Iteration 90: error is 37,178 2,2507 Iteration is 100: error Iteration is 1.1595 110: error Iteration 120: is 0.88876 error Iteration 130: error is 0.72211 Iteration 140: 0.69016 error is Iteration 150: error is 0.67849 error is Iteration 160: 0.67173 Iteration 170: error is 0.66698 Iteration 180: is 0.66334 error Iteration 190: is 0.6605 error Iteration is 200: 0.65857 error Iteration 210: 0.65662 is error Iteration 220: is 0.65534 error

Iteration 230: error is 0.65387

Iteration is 0.65186 250: error 0.65049 Iteration 260: is error Iteration 0.64889 is 270: error Iteration 280: 0.64776 error is Iteration error 290: is 0.64694 Iteration 300: error 0.64619 is Iteration 0.64369 310: is error Iteration is 0.64234 320: error Iteration 0.64164 330: is error Iteration is 0.64129 340: error Iteration 350: 0.64108 is error Iteration 360: error is 0.6409 Iteration 370: is 0.64075 error Iteration 380: is 0.64062 error Iteration 390: is 0.64052 error Iteration 400: is 0.64043 error Iteration is 0.64035 410: error Iteration 420: 0.64028 is error Iteration 430: is 0.64022 error Iteration 0.64018 is 440: error Iteration 450: error is 0.64013

Iteration is 0.6401 460: error 0.64007 Iteration 470: is error Iteration is 480: 0.64004 error Iteration 0.64001 490: error İS Iteration error 500: is 0.63999 Iteration 510: error is 0.63997 Iteration 520: 0.63995 is error Iteration 0.63994 is 530: error Iteration 0.63992 540: is error Iteration 550: 0.63991 error is Iteration 560: 0.63985 is error Iteration error is 0.63983 570: 0.63982 Iteration 580: is error Iteration 590: is 0.63981 error Iteration is 600: 0.6398 error Iteration is 610: 0.6398 error Iteration is 0.63979 620: error Iteration 630: is 0.63978 error Iteration 640: is 0.63978 error Iteration 650: 0.63977 is error Iteration 660: is 0.63977 error

Iteration is 0.63977 670: error Iteration 680: is 0.63976 error Iteration 690: is 0.63976 error Iteration 700: 0.63976 error is Iteration 0.63975 error 710: is Iteration 720: error 0.63974 is Iteration 0.63974 730: is error Iteration is 0.63974 740: error Iteration 0.63974 750: is error Iteration 0.63974 760: error is Iteration 0.63974 770: is error 0.63973 Iteration error is 780: Iteration 0.63973 790: is error Iteration is 0.63973 800: error Iteration is 0.63973 810: error Iteration 820: is 0.63973 error Iteration 830: 0.63973 is error Iteration 840: is 0.63973 error Iteration 850: is 0.63973 error Iteration 860: 0.63973 is error Iteration 870: is 0.63973 error

```
Iteration 880: error is 0.63973
Iteration 890: error is 0.63973
Iteration 900: error is 0.63972
Iteration 910: error is 0.63972
Iteration 920: error is 0.63972
Iteration 930: error is 0.63972
Iteration 940: error is 0.63972
Iteration 950: error is 0.63972
Iteration 960: error is 0.63972
Iteration 970: error is 0.63972
Iteration 980: error is 0.63972
Iteration 990: error is 0.63972
Iteration 1000: error is 0.63972
J \text{ new} = 0.8439
J new = 0.8281
J new = 0.8163
J new = 0.8143
J new = 0.8118
J new = 0.8075
J \text{ new} = 0.8059
J new = 0.8014
```

J new = 0.7861

J new = 0.7421

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.2644

Iteration 20: error is 36.9109

Iteration 30: error is 36.7161

Iteration 40: error is 37.1395

Iteration 50: error is 37.3817

Iteration 60: error is 37.018

Iteration 70: error is 37.7829

Iteration 80: error is 38.2411

Iteration 90: error is 38.1909

Iteration 100: error is 2.4545

Iteration 110: error is 1.2873

Iteration 120: error is 0.89277

Iteration 130: error is 0.72461

Iteration 140: error is 0.71391

Iteration 150: error is 0.6663

Iteration is 0.65882 160: error is 0.65291 Iteration 170: error Iteration 180: is 0.64937 error Iteration 0.64698 190: is error 0.64463 Iteration error 200: is Iteration 0.64265 210: is error Iteration 0.64132 220: is error Iteration is 0.64001 230: error Iteration is 0.63904 240: error Iteration 250: 0.63813 is error Iteration 0.63675 260: is error Iteration error is 270: 0.63522 Iteration 0.63411 280: is error Iteration is 290: 0.63336 error Iteration 300: is 0.63279 error Iteration 310: is 0.63234 error is Iteration 320: 0.63198 error Iteration 330: is 0.6317 error Iteration 340: is 0.63148 error Iteration 350: 0.63129 is error Iteration 360: is 0.63114 error

Iteration 370: is 0.63101 error is Iteration 380: 0.63091 error is Iteration 390: 0.63082 error Iteration 400: 0.63074 error is Iteration 0.63068 error 410: is Iteration 420: 0.63062 is error Iteration 0.63058 430: is error Iteration 0.63054 is 440: error Iteration 0.6305 450: is error Iteration 0.63047 460: is error Iteration 470: 0.63045 is error Iteration error is 0.63043 480: Iteration 0.63041 490: is error Iteration 500: is 0.63039 error Iteration 510: is 0.63038 error Iteration 520: is 0.63036 error Iteration 530: is 0.63035 error Iteration 540: is 0.63034 error Iteration 550: is 0.63033 error Iteration 560: 0.63033 is error Iteration 570: is 0.63032 error

Iteration is 0.63031 580: error Iteration 590: is 0.63031 error Iteration is 600: 0.6303 error Iteration 0.6303 610: is error Iteration 0.63029 620: error is Iteration 630: 0.63029 is error Iteration 0.63029 640: is error Iteration 0.63029 650: is error Iteration 0.63028 660: is error Iteration 0.63028 670: error is Iteration 0.63028 680: is error Iteration error is 0.63028 690: Iteration 0.63028 700: is error Iteration is 0.63028 710: error Iteration is 0.63027 720: error Iteration is 730: 0.63027 error Iteration is 740: 0.63027 error Iteration 750: 0.63027 is error Iteration 760: is 0.63027 error Iteration 0.63027 is 770: error Iteration 780: error is 0.63027

Iteration is 0.63027 790: error Iteration 800: is 0.63027 error Iteration 810: is 0.63027 error Iteration 820: 0.63027 error is Iteration 0.63027 error 830: is Iteration 840: 0.63027 is error Iteration 0.63027 850: is error Iteration 0.63027 860: is error Iteration 0.63027 870: is error Iteration 0.63027 880: error is Iteration 0.63027 890: is error Iteration error is 0.63027 900: Iteration 0.63027 910: is error Iteration is 0.63027 920: error Iteration 930: is 0.63027 error Iteration is 940: 0.63027 error Iteration is 950: 0.63027 error Iteration 960: 0.63027 is error Iteration 970: is 0.63027 error Iteration 0.63026 is 980: error Iteration 0.63026 990: is error

Iteration 1000: error is 0.63026 J new = 0.7979J new = 0.7742J new = 0.7529J new = 0.7448J new = 0.7444J new = 0.7453Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 38.8898 Iteration 20: error is 37.3582 Iteration 30: error is 36.4975 Iteration 40: error is 36.8124 Iteration 50: error is 36.319 Iteration 60: error is 36.7366 Iteration 70: error is 37.0773 Iteration 80: error is 37.6016 Iteration 90: error is 37.7074 Iteration 100: error is 2.1826 Iteration 110: error is 1.227

Iteration is 0.80065 120: error Iteration 130: is 0.75174 error Iteration is 140: 0.71344 error Iteration 150: is 0.70169 error Iteration 160: is 0.69554 error Iteration 0.69133 170: error is Iteration 180: 0.68798 is error Iteration is 0.68484 190: error Iteration 0.68142 is 200: error Iteration 0.67875 210: is error Iteration 0.67731 220: is error Iteration error is 0.67622 230: 0.67532 Iteration 240: is error Iteration 250: is 0.67455 error Iteration is 260: 0.67338 error Iteration is 270: 0.67216 error Iteration is 280: 0.67124 error Iteration 290: is 0.67059 error Iteration 300: is 0.67009 error Iteration 0.66973 is 310: error Iteration 320: is 0.66945 error

Iteration 330: is 0.66923 error is Iteration 340: 0.66906 error Iteration 350: is 0.66892 error Iteration 360: 0.6688 error is Iteration error 0.66871 370: is Iteration 380: 0.66863 is error Iteration 0.66857 390: is error Iteration is 0.66852 400: error Iteration 0.66847 410: is error Iteration 0.66843 420: error is Iteration 0.6684 430: is error Iteration error is 0.66837 440: Iteration 450: is 0.66835 error Iteration is 460: 0.66833 error Iteration is 0.66831 470: error Iteration 480: is 0.6683 error Iteration is 490: 0.66829 error Iteration 500: 0.66828 is error Iteration 510: is 0.66827 error Iteration 520: 0.66826 is error Iteration 530: is 0.66825 error

Iteration 540: is 0.66825 error is Iteration 550: 0.66824 error is Iteration 560: 0.66824 error Iteration 570: 0.66823 is error 580: Iteration 0.66823 error is Iteration 0.66823 590: error is Iteration 600: 0.66822 is error Iteration 610: is 0.66822 error Iteration 0.66822 620: is error Iteration 0.66822 630: error is Iteration 0.66821 640: is error Iteration error is 0.66821 650: Iteration 660: is 0.66821 error Iteration is 670: 0.66821 error Iteration is 680: 0.66821 error Iteration is 690: 0.66821 error Iteration is 700: 0.66821 error Iteration 710: 0.66821 is error Iteration 720: is 0.66821 error Iteration 730: 0.66821 is error Iteration 740: is 0.66821 error

Iteration is 0.66821 750: error Iteration 760: is 0.66821 error Iteration is 770: error 0.6682 Iteration 780: is 0.6682 error Iteration error 0.6682 790: is Iteration error 0.6682 800: is Iteration 810: is 0.6682 error Iteration 820: error is 0.6682 Iteration 830: is 0.6682 error Iteration 840: is 0.6682 error Iteration is 0.6682 850: error Iteration error is 0.6682 860: Iteration is 0.6682 870: error Iteration 880: error is 0.6682 Iteration is 890: 0.6682 error Iteration 900: is 0.6682 error Iteration 910: is 0.6682 error Iteration 920: is 0.6682 error Iteration 930: is 0.6682 error Iteration is 0.6682 940: error Iteration 950: error is 0.6682

Iteration 960: error is 0.6682

Iteration 970: error is 0.6682

Iteration 980: error is 0.6682

Iteration 990: error is 0.6682

Iteration 1000: error is 0.6682

J new = 0.8355

 $J_{new} = 0.8226$

J new = 0.8141

J new = 0.8114

J new = 0.8100

J new = 0.8057

J new = 0.8009

J new = 0.7853

J new = 0.7431

J new = 0.7416

J new = 0.7424

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.7679

Iteration 20: error is 37.3507

Iteration 30: is 36.5667 error is Iteration 40: 36.7907 error Iteration 50: is 36.8736 error Iteration 60: is 37.3618 error Iteration is 70: 37.2017 error Iteration 80: is 36.8791 error Iteration is 37.3556 90: error Iteration 100: is 2.1849 error Iteration 110: is 1,2315 error Iteration 120: error is 0.83059 Iteration 130: 0.77483 error is Iteration 140: error is 0.71885 error is Iteration 150: 0.6836 Iteration 160: error is 0.6774 Iteration 170: is 0.67287 error Iteration 180: is 0.66907 error Iteration is 190: 0.66637 error Iteration 200: is 0.66342 error Iteration 210: is 0.66157 error Iteration 0.66003 is 220: error Iteration 230: error is 0.65869 Iteration is 0.6576 240: error is Iteration 250: 0.65666 error Iteration is 260: 0.65523 error Iteration 270: 0.65363 is error Iteration 0.65248 error 280: is Iteration 0.65164 290: is error Iteration 0.65099 300: is error Iteration 0.65051 is 310: error Iteration 0.65012 320: is error Iteration 0.6498 330: error is Iteration 0.64955 340: is error Iteration 350: error is 0.64935 Iteration 360: is 0.64917 error Iteration is 370: 0.64903 error Iteration 380: is 0.6489 error Iteration 390: is 0.6488 error Iteration is 400: 0.64871 error Iteration 410: 0.64863 is error Iteration 420: is 0.64857 error Iteration 430: 0.64851 is error Iteration 440: is 0.64846 error

Iteration is 0.64842 450: error 0.64838 Iteration 460: is error Iteration 0.64834 470: is error Iteration 0.64831 480: error is 0.64828 Iteration error 490: is Iteration 500: error 0.64826 is Iteration 0.64824 510: is error Iteration is 0.64822 520: error Iteration 530: is 0.6482 error Iteration 540: error is 0.64818 Iteration 550: 0.64817 is error Iteration error is 0.64815 560: Iteration 570: is 0.64814 error Iteration 580: is 0.64813 error Iteration is 590: 0.64812 error Iteration 600: is 0.64811 error Iteration is 610: 0.6481 error Iteration 620: is 0.6481 error Iteration 630: is 0.64809 error Iteration 640: 0.64808 is error Iteration 650: is 0.64808 error

Iteration is 0.64807 660: error Iteration 670: is 0.64806 error Iteration is 680: 0.64806 error Iteration 690: 0.64806 is error 0.64805 Iteration error 700: is Iteration error 0.64805 710: is Iteration 0.64804 720: is error Iteration is 0.64804 730: error Iteration 0.64804 740: is error Iteration 750: error is 0.64803 Iteration 0.64803 760: is error Iteration error is 0.64803 770: Iteration 780: is 0.64803 error Iteration is 790: 0.64802 error Iteration is 0.64802 800: error Iteration is 810: 0.64802 error is Iteration 820: 0.64802 error Iteration 830: 0.64802 is error Iteration 840: is 0.64801 error Iteration 850: 0.64801 is error Iteration 860: is 0.64801 error

```
Iteration 870: error is 0.64801
```

Iteration 880: error is 0.64801

Iteration 890: error is 0.64801

Iteration 900: error is 0.648

Iteration 910: error is 0.648

Iteration 920: error is 0.648

Iteration 930: error is 0.648

Iteration 940: error is 0.648

Iteration 950: error is 0.648

Iteration 960: error is 0.648

Iteration 970: error is 0.648

Iteration 980: error is 0.648

Iteration 990: error is 0.648

Iteration 1000: error is 0.648

J new = 0.8719

J new = 0.8356

J new = 0.8232

J new = 0.8142

J new = 0.8108

J new = 0.8088

J new = 0.8052

J new = 0.8031

 $J_{new} = 0.7896$

 $J_{new} = 0.7820$

J new = 0.7418

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.0747

Iteration 20: error is 36.8173

Iteration 30: error is 36.5966

Iteration 40: error is 36.4102

Iteration 50: error is 36.6111

Iteration 60: error is 37.2548

Iteration 70: error is 37.5141

Iteration 80: error is 37.4126

Iteration 90: error is 37.415

Iteration 100: error is 2.2661

Iteration 110: error is 1.3192

Iteration 120: error is 0.87882

Iteration 130: error is 0.71054

Iteration 140: is 0.6834 error 150: 0.67329 Iteration is error is Iteration 160: 0.66536 error Iteration 170: 0.65997 is error Iteration is 0.65613 error 180: Iteration 190: 0.65344 is error Iteration 0.65122 200: is error Iteration 0.6495 is 210: error Iteration is 220: 0.648 error Iteration 0.64672 230: is error Iteration 0.64567 240: is error Iteration error is 0.64474 250: Iteration 0.6433 260: is error Iteration error is 0.64177 270: Iteration 280: is 0.6406 error Iteration is 290: 0.63972 error Iteration 300: is 0.6391 error Iteration 310: 0.63861 is error Iteration 320: is 0.63821 error Iteration 330: 0.63788 is error Iteration error is 340: 0.63763

Iteration 350: is 0.63743 error Iteration 360: is 0.63726 error Iteration 370: is 0.63712 error Iteration 380: 0.637 is error Iteration is error 390: 0.6369 Iteration 0.63681 400: is error Iteration 0.63674 410: is error Iteration 0.63668 is 420: error Iteration 430: is 0.63662 error Iteration is 0.63658 440: error Iteration 450: 0.63653 error is Iteration error is 0.6365 460: Iteration 470: 0.63647 is error Iteration 480: 0.63644 error is Iteration is 0.63642 490: error Iteration 500: is 0.6364 error Iteration 510: is 0.63638 error Iteration 520: is 0.63636 error Iteration 530: is 0.63635 error Iteration 540: 0.63634 is error Iteration error is 550: 0.63633

Iteration 560: is 0.63632 error Iteration 570: is 0.63631 error is Iteration 580: 0.6363 error Iteration 590: 0.63629 is error Iteration 600: 0.63629 error is Iteration 610: 0.63628 is error Iteration 0.63628 620: is error Iteration 0.63627 is 630: error Iteration 0.63626 640: is error Iteration 650: 0.63626 error is Iteration 0.63626 660: is error Iteration error is 0.63625 670: Iteration 0.63625 680: is error Iteration 0.63625 690: error is Iteration is 0.63625 700: error Iteration is 710: 0.63624 error Iteration is 720: 0.63624 error Iteration 730: 0.63624 is error Iteration 740: is 0.63624 error Iteration 750: is 0.63624 error Iteration is 760: 0.63624 error

Iteration is 0.63624 770: error is 0.63623 Iteration 780: error Iteration is 790: 0.63623 error Iteration 0.63623 is 800: error Iteration 0.63623 error 810: is Iteration 0.63623 820: is error Iteration 0.63623 830: is error Iteration 0.63623 is 840: error Iteration 0.63623 850: is error Iteration 0.63623 860: is error Iteration 0.63623 870: is error Iteration error is 0.63623 880: Iteration 0.63623 890: is error Iteration is 0.63623 900: error Iteration is 0.63623 910: error Iteration 920: is 0.63623 error Iteration 930: is 0.63623 error Iteration 940: is 0.63623 error Iteration 950: is 0.63623 error Iteration 960: is 0.63623 error Iteration is 970: 0.63623 error

Iteration 980: error is 0.63623

Iteration 990: error is 0.63623

Iteration 1000: error is 0.63623

J new = 0.8403

J new = 0.8264

J new = 0.8143

J new = 0.8112

J new = 0.8098

J new = 0.8054

J new = 0.8006

J new = 0.7851

J new = 0.7431

J new = 0.7416

J new = 0.7424

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.0406

Iteration 20: error is 36.9633

Iteration 30: error is 36.7766

Iteration 40: error is 37.2961

Iteration 50: is 37.4326 error is Iteration 60: 36,6668 error Iteration is 70: 36.9757 error Iteration 80: is 37.3598 error Iteration is 90: 37.4515 error Iteration 100: is 2.1184 error Iteration is 1,2541 110: error Iteration 120: is 0.83447 error Iteration 130: 0.72278 is error Iteration 140: 0.67655 error is Iteration 150: error is 0.66604 Iteration 160: error is 0.65928 Iteration 170: is 0.65442 error Iteration 0.65075 180: error is Iteration is 190: 0.64889 error Iteration 0.64577 200: is error Iteration is 0.64393 210: error Iteration 220: is 0.64245 error Iteration 230: is 0.64112 error Iteration 0.63994 240: is error Iteration 250: error is 0.63907

Iteration is 0.63762 260: error is Iteration 270: 0.63603 error Iteration is 280: 0.6349 error Iteration 290: is 0.6341 error Iteration 0.63347 error 300: is Iteration 310: is 0.63299 error Iteration 0.63261 320: is error Iteration 0.63231 is 330: error Iteration 0.63207 340: is error Iteration 350: 0.63187 is error Iteration 360: 0.63171 is error Iteration 370: error is 0.63159 Iteration 380: 0.63147 is error Iteration 390: 0.63138 error is Iteration 400: is 0.6313 error Iteration 410: is 0.63123 error Iteration is 0.63117 420: error Iteration 430: is 0.63112 error Iteration 440: is 0.63108 error Iteration 450: is 0.63104 error Iteration 460: error is 0.63101

Iteration is 0.63098 470: error 480: Iteration is 0.63095 error Iteration 490: is 0.63093 error Iteration 500: 0.63091 is error 510: Iteration error is 0.6309 Iteration 520: error 0.63088 is Iteration 0.63087 530: is error Iteration 540: is error 0.63086 Iteration 0.63085 550: is error Iteration 560: 0.63084 is error Iteration 570: 0.63083 is error Iteration error is 0.63082 580: Iteration 0.63082 590: is error Iteration is 600: 0.63081 error Iteration is 610: 0.63081 error Iteration 620: is 0.6308 error Iteration is 630: 0.6308 error Iteration 640: is 0.6308 error Iteration 650: is 0.63079 error Iteration 660: 0.63079 is error Iteration 670: is 0.63079 error

Iteration is 0.63079 680: error Iteration 690: is 0.63078 error Iteration is 700: 0.63078 error Iteration 710: 0.63078 is error Iteration 0.63078 error 720: is Iteration 730: error 0.63078 is Iteration 0.63078 740: is error Iteration is 0.63078 750: error Iteration 0.63078 760: is error Iteration 0.63077 770: error is Iteration 0.63077 780: is error Iteration error is 0.63077 790: 0.63077 Iteration 800: is error Iteration is 810: 0.63077 error Iteration is 0.63077 820: error Iteration is 830: 0.63077 error is Iteration 840: 0.63077 error Iteration 850: 0.63077 is error Iteration 860: is 0.63077 error Iteration 0.63077 is 870: error Iteration 880: is 0.63077 error

```
Iteration 890: error is 0.63077 Iteration 900: error is 0.63077
```

Iteration 910: error is 0.63077

Iteration 920: error is 0.63077

Iteration 930: error is 0.63077

Iteration 940: error is 0.63077

Iteration 950: error is 0.63077

Iteration 960: error is 0.63077

Iteration 970: error is 0.63077

Iteration 980: error is 0.63077

Iteration 990: error is 0.63077

Iteration 1000: error is 0.63077

 $J_{new} = 0.8337$

J new = 0.8188

J new = 0.8167

J new = 0.8161

J new = 0.8139

J new = 0.8119

J new = 0.8083

J new = 0.8064

J new = 0.8026

J new = 0.7908

 $J_{new} = 0.7815$

 $J_{new} = 0.7429$

J new = 0.7420

J new = 0.7426

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.7144

Iteration 20: error is 36.3957

Iteration 30: error is 36.7831

Iteration 40: error is 37.2961

Iteration 50: error is 37.013

Iteration 60: error is 36.7316

Iteration 70: error is 37.5094

Iteration 80: error is 36.7513

Iteration 90: error is 37.1396

Iteration 100: error is 2.2085

Iteration 110: error is 1.1786

Iteration 120: error is 0.79568

Iteration 130: error is 0.70119

Iteration is 0.68244 140: error 150: is 0.67303 Iteration error is Iteration 160: 0.66632 error 170: Iteration 0.66147 is error 0.65807 Iteration error 180: is Iteration 190: 0.65533 is error Iteration 0.65316 200: is error Iteration 0.65133 is 210: error Iteration 0.64983 220: is error Iteration 0.64858 230: is error Iteration 0.64757 240: is error Iteration 0.64662 250: is error Iteration 0.64519 260: is error Iteration is 0.64363 270: error Iteration is 280: 0.64251 error Iteration 290: is 0.64169 error Iteration is 0.64062 300: error Iteration 310: is 0.64004 error Iteration 320: is 0.63966 error Iteration 330: 0.63936 is error Iteration 340: is 0.63912 error

Iteration 350: is 0.63891 error Iteration 360: is 0.63874 error Iteration is 370: 0.63859 error Iteration 380: 0.63847 error is 0.63836 Iteration error 390: is Iteration 400: 0.63827 is error Iteration 0.6382 410: is error Iteration 0.63813 is 420: error Iteration 430: 0.63808 is error Iteration 0.63803 440: error is Iteration 450: 0.63799 is error Iteration error is 0.63795 460: 0.63791 Iteration 470: is error Iteration is 0.63787 480: error Iteration is 0.63785 490: error Iteration 500: is 0.63782 error Iteration 510: is 0.6378 error Iteration 520: is 0.63779 error Iteration 530: is 0.63777 error Iteration 540: 0.63776 is error Iteration 550: is 0.63775 error

Iteration 560: is 0.63774 error Iteration 570: is 0.63773 error Iteration 580: error is 0.63772 Iteration 590: 0.63771 is error 600: Iteration error is 0.6377 Iteration 610: error 0.6377 is Iteration 0.63769 620: is error Iteration 0.63769 is 630: error Iteration 0.63768 640: is error Iteration 650: 0.63768 error is Iteration 0.63767 660: is error Iteration 0.63767 670: is error Iteration 680: is 0.63767 error Iteration is 690: 0.63766 error Iteration is 0.63766 700: error Iteration is 710: 0.63766 error Iteration is 720: 0.63766 error Iteration 730: is 0.63766 error Iteration 740: is 0.63765 error Iteration 750: 0.63765 is error Iteration 760: is 0.63765 error

Iteration is 0.63765 770: error Iteration 780: is 0.63765 error Iteration is 790: 0.63765 error Iteration is 0.63765 800: error Iteration 0.63765 error 810: is Iteration 820: 0.63764 is error Iteration 0.63764 830: is error Iteration 0.63764 is 840: error Iteration 0.63764 850: is error Iteration 0.63764 860: error is Iteration 0.63764 870: is error Iteration error is 0.63764 880: Iteration 890: is 0.63764 error Iteration is 900: 0.63764 error Iteration is 0.63764 910: error Iteration is 920: 0.63764 error Iteration is 930: 0.63764 error Iteration 940: is 0.63764 error Iteration 950: is 0.63764 error Iteration 960: is 0.63764 error Iteration 970: is 0.63764 error

Iteration 980: error is 0.63764

Iteration 990: error is 0.63764

Iteration 1000: error is 0.63764

J new = 0.8418

J new = 0.8272

J new = 0.8144

J new = 0.8112

J new = 0.8098

J new = 0.8054

J new = 0.8006

J new = 0.7851

J new = 0.7431

J new = 0.7416

J new = 0.7424

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9294

Iteration 20: error is 36.613

Iteration 30: error is 36.5516

Iteration 40: error is 37.1383

Iteration is 36.606 50: error is 37.5748 Iteration 60: error Iteration is 70: 37.4938 error Iteration 80: is 36.9752 error Iteration is 90: 36.8942 error Iteration 100: 2.2612 is error Iteration is 1,2864 110: error Iteration is 0.86115 120: error Iteration 0.73306 130: is error Iteration 140: 0.67962 error is Iteration 150: 0.66796 error is Iteration 160: error is 0.66135 error is 0.65675 Iteration 170: Iteration 0.65312 180: error is Iteration is 190: 0.65028 error Iteration is 200: 0.64816 error Iteration is 210: 0.64618 error Iteration 220: 0.64464 is error Iteration 230: is 0.64339 error Iteration 0.64234 is 240: error Iteration 250: error is 0.64154

Iteration is 0.64009 260: error is 0.63863 Iteration 270: error is Iteration 280: 0.63752 error Iteration 290: 0.63667 is error Iteration error 300: is 0.63604 Iteration 310: 0.63555 is error Iteration 0.63516 320: is error Iteration 0.63486 is 330: error Iteration 0.63461 340: is error Iteration 350: 0.63441 is error Iteration 360: 0.63424 is error Iteration 370: error is 0.6341 Iteration 380: 0.63399 is error Iteration 390: is 0.63389 error Iteration is 0.63381 400: error Iteration is 410: 0.63374 error Iteration is 0.63368 420: error Iteration 430: is 0.63363 error Iteration 440: is 0.63358 error Iteration 450: 0.63354 is error Iteration 460: is 0.63351 error

Iteration is 0.63348 470: error 0.63345 Iteration 480: is error Iteration is 490: 0.63343 error Iteration 500: is 0.63341 error 510: Iteration is 0.63339 error Iteration 520: is 0.63338 error Iteration 0.63336 530: is error Iteration 0.63335 540: is error Iteration 550: 0.63334 is error Iteration 560: 0.63333 is error Iteration 570: 0.63332 is error Iteration error is 0.63332 580: Iteration 0.63331 590: is error Iteration is 0.63331 600: error Iteration is 610: 0.6333 error Iteration 620: is 0.6333 error Iteration is 0.63329 630: error Iteration 640: is 0.63329 error Iteration 650: is 0.63329 error Iteration 660: 0.63328 is error Iteration 670: is 0.63328 error

Iteration 680: is 0.63328 error 0.63328 Iteration 690: is error Iteration 700: is 0.63327 error Iteration 710: 0.63327 is error Iteration 0.63327 error 720: is Iteration 730: 0.63327 is error Iteration 0.63327 740: is error Iteration 0.63327 is 750: error Iteration 0.63327 760: is error Iteration 0.63326 770: error is Iteration 0.63326 780: is error Iteration error is 0.63326 790: Iteration 0.63326 800: is error Iteration is 810: 0.63326 error Iteration is 0.63326 820: error Iteration is 830: 0.63326 error is Iteration 840: 0.63326 error Iteration 850: 0.63326 is error Iteration 860: is 0.63326 error Iteration 0.63326 is 870: error Iteration 880: is 0.63326 error

```
Iteration 890: error is 0.63326
```

$$J \text{ new} = 0.8433$$

J new =
$$0.8272$$

J new =
$$0.8165$$

J new =
$$0.8150$$

J new =
$$0.8145$$

J new =
$$0.8108$$

$$J new = 0.8088$$

$$J new = 0.8052$$

$$J \text{ new} = 0.8031$$

J new = 0.7896

J new = 0.7820

 $J_{new} = 0.7418$

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.0759

Iteration 20: error is 37.0911

Iteration 30: error is 36.3741

Iteration 40: error is 36.617

Iteration 50: error is 36.5552

Iteration 60: error is 37.0265

Iteration 70: error is 37.6932

Iteration 80: error is 37.9738

Iteration 90: error is 37.8111

Iteration 100: error is 2.2009

Iteration 110: error is 1.4102

Iteration 120: error is 0.97144

Iteration 130: error is 0.86485

Iteration 140: error is 0.74726

Iteration 150: is 0.72871 error 0.69472 Iteration 160: is error Iteration is 170: 0.66922 error Iteration 180: 0.66536 is error Iteration error 0.66248 190: is Iteration 200: 0.66023 is error Iteration 0.65837 210: is error Iteration 0.6569 is 220: error Iteration is 0.65566 230: error Iteration 0.6546 240: is error Iteration 250: 0.6537 is error Iteration error is 260: 0.65228 0.65079 Iteration 270: is error Iteration is 280: 0.64971 error Iteration is 0.6489 290: error Iteration is 0.64819 300: error is Iteration 310: 0.64421 error Iteration 320: is 0.63743 error Iteration 330: is 0.63701 error Iteration 0.63363 340: is error Iteration 350: is 0.63309 error

Iteration 360: is 0.63278 error is 0.63254 Iteration 370: error Iteration is 380: 0.63241 error Iteration 390: 0.63229 is error Iteration error 400: is 0.6322 Iteration 410: 0.6321 is error Iteration 0.63202 420: is error Iteration 0.63196 is 430: error Iteration 0.63191 is 440: error Iteration 450: 0.63186 is error Iteration 460: 0.63181 is error Iteration error is 0.63178 470: Iteration 0.63174 480: is error Iteration is 490: 0.63172 error Iteration 500: is 0.63169 error Iteration 510: is 0.63167 error is Iteration 520: 0.63165 error Iteration 530: 0.63163 is error Iteration 540: is 0.63162 error Iteration 550: 0.63161 is error Iteration 560: is 0.6316 error

Iteration 570: is 0.63159 error 0.63158 Iteration 580: is error Iteration is 590: 0.63157 error Iteration 600: is 0.63156 error 610: Iteration is 0.63156 error Iteration 620: is 0.63155 error Iteration 0.63154 630: is error Iteration 0.63154 is 640: error Iteration 0.63154 650: is error Iteration is 0.63153 660: error Iteration 670: 0.63153 is error Iteration error is 0.63153 680: Iteration 0.63152 690: is error Iteration is 0.63152 700: error Iteration is 0.63152 710: error Iteration is 0.63152 720: error Iteration is 0.63152 730: error Iteration 740: is 0.63151 error Iteration 0.63151 750: is error Iteration 760: 0.63151 is error Iteration 770: is 0.63151 error

Iteration is 0.63151 780: error Iteration 0.63151 790: is error Iteration 0.63151 is 800: error Iteration 0.63151 810: is error 0.63151 Iteration is error 820: Iteration 830: is 0.63151 error Iteration 0.63151 840: is error Iteration 0.63151 850: is error Iteration 0.63151 860: is error Iteration 0.63151 870: is error Iteration 0.63151 880: is error Iteration error is 0.6315 890: Iteration is 0.6315 900: error Iteration 910: error is 0.6315 Iteration 920: is 0.6315 error Iteration 930: is 0.6315 error Iteration 940: is 0.6315 error Iteration 950: is 0.6315 error Iteration 960: is 0.6315 error Iteration 0.6315 is 970: error Iteration 980: error is 0.6315

Iteration 990: error is 0.6315

Iteration 1000: error is 0.6315

J new = 0.8438

J new = 0.8275

J new = 0.8163

J new = 0.8143

J new = 0.8118

J new = 0.8075

J new = 0.8059

J new = 0.8014

J new = 0.7861

J new = 0.7421

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9486

Iteration 20: error is 37.028

Iteration 30: error is 36.7487

Iteration 40: error is 37.0932

Iteration 50: error is 37.1127

Iteration is 36.9593 60: error is 37.3993 Iteration 70: error is Iteration 80: 37,2212 error Iteration 90: is 37.3858 error Iteration 100: is 2.4372 error Iteration 1.2579 110: is error Iteration 120: 1.0035 is error Iteration error is 0.81558 130: Iteration 0.75164 140: is error Iteration 150: 0.71645 error is Iteration 160: 0.68568 error is Iteration error is 0.66501 170: error is Iteration 180: 0.66029 Iteration 0.65768 190: error is Iteration is 200: 0.65556 error Iteration is 210: 0.65386 error Iteration is 220: 0.6525 error Iteration 230: is 0.65133 error Iteration 0.65034 240: is error Iteration 250: 0.6495 is error Iteration error is 260: 0.64816

Iteration is 0.64671 270: error 0.64568 Iteration 280: is error Iteration is 290: 0.64493 error Iteration 300: 0.64437 error is Iteration 0.64392 error 310: is Iteration 320: error 0.64356 is Iteration 0.64327 330: is error Iteration 0.64304 is 340: error Iteration 0.64286 350: is error Iteration 360: 0.64271 error is Iteration 370: 0.64258 error is 0.64248 Iteration 380: error is Iteration 390: is 0.6424 error Iteration 400: error is 0.64232 Iteration is 0.64225 410: error Iteration 420: is 0.6422 error Iteration is 0.64215 430: error Iteration is 0.64211 440: error Iteration 450: is 0.64207 error Iteration 460: 0.64204 is error Iteration 470: error is 0.64201

Iteration is 0.64199 480: error 0.64197 Iteration 490: is error Iteration is 500: 0.64195 error 0.64193 Iteration 510: is error 520: Iteration 0.64192 error is Iteration 530: error 0.64191 is Iteration 540: 0.6419 is error Iteration 0.64189 550: is error 560: Iteration 0.64188 is error Iteration 570: is 0.64187 error Iteration 580: 0.64186 is error Iteration 590: error is 0.64186 Iteration 0.64185 600: is error Iteration is 0.64185 610: error Iteration is 620: 0.64184 error Iteration 630: is 0.64184 error Iteration is 0.64184 640: error Iteration 650: is 0.64183 error Iteration 660: is 0.64183 error Iteration 670: 0.64183 is error Iteration 680: is 0.64183 error

Iteration is 0.64182 690: error Iteration 0.64182 700: is error Iteration is 710: 0.64182 error Iteration 720: 0.64182 error is 0.64182 Iteration 730: error is Iteration error 0.64182 740: is Iteration 0.64182 750: is error Iteration 760: is 0.64181 error Iteration 0.64181 770: is error Iteration 0.64181 780: error is Iteration 0.64181 790: is error Iteration error is 0.64181 800: Iteration 810: is 0.64181 error Iteration is 820: 0.64181 error Iteration 830: is 0.64181 error Iteration 840: is 0.64181 error Iteration is 850: 0.64181 error Iteration 860: is 0.64181 error Iteration 870: is 0.64181 error Iteration 0.64181 is 880: error Iteration 0.64181 890: is error

```
Iteration 900: error is 0.64181
```

J new =
$$0.8445$$

J new =
$$0.8275$$

J new =
$$0.8175$$

J new =
$$0.8164$$

J new =
$$0.8160$$

J new =
$$0.8138$$

J new =
$$0.8119$$

$$J \text{ new} = 0.8083$$

$$J new = 0.8064$$

$$J \text{ new} = 0.8026$$

J new = 0.7908

 $J_{new} = 0.7815$

 $J_{new} = 0.7429$

J new = 0.7420

J new = 0.7426

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.2155

Iteration 20: error is 37.0698

Iteration 30: error is 36.3951

Iteration 40: error is 36.6675

Iteration 50: error is 37.0864

Iteration 60: error is 37.3494

Iteration 70: error is 37.6428

Iteration 80: error is 37.2113

Iteration 90: error is 37.2301

Iteration 100: error is 2.1775

Iteration 110: error is 1.2553

Iteration 120: error is 0.83043

Iteration 130: error is 0.72738

Iteration is 0.68736 140: error 150: is Iteration 0.67756 error Iteration 160: is 0.67118 error 170: Iteration 0.66646 error is Iteration 0.66297 error 180: is Iteration 190: 0.66024 is error Iteration 0.6581 200: is error Iteration 0.65634 is 210: error Iteration 0.65488 220: is error Iteration 0.65369 230: is error Iteration 0.65267 240: is error Iteration error is 0.65178 250: Iteration 0.65033 260: is error Iteration is 270: 0.64877 error Iteration is 280: 0.64767 error Iteration is 290: 0.6469 error Iteration 300: is 0.64625 error Iteration 310: is 0.6458 error Iteration 320: is 0.64544 error Iteration 330: 0.64515 is error Iteration 340: is 0.6449 error

Iteration 350: is 0.64471 error 0.64455 Iteration 360: is error Iteration 370: is 0.64441 error Iteration 380: 0.6443 is error Iteration 390: 0.64421 error is Iteration 400: 0.64412 is error Iteration 0.64405 410: is error Iteration 0.64399 is 420: error Iteration 430: 0.64394 is error Iteration is 0.6439 440: error Iteration 450: 0.64386 error is Iteration error is 0.64383 460: Iteration 470: error is 0.6438 Iteration 480: error is 0.64377 Iteration is 0.64375 490: error Iteration 500: is 0.64373 error Iteration 510: is 0.64371 error Iteration 520: is 0.6437 error Iteration 530: 0.64368 is error Iteration 540: 0.64367 is error Iteration error is 550: 0.64366

Iteration 560: is 0.64365 error 0.64364 Iteration 570: is error Iteration 580: is 0.64364 error Iteration 590: 0.64363 is error 0.64362 Iteration 600: error is Iteration 610: error 0.64362 is Iteration 0.64361 620: is error Iteration 0.64361 is 630: error Iteration 0.64361 640: is error Iteration 650: 0.6436 error is Iteration 0.6436 660: is error Iteration error is 0.6436 670: Iteration 680: is 0.6436 error Iteration is 690: 0.64359 error Iteration is 0.64359 700: error Iteration 0.64359 710: is error Iteration is 0.64359 720: error Iteration 730: is 0.64359 error Iteration 0.64359 740: is error Iteration 750: 0.64358 is error Iteration 760: is 0.64358 error

Iteration is 0.64358 770: error Iteration 0.64358 780: is error Iteration is 790: 0.64358 error Iteration 0.64358 800: is error Iteration is 0.64358 error 810: Iteration 0.64358 820: is error Iteration 0.64358 830: is error Iteration 0.64358 is 840: error Iteration 0.64358 850: is error Iteration is 0.64358 860: error Iteration 870: 0.64358 is error Iteration 0.64358 880: is error Iteration 0.64358 890: is error Iteration is 0.64358 900: error Iteration is 0.64358 910: error Iteration 920: 0.64358 is error Iteration 930: is 0.64358 error Iteration 940: is 0.64358 error Iteration 0.64358 950: is error Iteration 960: 0.64358 is error Iteration 970: is 0.64358 error

Iteration 980: error is 0.64358

Iteration 990: error is 0.64358

Iteration 1000: error is 0.64358

J new = 0.8581

J new = 0.8277

J new = 0.8162

J new = 0.8142

J new = 0.8120

J new = 0.8081

J new = 0.8065

J new = 0.8025

J new = 0.7909

J new = 0.7814

J new = 0.7431

J new = 0.7419

J new = 0.7428

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.8041

Iteration 20: error is 36.8925

Iteration 30: error is 36.6773

Iteration 40: error is 36.9079

Iteration 50: error is 37.001

Iteration 60: error is 36.9916

Iteration 70: error is 36.5

Iteration 80: error is 36.9617

Iteration 90: error is 37.45

Iteration 100: error is 2.1633

Iteration 110: error is 1.2195

Iteration 120: error is 0.89819

Iteration 130: error is 0.72012

Iteration 140: error is 0.67534

Iteration 150: error is 0.66253

Iteration 160: error is 0.65399

Iteration 170: error is 0.64835

Iteration 180: error is 0.64501

Iteration 190: error is 0.6422

Iteration 200: error is 0.64002

Iteration 210: error is 0.63817

Iteration 220: error is 0.6367

Iteration 230: error is 0.63546

Iteration is 0.63442 240: error Iteration 250: is 0.63354 error Iteration 260: is 0.63214 error Iteration 270: is 0.63056 error 0.62943 Iteration error 280: is Iteration 290: 0.62863 is error Iteration is 300: 0.628 error Iteration is 0.62749 310: error Iteration 0.62711 320: is error Iteration 330: is 0.6268 error Iteration 340: 0.62654 is error Iteration 350: error is 0.62632 0.62615 Iteration 360: is error Iteration 370: 0.62601 error is Iteration 380: is 0.62589 error Iteration 390: is 0.62578 error Iteration is 0.62569 400: error Iteration 410: is 0.62562 error Iteration 420: is 0.62556 error Iteration 430: 0.6255 is error Iteration 440: error is 0.62545

Iteration 450: is 0.62541 error 0.62537 Iteration 460: is error Iteration is 470: 0.62534 error Iteration 480: is 0.62531 error 0.62528 Iteration is 490: error Iteration 0.62526 500: is error Iteration 0.62524 510: is error Iteration 0.62523 520: is error Iteration 0.62521 530: is error Iteration 540: is 0.6252 error Iteration 550: 0.62519 is error Iteration 560: error is 0.62517 0.62517 Iteration 570: is error Iteration 580: is 0.62516 error Iteration 590: is 0.62515 error Iteration 600: is 0.62514 error Iteration is 610: 0.62514 error Iteration 620: is 0.62513 error Iteration 0.62513 630: is error Iteration 640: 0.62512 is error Iteration 650: is 0.62512 error

Iteration 660: is 0.62511 error Iteration 670: is 0.62511 error Iteration 680: is 0.62511 error Iteration 690: is 0.62511 error Iteration is 0.6251 error 700: Iteration 0.6251 710: error is Iteration 0.6251 720: is error Iteration is 0.6251 730: error Iteration 0.6251 740: is error Iteration 750: is 0.6251 error Iteration 0.62509 error is 760: Iteration error is 770: 0.62509 Iteration error is 780: 0.62509 Iteration error is 0.62509 790: Iteration is 0.62509 800: error Iteration 810: is 0.62509 error Iteration 820: is 0.62509 error Iteration 830: is 0.62509 error Iteration 840: is 0.62509 error Iteration 850: 0.62509 is error Iteration error is 860: 0.62509

```
Iteration 870: error is 0.62509
```

J new =
$$0.8707$$

$$J new = 0.8456$$

J new =
$$0.8216$$

J new =
$$0.8097$$

J new =
$$0.8063$$

$$J \text{ new} = 0.8014$$

J new =
$$0.7857$$

J new = 0.7434

J new = 0.7420

 $J_{new} = 0.7426$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.9661

Iteration 20: error is 36.8949

Iteration 30: error is 36.7596

Iteration 40: error is 36.8484

Iteration 50: error is 37.3603

Iteration 60: error is 37.3691

Iteration 70: error is 37.3519

Iteration 80: error is 37.4676

Iteration 90: error is 37.1931

Iteration 100: error is 2.1281

Iteration 110: error is 1.104

Iteration 120: error is 0.84851

Iteration 130: error is 0.70205

Iteration 140: error is 0.67538

Iteration 150: error is 0.66496

Iteration is 0.65774 160: error Iteration 170: is 0.65289 error Iteration 0.64879 180: is error Iteration 0.64581 190: is error 0.64349 Iteration is error 200: Iteration 210: is 0.64161 error Iteration 220: is 0.6401 error Iteration 0.63879 is 230: error Iteration 0.63774 240: is error Iteration 250: is 0.63678 error Iteration 0.63533 260: is error Iteration error is 0.63379 270: 0.63264 Iteration 280: is error Iteration 0.63177 290: error is Iteration 300: is 0.63112 error Iteration 310: is 0.63061 error is Iteration 320: 0.63017 error Iteration 330: is 0.62986 error Iteration 340: is 0.62962 error Iteration 350: 0.62941 is error Iteration 360: is 0.62924 error

Iteration 370: is 0.6291 error Iteration 380: is 0.62898 error Iteration is 390: 0.62887 error Iteration 400: 0.62873 error is Iteration 0.62835 error 410: is Iteration 420: error is 0.62823 Iteration 0.62817 430: is error Iteration is 0.62813 440: error Iteration 450: is 0.62808 error Iteration 0.62805 460: error is Iteration 470: 0.62801 is error Iteration error is 480: 0.62798 Iteration 490: is 0.62796 error Iteration 500: 0.62794 error is Iteration 510: is 0.62792 error Iteration 520: is 0.6279 error is Iteration 530: 0.62788 error Iteration 540: is 0.62787 error Iteration 550: is 0.62786 error Iteration 560: 0.62785 is error Iteration 570: is 0.62784 error

Iteration 580: is 0.62783 error Iteration 590: is 0.62782 error Iteration is 600: 0.62782 error Iteration is 610: 0.62781 error Iteration 0.62781 620: error is Iteration 630: 0.6278 is error Iteration 0.6278 640: is error Iteration 650: is 0.6278 error Iteration 0.62779 660: is error Iteration 0.62779 670: error is Iteration 0.62779 680: is error Iteration error is 690: 0.62778 Iteration 700: is 0.62778 error Iteration 0.62778 710: is error Iteration is 0.62778 720: error Iteration 730: is 0.62778 error Iteration 740: is 0.62778 error Iteration 750: is 0.62777 error Iteration 760: is 0.62777 error Iteration 0.62777 770: is error Iteration 780: is 0.62777 error

Iteration is 0.62777 790: error Iteration 800: is 0.62777 error Iteration 810: is 0.62777 error Iteration 820: 0.62777 is error Iteration 0.62777 error 830: is Iteration 840: 0.62777 is error Iteration 850: 0.62777 error is Iteration 860: is 0.62777 error Iteration 870: 0.62777 is error Iteration 0.62777 880: error is Iteration 0.62777 890: is error Iteration error is 900: 0.62777 Iteration 910: is 0.62777 error Iteration 0.62777 920: is error Iteration is 930: 0.62777 error Iteration 940: is 0.62777 error Iteration is 950: 0.62777 error Iteration 960: 0.62777 is error Iteration 970: is 0.62777 error Iteration 0.62777 980: is error Iteration 990: is 0.62777 error

Iteration 1000: error is 0.62777 J new = 0.8869J new = 0.8686J new = 0.8423J new = 0.8323J new = 0.8245J new = 0.8231J new = 0.8236Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.0031 Iteration 20: error is 37.07 Iteration 30: error is 36.98 Iteration 40: error is 37.1515 Iteration 50: error is 37.1054 Iteration 60: error is 37.673 Iteration 70: error is 37.7294 Iteration 80: error is 37.4417 Iteration 90: error is 37.7253 Iteration 100: error is 2.3627

Iteration is 110: 1.3071 error is Iteration 120: 0.91144 error Iteration 130: 0.79092 is error Iteration 140: 0.76544 error is Iteration 150: is 0.72054 error Iteration 0.66075 160: is error Iteration 170: 0.64912 is error Iteration 0.64509 180: is error Iteration 0.64336 190: is error Iteration is 0.6404 200: error Iteration 0.6387 210: is error 0.63727 Iteration error is 220: Iteration 230: is 0.63604 error Iteration is 240: 0.63503 error Iteration is 250: 0.63414 error Iteration 260: is 0.63272 error Iteration is 0.63124 270: error Iteration 280: is 0.63014 error Iteration 290: is 0.62931 error Iteration 0.62865 is 300: error Iteration 310: is 0.62815 error

Iteration 320: is 0.62776 error Iteration 330: is 0.62743 error Iteration 340: is 0.62717 error Iteration 350: is 0.62696 error Iteration 360: 0.62678 error is Iteration 370: error 0.62664 is Iteration 0.62651 380: is error Iteration is 0.62641 390: error Iteration 0.62632 is 400: error Iteration 0.62624 410: error is Iteration 0.62618 420: is error Iteration error is 0.62612 430: 0.62607 Iteration 440: is error Iteration 450: error is 0.62603 Iteration 460: is 0.62599 error Iteration 470: is 0.62596 error Iteration is 0.62593 480: error Iteration 490: is 0.6259 error Iteration 0.62588 500: is error Iteration 510: 0.62586 is error Iteration 520: error is 0.62585

Iteration 530: is 0.62583 error Iteration 540: is 0.62582 error Iteration 550: 0.62581 is error Iteration 560: is 0.6258 error Iteration 570: is 0.62579 error Iteration is 0.62578 580: error Iteration 0.62577 590: is error Iteration 600: is 0.62576 error Iteration 610: 0.62576 is error Iteration 620: 0.62575 is error Iteration 630: 0.62575 is error Iteration error is 640: 0.62574 Iteration 650: is 0.62574 error Iteration 0.62574 660: is error Iteration is 0.62573 670: error Iteration 680: is 0.62573 error Iteration is 690: 0.62573 error Iteration 700: is 0.62573 error Iteration 0.62572 710: is error Iteration 720: 0.62572 is error Iteration 730: is 0.62572 error

Iteration is 0.62572 740: error Iteration 750: is 0.62572 error Iteration 760: error is 0.62572 Iteration 770: is 0.62572 error Iteration 0.62572 error 780: is Iteration 0.62571 790: is error Iteration 0.62571 800: is error Iteration is 0.62571 810: error Iteration 0.62571 is 820: error Iteration 0.62571 830: error is Iteration 0.62571 840: is error Iteration error is 850: 0.62571 Iteration 860: is 0.62571 error Iteration 0.62571 870: is error Iteration is 880: 0.62571 error Iteration 890: is 0.62571 error Iteration is 900: 0.62571 error Iteration 0.62571 910: is error 0.62571 Iteration 920: is error Iteration 0.62571 930: is error Iteration 940: error is 0.62571

- Iteration 950: error is 0.62571
- Iteration 960: error is 0.62571
- Iteration 970: error is 0.62571
- Iteration 980: error is 0.62571
- Iteration 990: error is 0.62571
- Iteration 1000: error is 0.62571
- J new = 0.8445
- J new = 0.8286
- J new = 0.8175
- J new = 0.8161
- J new = 0.8157
- J new = 0.8134
- J new = 0.8116
- J new = 0.8079
- J new = 0.8061
- J new = 0.8022
- J new = 0.7905
- J new = 0.7811
- J new = 0.7427
- $J_{new} = 0.7416$
- J new = 0.7424

Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 40.3024 Iteration 20: error is 36.3673 Iteration 30: error is 36.5907 Iteration 40: error is 37.3132 Iteration 50: error is 37.5048 Iteration 60: error is 37.4122 Iteration 70: error is 36.8569 Iteration 80: error is 37.3148 Iteration 90: error is 37.0435 Iteration 100: error is 2.3376 Iteration 110: error is 1.2815 error is 0.82773 Iteration 120: Iteration 130: error is 0.71003 Iteration 140: error is 0.67995 Iteration 150: error is 0.67 Iteration 160: error is 0.66267 Iteration 170: error is 0.65769

error is 0.6542

Iteration 180:

Iteration is 0.65125 190: error 0.64909 Iteration 200: is error Iteration 0.64708 is 210: error Iteration 0.64547 220: is error 0.64423 Iteration is error 230: Iteration 240: 0.64311 is error Iteration 250: 0.64229 is error Iteration 260: is 0.64074 error Iteration 0.63923 270: is error Iteration 0.63809 280: error is Iteration 0.63725 290: is error Iteration 300: error is 0.63661 Iteration 310: is 0.6361 error Iteration 320: is 0.6357 error Iteration 330: is 0.63539 error Iteration 340: is 0.63506 error is Iteration 350: 0.63484 error Iteration 360: 0.63466 is error Iteration 370: is 0.63452 error Iteration 0.63439 is 380: error Iteration 390: is 0.63429 error

Iteration 400: is 0.6342 error Iteration 410: is 0.63412 error Iteration 420: is 0.63405 error Iteration 430: is 0.634 error Iteration is 0.63395 error 440: Iteration 450: error is 0.63391 Iteration 0.63387 460: is error Iteration 0.63384 is 470: error Iteration 0.63381 is 480: error Iteration 0.63378 490: error is Iteration 500: 0.63376 is error 0.63374 Iteration 510: error is Iteration 520: is 0.63372 error Iteration 530: is 0.63371 error Iteration 540: is 0.6337 error Iteration 550: is 0.63369 error is Iteration 560: 0.63367 error Iteration 570: is 0.63367 error Iteration 580: is 0.63366 error Iteration 0.63365 is 590: error Iteration 0.63364 600: error is

Iteration 610: is 0.63364 error Iteration 620: is 0.63363 error Iteration is 630: 0.63363 error Iteration 0.63362 640: is error 650: Iteration error is 0.63362 Iteration 660: error 0.63362 is Iteration 0.63361 670: is error Iteration 680: is 0.63361 error Iteration 0.63361 690: is error Iteration 0.63361 700: error is 0.63361 Iteration 710: is error Iteration error is 0.6336 720: Iteration error is 730: 0.6336 Iteration 740: error is 0.6336 Iteration is 750: 0.6336 error Iteration 760: is 0.6336 error Iteration is 770: 0.6336 error Iteration 780: is 0.6336 error Iteration 790: is 0.6336 error Iteration is 0.6336 800: error Iteration 810: error is 0.6336

Iteration 820: error is 0.63359 Iteration 830: error is 0.63359 error is 0.63359 Iteration 840: Iteration 850: error is 0.63359 Iteration 860: error is 0.63359 Iteration 870: error is 0.63359 Iteration 880: error is 0.63359 Iteration 890: error is 0.63359 Iteration 900: error is 0.63359 Iteration 910: error is 0.63359 Iteration 920: error is 0.63359 Iteration 930: error is 0.63359 Iteration 940: error is 0.63359 Iteration 950: error is 0.63359 error is 0.63359 Iteration 960: Iteration 970: error is 0.63359 Iteration 980: error is 0.63359 Iteration 990: error is 0.63359 Iteration 1000: error is 0.63359 J new = 0.8434J new = 0.8271

- J new = 0.8160
- J new = 0.8142
- J new = 0.8120
- J new = 0.8081
- J new = 0.8065
- J new = 0.8025
- J new = 0.7909
- J new = 0.7814
- J new = 0.7431
- J new = 0.7419
- J new = 0.7428
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 40.5301
- Iteration 20: error is 37.6972
- Iteration 30: error is 37.424
- Iteration 40: error is 37.3783
- Iteration 50: error is 37.2019
- Iteration 60: error is 37.8305
- Iteration 70: error is 37.8486

Iteration 80: is 37.4663 error is 37.3881 Iteration 90: error Iteration is 100: 2.3311 error Iteration 110: is 1.1357 error 0.76345 Iteration is error 120: Iteration 0.70065 error is 130: Iteration 140: 0.68252 is error Iteration 150: is 0.67227 error Iteration 160: 0.66534 is error Iteration 170: 0.66014 error is Iteration 180: 0.65647 error is Iteration error is 190: 0.65362 Iteration error is 200: 0.65149 Iteration 210: error is 0.6496 Iteration is 0.64812 220: error Iteration is 230: 0.64688 error Iteration is 0.64575 240: error Iteration 250: 0.64484 is error Iteration 260: is 0.64339 error Iteration 0.64186 is 270: error Iteration 280: error is 0.64078

Iteration is 0.64001 290: error 0.63938 Iteration 300: is error Iteration 310: is 0.63889 error Iteration 320: 0.63851 is error Iteration 330: is 0.63819 error Iteration 340: 0.63792 is error Iteration 350: 0.63762 is error Iteration 0.63715 360: is error Iteration 0.6369 370: is error Iteration is 0.63675 380: error Iteration 390: 0.63665 is error Iteration error is 0.63657 400: Iteration 410: is 0.6365 error Iteration 0.63643 420: error is Iteration 430: is 0.63637 error Iteration is 440: 0.63632 error Iteration is 450: 0.63627 error Iteration 460: 0.63623 is error Iteration 470: is 0.6362 error Iteration 480: 0.63617 is error Iteration 490: error is 0.63615

Iteration 500: is 0.63613 error Iteration 510: is 0.63611 error is Iteration 520: 0.63609 error Iteration 530: 0.63607 is error 540: Iteration error 0.63606 is Iteration 550: 0.63605 is error Iteration 560: 0.63604 is error Iteration 0.63603 570: is error Iteration 0.63602 580: is error Iteration 590: 0.63602 error is Iteration 0.63601 is 600: error Iteration error is 610: 0.636 Iteration is 620: 0.636 error Iteration is 630: 0.636 error Iteration is 0.63599 640: error Iteration is 650: 0.63599 error Iteration is 0.63599 660: error Iteration 670: is 0.63598 error Iteration 0.63598 680: is error Iteration 690: 0.63598 is error Iteration 700: is 0.63598 error

Iteration 710: is 0.63598 error Iteration 0.63597 720: is error Iteration is 730: 0.63597 error Iteration is 740: 0.63597 error Iteration is 0.63597 750: error Iteration 760: error 0.63597 is Iteration 0.63597 770: error is Iteration is 0.63597 780: error Iteration 0.63597 is 790: error Iteration 0.63597 800: error is Iteration 0.63597 810: is error Iteration 820: is 0.63597 error 0.63596 Iteration 830: is error Iteration is 0.63596 840: error Iteration is 850: 0.63596 error Iteration 860: is 0.63596 error Iteration is 870: 0.63596 error Iteration 880: 0.63596 is error Iteration 890: is 0.63596 error Iteration 0.63596 900: is error Iteration 910: is 0.63596 error

```
Iteration 920: error is 0.63596
```

Iteration 930: error is 0.63596

Iteration 940: error is 0.63596

Iteration 950: error is 0.63596

Iteration 960: error is 0.63596

Iteration 970: error is 0.63596

Iteration 980: error is 0.63596

Iteration 990: error is 0.63596

Iteration 1000: error is 0.63596

J new = 0.8042

J new = 0.7908

J new = 0.7674

J new = 0.7511

J new = 0.7402

J new = 0.7398

J new = 0.7398

J new = 0.7392

 $J_{new} = 0.7398$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: is 39.4366 error is 37.0376 Iteration 20: error Iteration is 30: 37.8628 error Iteration 40: is 37.1371 error Iteration 37.1199 50: is error Iteration 60: is 37.5163 error Iteration 70: is 37,6474 error Iteration is 80: 37.9021 error Iteration is 38.4747 90: error Iteration is 2.406 100: error Iteration 110: 1.2224 is error Iteration 120: error is 0.89284 error is Iteration 130: 0.78947 Iteration 140: error is 0.70578 Iteration 150: is 0.67772 error Iteration 160: is 0.67077 error is Iteration 170: 0.66607 error Iteration 180: is 0.66278 error Iteration 190: is 0.65994 error Iteration 0.65807 is 200: error Iteration 210: error is 0.65608

Iteration is 0.65463 220: error 0.65334 Iteration 230: is error Iteration 240: is 0.65228 error Iteration 0.65137 250: is error 260: Iteration is 0.64993 error Iteration 0.64838 270: is error Iteration 0.64729 280: is error Iteration is 0.6465 290: error Iteration 0.64588 is 300: error Iteration 0.64541 310: is error Iteration 320: 0.64504 is error Iteration 330: error is 0.64476 Iteration 340: 0.64451 is error Iteration 350: is 0.64432 error Iteration 360: is 0.64416 error Iteration 370: is 0.64403 error Iteration 380: is 0.64392 error Iteration 390: is 0.64383 error Iteration 400: is 0.64375 error Iteration 410: 0.64368 is error Iteration 0.64362 420: is error

Iteration 430: is 0.64357 error 0.64353 Iteration 440: is error Iteration is 450: 0.64349 error Iteration 460: is 0.64346 error 0.64343 Iteration is 470: error Iteration 480: error is 0.64341 Iteration 0.64338 490: is error Iteration 0.64337 is 500: error Iteration 0.64335 510: is error Iteration 520: is 0.64334 error Iteration 530: 0.64332 is error Iteration 540: error is 0.64331 550: Iteration is 0.6433 error Iteration 560: is 0.64329 error Iteration is 570: 0.64329 error Iteration 580: is 0.64328 error Iteration is 0.64327 590: error Iteration 600: is 0.64327 error Iteration 610: is 0.64326 error Iteration 620: 0.64326 is error Iteration 630: is 0.64325 error

Iteration 640: is 0.64325 error Iteration 0.64325 650: is error Iteration 0.64325 660: is error Iteration 670: is 0.64324 error Iteration is 0.64324 680: error Iteration 690: error 0.64324 is Iteration 0.64324 700: error is Iteration 0.64324 710: is error Iteration 0.64324 720: is error Iteration is 0.64323 730: error Iteration 0.64323 error is 740: Iteration error is 0.64323 750: Iteration error is 0.64323 760: Iteration 0.64323 770: error is Iteration is 780: 0.64323 error Iteration 0.64323 790: is error Iteration is 0.64323 800: error Iteration 810: is 0.64323 error Iteration 820: is 0.64323 error Iteration 830: 0.64323 is error Iteration 840: error is 0.64323

```
Iteration 850: error is 0.64323
Iteration 860:
               error is 0.64323
               error is 0.64323
Iteration 870:
Iteration 880:
               error is 0.64323
Iteration 890:
               error is 0.64323
Iteration 900:
               error is 0.64323
Iteration 910:
               error is 0.64323
Iteration 920:
               error is 0.64323
Iteration 930: error is 0.64323
Iteration 940:
               error is 0.64323
Iteration 950: error is 0.64323
Iteration 960: error is 0.64323
Iteration 970: error is 0.64323
Iteration 980: error is 0.64323
Iteration 990: error is 0.64323
Iteration 1000: error is 0.64322
J new = 0.8338
J new = 0.8190
J new = 0.8171
J new = 0.8163
J \text{ new} = 0.8138
```

J new = 0.8120

J new = 0.8081

 $J_{new} = 0.8065$

J new = 0.8025

J new = 0.7909

J new = 0.7814

J new = 0.7431

J new = 0.7419

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.1308

Iteration 20: error is 37.4706

Iteration 30: error is 37.1978

Iteration 40: error is 36.5332

Iteration 50: error is 37.082

Iteration 60: error is 37.7505

Iteration 70: error is 37.9131

Iteration 80: error is 37.7436

Iteration 90: error is 37.2969

Iteration is 2.3099 100: error is Iteration 110: 1.3119 error is Iteration 120: 0.91636 error Iteration 130: is 0.82475 error 140: Iteration is 0.71039 error Iteration 0.70986 150: is error Iteration 160: 0.66911 is error Iteration 0.66313 170: is error Iteration 0.65872 180: is error Iteration 0.65467 190: is error Iteration 0.65241 200: is error Iteration error is 0.65069 210: Iteration 0.64921 220: is error Iteration is 230: 0.64802 error Iteration is 0.64697 240: error Iteration is 250: 0.64606 error Iteration is 260: 0.64466 error Iteration 270: is 0.64315 error Iteration 280: is 0.64203 error Iteration 0.64119 is 290: error Iteration 300: is 0.64058 error

Iteration 310: is 0.64012 error 0.63974 Iteration 320: is error Iteration 330: is 0.63943 error Iteration 340: is 0.63919 error Iteration 350: is error 0.639 Iteration 360: error is 0.63884 Iteration 0.63871 370: is error Iteration 380: is 0.63859 error Iteration 0.6385 is 390: error Iteration error is 0.63842 400: Iteration 0.63835 error is 410: Iteration 420: error is 0.63829 Iteration 430: error is 0.63824 Iteration 440: error is 0.6382 Iteration is 450: 0.63816 error Iteration 460: is 0.63813 error Iteration is 470: 0.6381 error Iteration 480: is 0.63807 error Iteration 490: is 0.63805 error Iteration 500: is 0.63803 error Iteration error is 510: 0.63802

Iteration 520: is 0.638 error Iteration 530: is 0.63799 error Iteration 540: is 0.63798 error Iteration 550: is 0.63797 error Iteration 560: is 0.63796 error Iteration is 570: 0.63795 error Iteration 580: 0.63794 is error Iteration 0.63794 is 590: error Iteration 0.63793 600: is error Iteration 610: 0.63793 error is Iteration 620: 0.63792 is error Iteration error is 630: 0.63792 Iteration 640: is 0.63791 error Iteration 650: is 0.63791 error Iteration is 660: 0.63791 error Iteration 670: is 0.63791 error Iteration is 680: 0.6379 error Iteration 690: is 0.6379 error Iteration 700: is 0.6379 error Iteration 0.6379 710: is error Iteration 720: is 0.6379 error

Iteration is 0.6379 730: error Iteration 740: is 0.63789 error Iteration is 750: 0.63789 error Iteration 760: is 0.63789 error Iteration is 0.63789 error 770: Iteration 780: error is 0.63789 Iteration 0.63789 790: is error Iteration 0.63789 is 800: error Iteration 0.63789 810: is error Iteration 0.63789 820: error is Iteration 0.63789 830: is error Iteration error is 0.63789 840: Iteration 0.63789 850: is error Iteration 860: is 0.63789 error Iteration is 870: 0.63789 error Iteration 880: is 0.63789 error Iteration is 0.63789 890: error Iteration 900: is 0.63789 error Iteration 910: is 0.63789 error Iteration 0.63789 920: is error Iteration 930: is 0.63789 error

```
Iteration 940: error is 0.63789
Iteration 950: error is 0.63789
Iteration 960: error is 0.63788
Iteration 970: error is 0.63788
Iteration 980: error is 0.63788
Iteration 990: error is 0.63788
Iteration 1000: error is 0.63788
J new = 0.8431
J new = 0.8272
J new = 0.8161
J \text{ new} = 0.8143
J \text{ new} = 0.8118
J \text{ new} = 0.8079
J \text{ new} = 0.8061
J new = 0.8022
J new = 0.7905
J new = 0.7811
J new = 0.7427
J new = 0.7416
J new = 0.7424
```

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 38.9882 Iteration 20: error is 37.3113 Iteration 30: error is 37.2559 Iteration 40: error is 37.1388 error is 36.8151 Iteration 50: Iteration 60: error is 36.6855 Iteration 70: error is 37.1353 Iteration 80: error is 37.1797 Iteration 90: error is 37.56 Iteration 100: error is 2.1387 Iteration 110: error is 1.2556 Iteration 120: error is 0.90821 Iteration 130: error is 0.70943 Iteration 140: error is 0.69169 Iteration 150: error is 0.66183 Iteration 160: error is 0.65564 Iteration 170: error is 0.65081 Iteration 180: error is 0.64688 Iteration 190: error is 0.64364

Iteration is 0.64142 200: error 0.63952 Iteration 210: is error Iteration 220: is 0.63807 error Iteration 0.6368 230: is error Iteration 0.63576 error 240: is Iteration 250: 0.63487 is error Iteration 260: 0.63352 is error Iteration is 0.63202 270: error Iteration 0.63089 280: is error Iteration 0.63007 290: is error Iteration 0.62945 300: is error Iteration 310: error is 0.62896 0.62858 Iteration 320: is error Iteration 330: is 0.62829 error Iteration 340: is 0.62804 error Iteration 350: is 0.62784 error is Iteration 360: 0.62765 error Iteration 370: is 0.6275 error Iteration 380: is 0.62738 error Iteration 0.62728 390: is error Iteration 400: is 0.62718 error

Iteration 410: is 0.6271 error Iteration 420: is 0.62701 error Iteration is 430: 0.62694 error Iteration is 0.62688 440: error Iteration 0.62683 450: error is Iteration 460: error is 0.62679 Iteration 0.62675 470: is error Iteration is 0.62672 480: error Iteration 0.62669 is 490: error Iteration 0.62666 500: is error Iteration 510: 0.62664 is error Iteration 520: error is 0.62663 Iteration 530: 0.62661 is error Iteration 540: error is 0.6266 Iteration 550: is 0.62658 error Iteration 560: is 0.62657 error is Iteration 570: 0.62656 error Iteration 580: is 0.62655 error Iteration 590: is 0.62655 error Iteration 600: 0.62654 is error Iteration error is 610: 0.62653

Iteration is 0.62653 620: error Iteration 630: is 0.62652 error Iteration 640: is 0.62652 error Iteration 650: is 0.62652 error 660: Iteration 0.62651 error is Iteration 670: error is 0.62651 Iteration 0.62651 680: is error Iteration is 0.62651 690: error Iteration is 0.6265 700: error Iteration 0.6265 710: error is Iteration 0.6265 error is 720: Iteration error is 730: 0.6265 Iteration error is 740: 0.6265 Iteration 750: error is 0.6265 Iteration 760: is 0.62649 error Iteration 770: is 0.62649 error Iteration is 780: 0.62649 error Iteration 0.62649 790: is error Iteration 800: is 0.62649 error Iteration 0.62649 is 810: error Iteration error is 820: 0.62649

```
Iteration 830:
               error is 0.62649
Iteration 840:
               error is 0.62649
               error is 0.62649
Iteration 850:
Iteration 860:
               error is 0.62649
               error is
Iteration 870:
                        0.62649
Iteration 880:
               error is 0.62649
Iteration 890:
               error is 0.62649
Iteration 900:
               error is 0.62649
Iteration 910:
               error is 0.62649
Iteration 920:
               error is 0.62649
Iteration 930:
               error is 0.62649
Iteration 940:
               error is 0.62649
Iteration 950:
               error is 0.62649
Iteration 960:
               error is 0.62649
Iteration 970:
               error is 0.62649
Iteration 980:
               error is 0.62649
               error is 0.62649
Iteration 990:
Iteration 1000: error is 0.62649
J new = 0.8515
J new = 0.8261
J \text{ new} = 0.8133
```

J new = 0.8092

 $J_{new} = 0.8067$

 $J_{new} = 0.7999$

J new = 0.7862

J new = 0.7422

J new = 0.7425

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.856

Iteration 20: error is 37.0662

Iteration 30: error is 36.848

Iteration 40: error is 37.0121

Iteration 50: error is 37.2866

Iteration 60: error is 38.0339

Iteration 70: error is 37.5177

Iteration 80: error is 37.3878

Iteration 90: error is 37.2175

Iteration 100: error is 2.3588

Iteration 110: error is 1.117

Iteration 120: error is 0.79416

Iteration is 0.69081 130: error 0.67497 Iteration 140: is error Iteration 150: is 0.66524 error Iteration 0.65876 160: is error 170: 0.65391 Iteration is error Iteration 0.6503 180: is error Iteration 0.64765 190: is error Iteration 0.64528 is 200: error Iteration 0.64344 210: is error Iteration is 0.64195 220: error Iteration 0.64064 230: is error Iteration error is 0.63956 240: Iteration 0.63866 250: is error Iteration 260: is 0.63715 error Iteration 270: is 0.6356 error Iteration is 0.63445 280: error Iteration is 0.63356 290: error Iteration 300: is 0.63285 error Iteration 310: is 0.63228 error Iteration 0.63161 is 320: error Iteration 330: is 0.63119 error

Iteration 340: is 0.63064 error 350: Iteration is 0.62907 error Iteration 360: 0.62857 is error Iteration 370: 0.6283 error is Iteration 380: 0.62816 error is Iteration 390: 0.62806 is error Iteration 0.62797 400: is error Iteration is 0.62788 410: error Iteration 420: is 0.6278 error Iteration 0.62774 430: error is Iteration 0.62768 440: is error Iteration error is 450: 0.62763 Iteration 0.62758 460: is error Iteration error is 0.62755 470: Iteration is 480: 0.62751 error Iteration 490: is 0.62748 error Iteration 500: is 0.62746 error Iteration 510: is 0.62744 error Iteration 520: is 0.62741 error Iteration 530: 0.6274 is error Iteration 540: is 0.62738 error

Iteration 550: is 0.62737 error Iteration 560: is 0.62736 error Iteration 570: is 0.62735 error Iteration 580: is 0.62734 error Iteration 0.62733 error 590: is Iteration is 0.62732 600: error Iteration 0.62731 610: is error Iteration 620: is 0.62731 error Iteration 630: is 0.6273 error Iteration 0.6273 640: error is Iteration 650: 0.62729 error is Iteration error is 660: 0.62729 Iteration 670: is 0.62728 error Iteration error is 0.62728 680: Iteration is 0.62728 690: error Iteration 700: is 0.62728 error Iteration is 710: 0.62727 error Iteration 720: is 0.62727 error Iteration 730: is 0.62727 error Iteration 0.62727 740: is error Iteration 750: is 0.62727 error

Iteration 760: is 0.62726 error Iteration 770: is 0.62726 error Iteration 780: error is 0.62726 Iteration 790: 0.62726 is error Iteration 0.62726 error 800: is Iteration error 0.62726 810: is Iteration 0.62726 820: error is Iteration is 0.62726 830: error Iteration 0.62726 840: is error Iteration 0.62726 850: error is Iteration 0.62726 860: is error Iteration error is 870: 0.62726 Iteration 880: is 0.62726 error Iteration 0.62725 890: is error Iteration is 0.62725 900: error Iteration 910: is 0.62725 error is Iteration 920: 0.62725 error Iteration 930: 0.62725 is error Iteration 940: is 0.62725 error Iteration 950: 0.62725 is error Iteration 960: is 0.62725 error

Iteration 970: error is 0.62725

Iteration 980: error is 0.62725

Iteration 990: error is 0.62725

Iteration 1000: error is 0.62725

J new = 0.8360

J new = 0.8194

J new = 0.8174

J new = 0.8165

J new = 0.8139

J new = 0.8120

J new = 0.8081

J new = 0.8065

J new = 0.8025

J new = 0.7909

J new = 0.7814

J new = 0.7431

J new = 0.7419

 $J_{new} = 0.7428$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: is 39.3271 error is 37.0681 Iteration 20: error Iteration is 30: 36.4359 error Iteration 40: is 36.3767 error Iteration 50: is 37.4086 error Iteration 60: is 37,2031 error Iteration 70: is 37.0717 error Iteration is 80: 36,9958 error Iteration is 37.6965 90: error Iteration error is 2.3549 100: Iteration 110: is 1.1988 error Iteration 120: error is 0.81461 error is Iteration 130: 0.70402 Iteration 140: error is 0.68491 Iteration 150: is 0.67375 error Iteration 160: is 0.66477 error Iteration is 170: 0.65943 error Iteration 180: 0.65585 is error 0.6532 Iteration 190: is error Iteration 0.65099 is 200: error Iteration 210: error is 0.64924

Iteration is 0.64787 220: error Iteration 230: is 0.64667 error Iteration is 240: 0.64567 error Iteration 250: 0.64479 error is Iteration 0.64344 260: error is Iteration 270: 0.64196 is error Iteration 0.64086 280: is error Iteration is 0.6401 290: error Iteration 0.63953 300: is error Iteration 0.63909 310: is error Iteration 320: 0.63872 is error Iteration 330: error is 0.63843 Iteration 340: is 0.6382 error Iteration 350: is 0.63801 error Iteration 360: is 0.63786 error Iteration 370: is 0.63771 error is Iteration 380: 0.6376 error Iteration 0.6375 390: is error Iteration 400: is 0.63742 error Iteration 410: 0.63735 is error Iteration 420: is 0.63728 error

Iteration 430: is 0.63723 error Iteration 440: is 0.63719 error Iteration is 450: 0.63714 error Iteration 460: is 0.63711 error Iteration 0.63708 error 470: is Iteration 480: is 0.63705 error Iteration 0.63702 490: is error Iteration is 500: error 0.637 Iteration 0.63698 510: is error Iteration 520: 0.63697 error is Iteration 530: 0.63695 is error Iteration 540: error is 0.63694 550: 0.63692 Iteration is error Iteration 560: is 0.63691 error Iteration 570: is 0.6369 error Iteration is 580: 0.63689 error Iteration is 590: 0.63689 error Iteration 600: 0.63688 is error Iteration 610: is 0.63687 error Iteration 620: is 0.63687 error Iteration is 630: 0.63686 error

Iteration is 0.63686 640: error is 0.63685 Iteration 650: error is Iteration 660: 0.63685 error Iteration 0.63684 670: error is Iteration 680: error 0.63684 is Iteration 0.63684 690: is error Iteration 700: is 0.63684 error Iteration 0.63683 is 710: error Iteration 720: 0.63683 is error Iteration 0.63683 730: error is Iteration 0.63683 740: is error Iteration error is 0.63682 750: Iteration 760: is 0.63682 error Iteration is 770: 0.63682 error Iteration is 780: 0.63682 error Iteration is 790: 0.63682 error Iteration is 800: 0.63682 error Iteration 810: 0.63682 is error Iteration 820: is 0.63682 error Iteration 830: is 0.63682 error Iteration is 840: 0.63681 error

```
Iteration 850: error is 0.63681
Iteration 860:
               error is 0.63681
               error is 0.63681
Iteration 870:
Iteration 880:
               error is 0.63681
Iteration 890:
               error is 0.63681
Iteration 900:
               error is 0.63681
Iteration 910:
               error is 0.63681
Iteration 920:
               error is 0.63681
Iteration 930: error is 0.63681
Iteration 940:
               error is 0.63681
Iteration 950: error is 0.63681
Iteration 960: error is 0.63681
Iteration 970: error is 0.63681
Iteration 980: error is 0.63681
Iteration 990: error is 0.63681
Iteration 1000: error is 0.63681
J new = 0.8752
J new = 0.8381
J new = 0.8273
J new = 0.8268
J \text{ new} = 0.8279
```

Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 of sigma: 0.27312 Maximum value Iteration 10: error is 39.4562 Iteration 20: error is 37.257 Iteration 30: error is 36.9307 Iteration 40: error is 37.3811 Iteration 50: error is 37.4627 Iteration 60: error is 37.1384 Iteration 70: error is 37.2029 Iteration 80: error is 37.0834 Iteration 90: error is 36.9171 Iteration 100: error is 2.1918 Iteration 110: error is 1.1007 Iteration 120: error is 0.82036 Iteration 130: error is 0.70439 Iteration 140: error is 0.67867 Iteration 150: error is 0.6616 Iteration 160: error is 0.65433 Iteration 170: error is 0.64907 Iteration 180: error is 0.64508

Iteration is 0.6422 190: error Iteration 200: is 0.63972 error Iteration is 210: 0.63781 error Iteration 220: 0.63622 is error 0.63486 Iteration error 230: is Iteration 240: 0.63387 is error Iteration 0.63273 250: is error Iteration 260: is 0.63118 error Iteration 0.62948 270: is error Iteration 0.62824 280: error is Iteration 0.6274 290: is error Iteration 300: error is 0.62673 Iteration 310: is 0.6262 error Iteration 320: is 0.6258 error Iteration 330: is 0.62547 error Iteration 340: is 0.62521 error is Iteration 350: 0.62499 error Iteration 0.62481 360: is error Iteration 370: is 0.62466 error Iteration 0.62453 is 380: error Iteration 390: is 0.62442 error

Iteration 400: is 0.62433 error Iteration 410: is 0.62425 error Iteration 0.62419 420: is error Iteration 430: is 0.62413 error Iteration 0.62408 error 440: is Iteration 450: error 0.62404 is Iteration 460: is 0.624 error Iteration is 0.62396 470: error Iteration 0.62393 is 480: error Iteration is 0.62391 490: error Iteration 500: error is 0.62389 Iteration 510: error is 0.62387 0.62385 Iteration 520: is error Iteration 530: 0.62383 error is Iteration 540: is 0.62382 error Iteration 550: 0.62381 is error Iteration 560: is 0.6238 error Iteration 570: is 0.62379 error Iteration 0.62378 580: is error Iteration 0.62377 590: is error Iteration 600: error is 0.62376

Iteration 610: is 0.62376 error Iteration 620: is 0.62375 error Iteration is 630: 0.62375 error Iteration is 0.62374 640: error 650: Iteration 0.62374 error is Iteration 0.62374 660: is error Iteration 0.62373 670: is error Iteration 0.62373 680: is error Iteration 0.62373 is 690: error Iteration 0.62373 700: error is Iteration 0.62372 710: is error Iteration error is 720: 0.62372 Iteration 730: is 0.62372 error Iteration is 0.62372 740: error Iteration is 0.62372 750: error Iteration is 760: 0.62372 error Iteration is 770: 0.62371 error Iteration 780: 0.62371 is error 0.62371 Iteration 790: is error Iteration 0.62371 800: is error Iteration 810: error is 0.62371

error is 0.62371 Iteration 820: Iteration 830: error is 0.62371 error is 0.62371 Iteration 840: Iteration 850: error is 0.62371 error is Iteration 860: 0.62371 Iteration 870: error is 0.62371 Iteration 880: error is 0.62371 Iteration 890: error is 0.62371 Iteration 900: error is 0.62371 Iteration 910: error is 0.62371 Iteration 920: error is 0.62371 Iteration 930: error is 0.62371 Iteration 940: error is 0.62371 Iteration 950: error is 0.62371 Iteration 960: error is 0.62371 Iteration 970: error is 0.6237 error is 0.6237 Iteration 980: Iteration 990: error is 0.6237 Iteration 1000: error is 0.6237 J new = 0.8426J new = 0.8271

- J new = 0.8147
- J new = 0.8115
- J new = 0.8101
- J new = 0.8057
- J new = 0.8010
- J new = 0.7854
- J new = 0.7435
- J new = 0.7419
- J new = 0.7428
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 38.8959
- Iteration 20: error is 37.1785
- Iteration 30: error is 36.4312
- Iteration 40: error is 36.8622
- Iteration 50: error is 37.1242
- Iteration 60: error is 37.0877
- Iteration 70: error is 37.1212
- Iteration 80: error is 37.1017
- Iteration 90: error is 37.264

Iteration is 100: 2.191 error is Iteration 110: 1.311 error is Iteration 0.91357 120: error Iteration 0.70508 130: is error 140: Iteration is 0.67675 error Iteration 150: is 0.66754 error Iteration 160: is 0.6617 error Iteration 0.65761 170: is error Iteration 0.65413 180: is error Iteration is 0.65151 190: error Iteration 0.64947 200: is error Iteration error is 0.64775 210: Iteration 0.64636 220: is error Iteration error is 0.64519 230: Iteration is 0.64419 240: error Iteration is 250: 0.64336 error Iteration is 260: 0.64197 error Iteration 270: is 0.6405 error Iteration 280: is 0.63945 error Iteration 0.63866 is 290: error Iteration is 300: 0.63808 error

Iteration 310: is 0.63763 error Iteration 320: is 0.63728 error is Iteration 330: 0.637 error Iteration 340: 0.63677 is error Iteration 350: is 0.63659 error Iteration 360: is 0.63644 error Iteration 0.63631 370: is error Iteration 0.63621 is 380: error Iteration 0.63612 is 390: error Iteration is 0.63605 400: error Iteration 0.63598 error is 410: Iteration 420: error is 0.63593 Iteration 430: 0.63588 is error Iteration 440: 0.63584 error is Iteration is 450: 0.6358 error Iteration 460: is 0.63577 error Iteration is 0.63574 470: error Iteration 480: is 0.63535 error Iteration 490: is 0.63467 error Iteration 500: 0.63452 is error Iteration error is 0.63448 510:

Iteration 520: is 0.63444 error Iteration 530: is 0.63442 error Iteration 540: is 0.63441 error Iteration 550: is 0.63439 error Iteration 560: is 0.63438 error Iteration 570: error is 0.63437 Iteration 580: 0.63435 is error Iteration 0.63435 is 590: error Iteration 0.63434 600: is error Iteration 610: is 0.63433 error Iteration 620: 0.63432 error is Iteration error is 0.63432 630: Iteration error is 0.63431 640: Iteration 650: 0.6343 error is Iteration is 660: 0.6343 error Iteration is 670: 0.6343 error Iteration is 0.63429 680: error Iteration 690: is 0.63429 error Iteration 700: is 0.63429 error Iteration 710: 0.63428 is error Iteration 720: error is 0.63428

Iteration is 0.63428 730: error Iteration 740: is 0.63428 error Iteration 750: is 0.63428 error Iteration 760: is 0.63427 error Iteration 0.63427 error 770: is Iteration 780: 0.63427 is error Iteration 0.63427 790: is error Iteration is 0.63427 800: error Iteration 0.63427 810: is error Iteration 0.63427 820: error is Iteration 0.63427 830: is error Iteration error is 0.63427 840: Iteration 0.63427 850: is error Iteration 860: is 0.63426 error Iteration is 870: 0.63426 error Iteration 880: is 0.63426 error Iteration is 890: 0.63426 error Iteration 900: is 0.63426 error Iteration 910: is 0.63426 error Iteration 0.63426 is 920: error Iteration 0.63426 930: error is

Iteration 940: error is 0.63426

Iteration 950: error is 0.63426

Iteration 960: error is 0.63426

Iteration 970: error is 0.63426

Iteration 980: error is 0.63426

Iteration 990: error is 0.63426

Iteration 1000: error is 0.63426

J new = 0.8625

J new = 0.8407

J new = 0.8310

J new = 0.8230

J new = 0.8225

J new = 0.8234

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.8669

Iteration 20: error is 36.5568

Iteration 30: error is 36.6187

Iteration 40: error is 36.7698

Iteration 50: error is 36.55

Iteration is 37,4596 60: error is Iteration 70: 37,2178 error Iteration is 80: 37.5523 error Iteration 90: error is 38.4411 Iteration 100: is 2.3331 error Iteration 110: 1,5341 is error Iteration 120: is 1.0803 error Iteration 130: error is 0.92858 Iteration 0.83151 140: is error Iteration 150: error is 0.70181 Iteration 160: 0.69994 error is Iteration error is 0.65356 170: error is Iteration 180: 0.647 Iteration error is 0.64436 190: Iteration 200: is 0.64235 error Iteration 210: is 0.64075 error Iteration 220: is 0.63945 error Iteration 230: is 0.63834 error Iteration 240: is 0.63738 error Iteration 250: 0.63656 is error Iteration error is 260: 0.6352

Iteration is 0.63372 270: error Iteration 280: is 0.63266 error Iteration is 290: 0.63191 error Iteration 300: 0.63132 is error Iteration 0.63081 error 310: is Iteration 320: error is 0.63043 Iteration 0.63014 330: is error Iteration 340: 0.62988 is error Iteration 0.62966 350: is error Iteration 360: is 0.62949 error Iteration 370: 0.62934 is error Iteration 380: error is 0.62921 Iteration 390: is 0.6291 error Iteration 0.62902 400: error is Iteration is 0.62893 410: error Iteration 420: is 0.62887 error Iteration is 430: 0.62881 error Iteration is 0.62876 440: error Iteration 450: is 0.62871 error Iteration 460: 0.62867 is error Iteration 470: error is 0.62864

Iteration is 0.62861 480: error Iteration 490: is 0.62858 error Iteration 0.62856 is 500: error Iteration 510: is 0.62853 error 520: Iteration 0.62852 error is Iteration 530: error is 0.6285 Iteration 540: 0.62848 is error Iteration 550: is 0.62847 error Iteration 560: is 0.62846 error Iteration 570: is 0.62845 error Iteration 580: 0.62844 is error Iteration error is 0.62843 590: Iteration 600: is 0.62842 error Iteration 0.62841 610: is error Iteration is 620: 0.62841 error Iteration 630: is 0.6284 error Iteration is 640: 0.6284 error Iteration 650: is 0.62839 error Iteration 660: 0.62839 is error Iteration 670: 0.62839 is error Iteration 680: is 0.62838 error

Iteration is 0.62838 690: error Iteration 700: is 0.62838 error Iteration is 710: 0.62837 error Iteration 720: is 0.62837 error Iteration 0.62837 730: error is Iteration 740: is 0.62837 error Iteration 0.62837 750: is error Iteration 760: is 0.62837 error Iteration 770: is 0.62836 error Iteration 0.62836 780: error is Iteration 0.62836 790: is error Iteration error is 0.62836 800: 0.62836 Iteration 810: is error Iteration is 0.62836 820: error Iteration 830: is 0.62836 error Iteration 840: is 0.62836 error Iteration is 850: 0.62836 error Iteration 860: 0.62836 is error Iteration 870: is 0.62836 error Iteration 0.62835 880: is error Iteration 890: is 0.62835 error

```
Iteration 900: error is 0.62835
```

J new =
$$0.8429$$

J new =
$$0.8270$$

$$J_{new} = 0.8166$$

J new =
$$0.8150$$

J new =
$$0.8145$$

J new =
$$0.8108$$

$$J \text{ new} = 0.8088$$

J new =
$$0.8052$$

$$J new = 0.8032$$

J new =
$$0.7896$$

J new = 0.7820

J new = 0.7418

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.852

Iteration 20: error is 37.0946

Iteration 30: error is 36.8681

Iteration 40: error is 37.3364

Iteration 50: error is 37.3042

Iteration 60: error is 37.39

Iteration 70: error is 37.2805

Iteration 80: error is 37.8639

Iteration 90: error is 37.166

Iteration 100: error is 2.1046

Iteration 110: error is 1.2536

Iteration 120: error is 0.90685

Iteration 130: error is 0.73034

Iteration 140: error is 0.69697

Iteration 150: error is 0.67291

Iteration 160: is 0.66724 error is Iteration 170: 0.66296 error is Iteration 180: 0.6599 error Iteration 190: is 0.65727 error Iteration 0.65514 error 200: is Iteration 0.65346 210: error is Iteration 0.65205 220: is error Iteration 0.65085 is 230: error Iteration 0.64984 240: is error Iteration 250: 0.64897 is error Iteration 0.6476 260: is error Iteration error is 0.64612 270: Iteration 280: is 0.64506 error Iteration is 290: 0.6443 error Iteration 300: is 0.6437 error Iteration 310: is 0.64325 error is Iteration 320: 0.64289 error Iteration 330: is 0.64259 error Iteration 340: is 0.64235 error Iteration 350: 0.64215 is error Iteration 360: is 0.64199 error

Iteration 370: is 0.64185 error 0.64174 Iteration 380: is error Iteration is 390: 0.64165 error Iteration 400: 0.64157 is error 0.6415 Iteration is error 410: Iteration 420: error is 0.64145 Iteration 0.64139 430: is error Iteration 0.64135 is 440: error Iteration 0.64131 450: is error Iteration is 0.64128 460: error Iteration 470: 0.64125 is error Iteration error is 0.64123 480: Iteration 490: is 0.64121 error Iteration 500: error is 0.64118 Iteration 510: is 0.64117 error Iteration 520: is 0.64115 error Iteration 530: is 0.64114 error Iteration 540: is 0.64113 error Iteration 550: is 0.64112 error Iteration 560: 0.64111 is error Iteration 570: is 0.6411 error

Iteration is 0.64109 580: error 0.64108 Iteration 590: is error Iteration is 600: 0.64108 error Iteration 0.64107 610: is error 0.64107 Iteration 620: error is Iteration 630: error 0.64106 is Iteration 0.64106 640: is error Iteration 650: is 0.64106 error Iteration 0.64105 660: is error Iteration 0.64105 670: error is Iteration 0.64105 680: is error Iteration error is 0.64104 690: Iteration 700: is 0.64104 error Iteration is 710: 0.64104 error Iteration is 0.64104 720: error Iteration is 730: 0.64104 error Iteration is 0.64104 740: error Iteration 750: is 0.64103 error Iteration 760: is 0.64103 error Iteration 0.64103 is 770: error Iteration 0.64103 780: is error

Iteration is 0.64103 790: error is 0.64103 Iteration 800: error is Iteration 810: 0.64103 error Iteration 820: 0.64103 is error 830: 0.64103 Iteration error is Iteration 840: 0.64103 is error Iteration 850: 0.64103 is error Iteration 0.64103 860: is error Iteration 0.64103 870: is error Iteration 0.64103 880: error is Iteration 0.64103 890: is error Iteration error is 0.64103 900: Iteration 910: is 0.64103 error Iteration is 920: 0.64103 error Iteration 930: is 0.64102 error Iteration 940: is 0.64102 error Iteration is 950: 0.64102 error Iteration 960: 0.64102 is error Iteration 970: is 0.64102 error Iteration 0.64102 is 980: error Iteration 0.64102 990: is error

```
Iteration 1000: error is 0.64102
J new = 0.8358
J new = 0.8210
J new = 0.8180
J new = 0.8172
J new = 0.8149
J new = 0.8144
J new = 0.8107
J new = 0.8088
J new = 0.8052
J new = 0.8032
J new = 0.7896
J new = 0.7820
J new = 0.7418
J new = 0.7425
Mean value of sigma: 0.16017
Minimum value of sigma: 0.1114
Maximum value of sigma: 0.27312
Iteration 10: error is 39.4377
Iteration 20: error is 37.1889
Iteration 30: error is 36.9126
```

Iteration 40: is 36.7043 error is Iteration 50: 36.9709 error Iteration is 60: 37.3659 error Iteration 70: is 37.5414 error Iteration 80: is 37.4565 error Iteration 90: error is 38.7319 Iteration 100: is 2.3626 error Iteration is 110: 1.3765 error Iteration 0.99179 120: is error Iteration 130: error is 0.80304 Iteration 140: 0.69748 error is Iteration error is 150: 0.68763 error is Iteration 160: 0.68138 Iteration 0.67672 170: error is Iteration 180: is 0.67328 error Iteration 190: is 0.67071 error Iteration is 200: 0.66855 error Iteration 210: 0.66684 is error Iteration 220: is 0.66545 error Iteration 230: 0.66425 is error Iteration 240: error is 0.66323

Iteration 250: is 0.66236 error is Iteration 260: 0.66101 error Iteration is 270: 0.65958 error Iteration 0.65851 280: error is Iteration 0.65771 error 290: is Iteration 0.65713 300: is error Iteration 0.65668 310: is error Iteration 0.65634 is 320: error Iteration 0.65607 330: is error Iteration 0.65585 340: is error Iteration 350: 0.65566 is error Iteration 0.65552 360: is error Iteration 370: is 0.6554 error Iteration 380: is 0.65529 error Iteration 390: is 0.6552 error Iteration 400: is 0.65513 error Iteration is 0.65506 410: error Iteration 420: is 0.65501 error Iteration 0.65496 430: is error Iteration 0.65492 is 440: error Iteration 450: is 0.65489 error

Iteration is 0.65486 460: error 0.65483 Iteration 470: is error Iteration 0.65481 is 480: error Iteration 490: is 0.65479 error Iteration is 0.65478 error 500: Iteration 0.65476 510: error is Iteration 520: 0.65475 is error Iteration 0.65474 is 530: error Iteration 0.65473 540: is error Iteration 550: 0.65472 is error Iteration 560: 0.65471 is error Iteration error is 570: 0.6547 Iteration 580: is 0.6547 error Iteration 590: is 0.65469 error Iteration is 0.65469 600: error Iteration is 610: 0.65468 error Iteration is 0.65468 620: error Iteration 630: is 0.65468 error Iteration 0.65467 640: is error Iteration 650: 0.65467 is error Iteration 660: is 0.65467 error

Iteration is 0.65467 670: error is Iteration 680: 0.65466 error Iteration is 0.65466 690: error Iteration 700: 0.65466 error is Iteration 0.65466 error 710: is Iteration 720: 0.65466 is error Iteration 0.65466 730: is error Iteration 0.65466 is 740: error Iteration 0.65466 750: is error Iteration 0.65465 760: error is Iteration 0.65465 770: is error Iteration error is 0.65465 780: Iteration 0.65465 790: is error Iteration is 0.65465 800: error Iteration is 0.65465 810: error Iteration is 820: 0.65465 error is Iteration 830: 0.65465 error Iteration 840: is 0.65465 error Iteration 0.65465 850: is error Iteration 860: 0.65465 is error Iteration 870: is 0.65465 error

```
Iteration 880: error is 0.65465
```

Iteration 890: error is 0.65465

Iteration 900: error is 0.65465

Iteration 910: error is 0.65465

Iteration 920: error is 0.65465

Iteration 930: error is 0.65465

Iteration 940: error is 0.65465

Iteration 950: error is 0.65465

Iteration 960: error is 0.65465

Iteration 970: error is 0.65465

Iteration 980: error is 0.65465

Iteration 990: error is 0.65465

Iteration 1000: error is 0.65465

 $J_{new} = 0.8398$

J new = 0.8265

J new = 0.8145

J new = 0.8112

J new = 0.8098

J new = 0.8054

J new = 0.8006

J new = 0.7851

J new = 0.7431

J new = 0.7416

 $J_{new} = 0.7424$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.6297

Iteration 20: error is 37.2906

Iteration 30: error is 37.1515

Iteration 40: error is 37.5902

Iteration 50: error is 37.419

Iteration 60: error is 37.629

Iteration 70: error is 37.7646

Iteration 80: error is 38.0333

Iteration 90: error is 37.7176

Iteration 100: error is 2.1942

Iteration 110: error is 1.2346

Iteration 120: error is 0.89554

Iteration 130: error is 0.78545

Iteration 140: error is 0.69594

Iteration 150: error is 0.67899

Iteration is 0.66333 160: error is 0.65902 Iteration 170: error Iteration 180: is 0.65555 error Iteration 190: is 0.65294 error 0.65064 Iteration error 200: is Iteration 210: 0.64889 is error Iteration 0.64738 220: is error Iteration is 0.64612 230: error Iteration 0.64509 240: is error Iteration 250: 0.64416 is error Iteration 0.64276 260: is error Iteration error is 270: 0.64122 Iteration 280: is 0.64014 error Iteration is 290: 0.63933 error Iteration 300: is 0.6387 error Iteration 310: is 0.63823 error is Iteration 320: 0.63785 error Iteration 330: is 0.63755 error Iteration 340: is 0.63732 error Iteration 350: 0.63713 is error Iteration 360: is 0.63697 error

Iteration 370: is 0.63681 error is Iteration 380: 0.6367 error is Iteration 390: 0.6366 error Iteration 400: 0.63652 is error Iteration 0.63645 error 410: is Iteration 420: is 0.6364 error Iteration 0.63634 430: is error Iteration 0.6363 is 440: error Iteration is 0.63626 450: error Iteration 0.63623 460: is error Iteration 470: 0.6362 is error Iteration error is 0.63617 480: Iteration 0.63615 490: is error Iteration 500: 0.63613 error is Iteration 510: is 0.63611 error Iteration 520: is 0.6361 error is Iteration 530: 0.63609 error Iteration 540: is 0.63607 error Iteration 550: is 0.63606 error Iteration 560: is 0.63606 error Iteration 570: error is 0.63605

Iteration 580: is 0.63604 error is Iteration 590: 0.63603 error Iteration 600: is 0.63603 error Iteration 0.63602 610: is error Iteration 620: error 0.63602 is Iteration 630: 0.63601 is error Iteration 640: is 0.63601 error Iteration 650: is error 0.63601 Iteration 0.63601 660: is error Iteration 0.636 670: error is Iteration 0.636 is 680: error Iteration error is 0.636 690: Iteration is 700: 0.636 error Iteration 710: error is 0.636 Iteration is 0.63599 720: error Iteration is 730: 0.63599 error Iteration is 0.63599 740: error Iteration 750: is 0.63599 error Iteration 0.63599 760: is error Iteration 0.63599 770: is error Iteration 780: error is 0.63599

Iteration is 0.63599 790: error 0.63599 Iteration 800: is error Iteration is 810: 0.63599 error Iteration 820: is 0.63599 error 830: Iteration is 0.63599 error Iteration 0.63598 840: is error Iteration 850: 0.63598 is error Iteration 860: is 0.63598 error Iteration 0.63598 870: is error Iteration 0.63598 880: is error Iteration 0.63598 890: is error Iteration 0.63598 900: is error Iteration 0.63598 910: is error Iteration 0.63598 920: is error Iteration is 0.63598 930: error Iteration 940: is 0.63598 error Iteration is 0.63598 950: error Iteration 960: is 0.63598 error Iteration 0.63598 970: is error Iteration 0.63598 980: is error Iteration 990: is 0.63598 error

```
Iteration 1000: error is 0.63598
J new = 0.8438
J new = 0.8283
J new = 0.8177
J new = 0.8162
J new = 0.8159
J new = 0.8135
J new = 0.8116
J new = 0.8079
J new = 0.8061
J new = 0.8022
J new = 0.7905
J new = 0.7811
J new = 0.7427
J new = 0.7416
J new = 0.7424
Mean value of sigma: 0.16017
Minimum value of sigma: 0.1114
Maximum value of sigma: 0.27312
Iteration 10: error is 39.6503
```

Iteration 20: error is 36.6521

Iteration 30: is 36.8024 error is Iteration 40: 36,6292 error is Iteration 50: 37.2368 error Iteration is 37.0037 60: error Iteration 70: is 37.3531 error Iteration 80: is 37,2741 error Iteration is 37,723 90: error Iteration 100: is 2.3018 error Iteration 110: is 1,1418 error Iteration 120: 0.75508 error is Iteration 130: error is 0.68918 Iteration 140: error is 0.67504 error is Iteration 150: 0.66499 Iteration 160: error is 0.6586 Iteration 170: is 0.65383 error Iteration 180: is 0.65022 error Iteration is 190: 0.64748 error Iteration 200: 0.64536 is error Iteration 210: is 0.6435 error Iteration 0.64209 is 220: error Iteration 230: error is 0.64082

Iteration is 0.63977 240: error Iteration 250: is 0.63888 error Iteration is 0.63748 260: error Iteration 0.63598 270: is error 0.63484 Iteration error 280: is Iteration 290: is 0.634 error Iteration 0.63338 300: is error Iteration 0.6329 is 310: error Iteration 0.63252 320: is error Iteration 330: 0.63221 is error Iteration 340: 0.63197 is error Iteration 350: error is 0.63178 Iteration 360: 0.63161 is error Iteration 370: is 0.63147 error Iteration 380: is 0.63135 error Iteration 390: is 0.63126 error Iteration is 400: 0.63117 error Iteration 410: is 0.6311 error Iteration 420: is 0.63104 error Iteration 430: is 0.63099 error Iteration 440: is 0.63095 error

Iteration 450: is 0.63091 error is Iteration 460: 0.63087 error is Iteration 470: 0.63084 error Iteration 480: 0.63082 error is Iteration error 490: is 0.6308 Iteration 500: error 0.63078 is Iteration 0.63076 510: is error Iteration 0.63074 520: is error Iteration 0.63073 530: is error Iteration 540: 0.63072 is error Iteration 550: 0.63071 is error Iteration error is 0.6307 560: 0.63069 Iteration 570: is error Iteration 580: is 0.63068 error Iteration is 590: 0.63068 error Iteration is 600: 0.63067 error Iteration is 610: 0.63067 error Iteration 620: 0.63066 is error Iteration 630: is 0.63066 error Iteration 640: is 0.63065 error Iteration 0.63065 650: is error

Iteration is 0.63065 660: error is Iteration 670: 0.63064 error Iteration is 680: 0.63064 error Iteration 0.63064 690: is error Iteration error 0.63064 700: is Iteration 0.63064 710: is error Iteration 0.63064 720: is error Iteration 0.63063 is 730: error Iteration 0.63063 740: is error Iteration 750: 0.63063 error is Iteration 0.63063 760: is error Iteration error is 0.63063 770: Iteration 0.63063 780: is error Iteration 0.63063 790: error is Iteration is 0.63063 800: error Iteration is 810: 0.63063 error is Iteration 820: 0.63063 error Iteration 830: 0.63063 is error Iteration 840: is 0.63063 error Iteration 850: is 0.63062 error Iteration 860: error is 0.63062

```
Iteration 870: error is 0.63062
Iteration 880:
               error is 0.63062
Iteration 890:
               error is 0.63062
Iteration 900: error is 0.63062
Iteration 910:
               error is 0.63062
Iteration 920:
               error is 0.63062
               error is 0.63062
Iteration 930:
               error is 0.63062
Iteration 940:
Iteration 950: error is 0.63062
Iteration 960: error is 0.63062
Iteration 970: error is 0.63062
Iteration 980: error is 0.63062
Iteration 990: error is 0.63062
Iteration 1000: error is 0.63062
J new = 0.8700
J new = 0.8374
J new = 0.8208
J new = 0.8095
J \text{ new} = 0.8059
J new = 0.8011
J \text{ new} = 0.7853
```

J new = 0.7431

 $J_{new} = 0.7416$

 $J_{new} = 0.7424$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.4171

Iteration 20: error is 37.4417

Iteration 30: error is 36.8175

Iteration 40: error is 37.2257

Iteration 50: error is 36.8302

Iteration 60: error is 36.85

Iteration 70: error is 37.3092

Iteration 80: error is 37.6333

Iteration 90: error is 37.4798

Iteration 100: error is 2.2302

Iteration 110: error is 1.1695

Iteration 120: error is 0.77874

Iteration 130: error is 0.69816

Iteration 140: error is 0.6774

Iteration 150: error is 0.66643

Iteration is 0.65958 160: error is 0.65561 Iteration 170: error is Iteration 180: 0.6512 error Iteration 0.64838 190: is error 0.64612 Iteration error 200: is Iteration 210: 0.64438 is error Iteration 0.64289 220: is error Iteration is 0.64169 230: error Iteration 0.64069 240: is error Iteration 250: is 0.63979 error Iteration 0.63838 260: is error Iteration error is 0.63691 270: Iteration 0.63582 280: is error Iteration is 290: 0.63501 error Iteration 300: is 0.63443 error Iteration 310: is 0.63397 error is Iteration 320: 0.63363 error Iteration 330: is 0.63334 error Iteration 340: is 0.63311 error Iteration 350: 0.63291 is error Iteration 360: is 0.63275 error

Iteration 370: is 0.63261 error Iteration 380: is 0.63249 error is Iteration 390: 0.6324 error Iteration 400: is 0.63232 error Iteration 0.63225 error 410: is Iteration 420: error is 0.63218 Iteration 0.63213 430: is error Iteration 0.63208 is 440: error Iteration is 0.63204 450: error Iteration 460: is 0.632 error Iteration 470: 0.63197 is error Iteration error is 0.63194 480: 0.63192 Iteration 490: is error Iteration 500: error is 0.6319 Iteration 510: is 0.63187 error Iteration 520: is 0.63185 error is Iteration 530: 0.63184 error Iteration 540: is 0.63182 error Iteration 550: is 0.63181 error Iteration 560: is 0.6318 error Iteration 570: error is 0.63179

Iteration 580: is 0.63178 error Iteration 590: is 0.63177 error Iteration 600: is 0.63176 error Iteration 610: 0.63175 is error Iteration 0.63175 620: error is Iteration 630: error 0.63174 is Iteration 0.63173 640: is error Iteration 0.63173 650: is error Iteration 660: 0.63172 is error Iteration 0.63172 670: error is Iteration 0.63172 680: is error Iteration error is 0.63171 690: Iteration 700: is 0.63171 error Iteration is 710: 0.63171 error Iteration is 720: 0.6317 error Iteration 730: is 0.6317 error Iteration is 740: 0.6317 error Iteration 750: is 0.6317 error Iteration 760: is 0.6317 error Iteration 0.63169 is 770: error Iteration 0.63169 780: is error

Iteration is 0.63169 790: error is 0.63169 Iteration 800: error Iteration is 810: 0.63169 error Iteration 820: is 0.63169 error 830: Iteration 0.63169 error is Iteration 840: is 0.63169 error Iteration 850: 0.63168 is error Iteration 0.63168 860: is error Iteration 0.63168 870: is error Iteration 0.63168 880: is error Iteration 0.63168 890: is error Iteration error is 0.63168 900: Iteration 0.63168 910: is error Iteration is 920: 0.63168 error Iteration 930: is 0.63168 error Iteration 940: is 0.63168 error Iteration is 950: 0.63168 error Iteration 960: is 0.63168 error Iteration 970: is 0.63168 error Iteration 0.63168 is 980: error Iteration is 990: 0.63168 error

Iteration 1000: error is 0.63168 J new = 0.8612J new = 0.8302J new = 0.8155J new = 0.8120J new = 0.8106J new = 0.8062J new = 0.8014J new = 0.7859J new = 0.7439J new = 0.7424J new = 0.7432Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 38.6591 Iteration 20: error is 37.1042 Iteration 30: error is 36.8292 Iteration 40: error is 36.7095 Iteration 50: error is 36.9915 Iteration 60: error is 37.1214

Iteration 70: is 37.2059 error is 37.5006 Iteration 80: error Iteration 90: is 37.7942 error Iteration 100: error İS Iteration error 110: is 1.3241 Iteration 120: 1.0333 is error Iteration 130: 0.95582 is error Iteration 140: is 0.87167 error Iteration 0.84857 150: is error Iteration 160: is 0.7975 error Iteration 170: 0.75992 is error Iteration error is 0.70338 180: is Iteration 190: 0.66006 error Iteration 200: error is 0.65734 Iteration is 0.65405 210: error Iteration is 220: 0.65265 error Iteration is 230: 0.65145 error Iteration 240: 0.65048 is error Iteration 250: is 0.64965 error Iteration 260: 0.64832 is error Iteration 270: error is 0.64691

Iteration is 0.64583 280: error 0.64504 Iteration 290: is error Iteration 0.64444 is 300: error Iteration 310: is 0.64396 error 0.64358 Iteration 320: is error Iteration 330: error 0.64328 is Iteration 0.64303 340: is error Iteration 350: is 0.64283 error Iteration 0.64266 360: is error Iteration is 0.64252 370: error Iteration 380: 0.6424 is error Iteration error is 0.6423 390: Iteration error is 400: 0.64221 Iteration 410: error is 0.64214 Iteration 420: is 0.64208 error Iteration 430: is 0.64202 error Iteration is 0.64198 440: error Iteration 450: is 0.64193 error Iteration 0.6419 460: is error Iteration 470: 0.64187 is error Iteration 480: 0.64184 error is

Iteration is 0.64181 490: error 0.64179 Iteration 500: is error Iteration is 510: 0.64177 error Iteration 520: is 0.64176 error 530: Iteration 0.64174 error is Iteration 540: is 0.64173 error Iteration 550: 0.64172 is error Iteration 560: is 0.64171 error Iteration 570: is 0.6417 error Iteration 580: is 0.64169 error Iteration 0.64169 590: is error Iteration error is 0.64168 600: Iteration 610: is 0.64167 error Iteration is 620: 0.64167 error Iteration is 630: 0.64167 error Iteration is 640: 0.64166 error Iteration is 650: 0.64166 error Iteration 660: is 0.64165 error Iteration 670: is 0.64165 error Iteration 680: 0.64165 is error Iteration error is 690: 0.64165

Iteration 700: is 0.64164 error Iteration is 0.64164 710: error Iteration is 720: 0.64164 error Iteration 0.64164 730: error is Iteration 0.64164 error 740: is Iteration 750: error 0.64164 is Iteration 760: 0.64164 is error Iteration is 0.64164 770: error Iteration 0.64163 780: is error Iteration is 0.64163 790: error Iteration 0.64163 800: is error Iteration error is 0.64163 810: Iteration 820: is 0.64163 error Iteration 830: error is 0.64163 Iteration 840: is 0.64163 error Iteration 850: is 0.64163 error is Iteration 860: 0.64163 error Iteration 870: is 0.64163 error Iteration 880: is 0.64163 error Iteration 0.64163 is 890: error Iteration error is 0.64163 900:

```
Iteration 910: error is 0.64163
```

J new =
$$0.8433$$

J new =
$$0.8274$$

$$J new = 0.8164$$

$$J new = 0.8143$$

J new =
$$0.8118$$

J new =
$$0.8075$$

J new =
$$0.8059$$

J new =
$$0.8014$$

J new =
$$0.7861$$

$$J \text{ new} = 0.7421$$

J new =
$$0.7426$$

Mean value of sigma: 0.16017 Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: error is 39.4171 Iteration 20: error is 36.8787 Iteration 30: error is 37.1461 Iteration 40: error is 36.535 Iteration 50: error is 36.184 Iteration 60: error is 37.7389 Iteration 70: error is 37.4823 Iteration 80: error is 37.0722 Iteration 90: error is 37.1735 Iteration 100: error is 2.1321 Iteration 110: error is 1.332 error is 0.84776 Iteration 120: Iteration 130: error is 0.72719 Iteration 140: error is 0.71149 Iteration 150: error is 0.70123 Iteration 160: error is 0.69554 Iteration 170: error is 0.69119 error is 0.68799 Iteration 180:

Iteration is 0.68548 190: error Iteration 200: is 0.68348 error Iteration is 210: 0.68193 error Iteration 0.68056 220: is error Iteration error 230: is 0.67944 Iteration 240: error 0.67852 is Iteration 250: is 0.67774 error Iteration 260: is 0.67651 error Iteration 0.67515 270: is error Iteration 0.67417 280: error is Iteration 0.67353 290: is error Iteration 300: error is 0.67303 Iteration 310: is 0.67262 error Iteration 320: is 0.67232 error Iteration 330: is 0.67207 error Iteration 340: is 0.67187 error is Iteration 350: 0.67172 error Iteration 360: is 0.6716 error Iteration 0.67149 370: is error Iteration is 0.6714 380: error Iteration 390: is 0.67133 error

Iteration 400: is 0.67126 error Iteration 410: is 0.67121 error Iteration is 420: 0.67117 error Iteration 430: 0.67113 error is Iteration error 440: is 0.6711 Iteration 450: 0.67108 is error Iteration 0.67105 460: is error Iteration is 0.67104 470: error Iteration 0.67102 480: is error Iteration 490: error is 0.67101 Iteration 500: 0.67099 is error Iteration 510: error is 0.67098 0.67097 Iteration 520: is error Iteration 530: is 0.67097 error Iteration 540: is 0.67096 error Iteration 550: is 0.67095 error is Iteration 560: 0.67095 error Iteration 570: 0.67094 is error Iteration 580: is 0.67094 error Iteration 0.67094 is 590: error Iteration 600: is 0.67093 error

Iteration 610: is 0.67093 error Iteration 620: is 0.67093 error Iteration 630: is 0.67093 error Iteration 0.67093 640: is error 650: Iteration 0.67092 error is Iteration 660: 0.67092 is error Iteration 0.67092 670: is error Iteration 680: is 0.67092 error Iteration 0.67092 690: is error Iteration 700: error is 0.67092 Iteration 0.67092 error is 710: Iteration error is 0.67092 720: Iteration error is 730: 0.67092 Iteration 0.67092 740: error is Iteration is 750: 0.67092 error Iteration is 760: 0.67092 error Iteration is 770: 0.67092 error Iteration 780: 0.67092 is error Iteration 790: is 0.67092 error Iteration is 0.67092 800: error Iteration error is 810: 0.67092

Iteration 820: error is 0.67092 error is 0.67092 Iteration 830: Iteration 840: error is 0.67092 Iteration 850: error is 0.67092 error is 0.67092 Iteration 860: Iteration 870: error is 0.67091 error is 0.67091 Iteration 880: Iteration 890: error is 0.67091 Iteration 900: error is 0.67091 Iteration 910: error is 0.67091 Iteration 920: error is 0.67091 Iteration 930: error is 0.67091 Iteration 940: error is 0.67091 Iteration 950: error is 0.67091 Iteration 960: error is 0.67091 Iteration 970: error is 0.67091 error is 0.67091 Iteration 980: Iteration 990: error is 0.67091 Iteration 1000: error is 0.67091 J new = 0.8365J new = 0.8285

- J new = 0.8278
- J new = 0.8255
- $J_{new} = 0.8202$
- J new = 0.8184
- J new = 0.8177
- J new = 0.8162
- J new = 0.8144
- J new = 0.8133
- J new = 0.8128
- J new = 0.8128
- J new = 0.8126
- J new = 0.8127
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.2249
- Iteration 20: error is 37.4246
- Iteration 30: error is 36.9642
- Iteration 40: error is 37.1386
- Iteration 50: error is 37.3022
- Iteration 60: error is 37.0743

Iteration 70: error is 36.9794 is Iteration 80: 37.3192 error Iteration 90: is 37.3301 error Iteration 100: 2.2479 error İS Iteration is error 110: 1.354 Iteration 120: error 0.97987 is Iteration 130: 0.85149 is error Iteration 140: is 0.7614 error Iteration 0.69913 150: is error Iteration 160: 0.68339 error is Iteration 170: 0.66191 error is Iteration error is 0.65554 180: error is Iteration 190: 0.65296 Iteration 200: 0.65093 error is Iteration 210: is 0.64918 error Iteration 220: is 0.64772 error Iteration is 230: 0.64653 error Iteration 240: is 0.6455 error Iteration 250: is 0.64462 error Iteration 260: 0.64318 is error Iteration 270: error is 0.64164

Iteration is 0.64051 280: error 0.63968 Iteration 290: is error Iteration is 300: 0.63905 error Iteration 310: 0.63855 is error Iteration 0.63816 error 320: is Iteration 330: error is 0.63784 Iteration 0.63758 340: is error Iteration 0.63738 350: is error Iteration 360: is 0.6372 error Iteration 0.63706 370: error is Iteration 380: 0.63694 is error Iteration error is 0.63684 390: Iteration 0.63675 400: is error Iteration 0.63668 410: error is Iteration 420: is 0.63661 error Iteration 430: is 0.63656 error Iteration is 440: 0.63651 error Iteration 450: is 0.63647 error Iteration 460: is 0.63643 error Iteration 470: is 0.6364 error Iteration 480: error is 0.63638

Iteration is 0.63635 490: error is 0.63633 Iteration 500: error is Iteration 0.63631 510: error Iteration 520: 0.63629 is error 530: Iteration 0.63628 error is Iteration 540: 0.63627 is error Iteration 550: 0.63625 is error Iteration 0.63624 560: is error Iteration 0.63624 570: is error Iteration 580: 0.63623 is error Iteration 0.63622 590: is error Iteration error is 0.63621 600: Iteration 0.63621 610: is error Iteration is 0.6362 620: error Iteration 630: is 0.6362 error Iteration is 640: 0.63619 error Iteration is 650: 0.63619 error Iteration 660: is 0.63619 error Iteration 670: is 0.63618 error Iteration 680: 0.63618 is error Iteration is 690: 0.63618 error

Iteration 700: is 0.63618 error Iteration 710: is 0.63617 error Iteration is 720: 0.63617 error Iteration 0.63617 730: is error Iteration 0.63617 error 740: is Iteration 0.63617 750: is error Iteration 760: 0.63617 is error Iteration 0.63617 is 770: error Iteration 0.63617 780: is error Iteration 0.63616 790: error is Iteration 0.63616 800: is error Iteration error is 0.63616 810: Iteration 820: is 0.63616 error Iteration is 830: 0.63616 error Iteration is 0.63616 840: error Iteration is 850: 0.63616 error is Iteration 860: 0.63616 error Iteration 870: 0.63616 is error Iteration 880: is 0.63616 error Iteration is 0.63616 890: error Iteration 900: is 0.63616 error

```
Iteration 910: error is 0.63616
```

J new =
$$0.8521$$

J new =
$$0.8277$$

$$J new = 0.8172$$

J new =
$$0.8152$$

J new =
$$0.8148$$

J new =
$$0.8110$$

$$J \text{ new} = 0.8092$$

J new =
$$0.8054$$

J new =
$$0.8036$$

J new =
$$0.7898$$

J new =
$$0.7825$$

 $J_{new} = 0.7420$

 $J_{new} = 0.7429$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.7468

Iteration 20: error is 36.8331

Iteration 30: error is 36.8245

Iteration 40: error is 36.1705

Iteration 50: error is 36.5223

Iteration 60: error is 37.0641

Iteration 70: error is 37.5226

Iteration 80: error is 37.6583

Iteration 90: error is 37.6131

Iteration 100: error is 2.3328

Iteration 110: error is 1.3803

Iteration 120: error is 0.95813

Iteration 130: error is 0.83919

Iteration 140: error is 0.81479

Iteration 150: error is 0.78794

Iteration 160: error is 0.6823

Iteration is 0.68505 170: error is Iteration 180: 0.66006 error is Iteration 190: 0.65615 error Iteration 0.65433 200: is error 0.65285 Iteration error 210: is Iteration 0.65138 220: is error Iteration 0.65033 230: is error Iteration 0.64949 is 240: error Iteration 0.64867 250: is error Iteration 0.64748 260: is error Iteration 0.64614 270: is error Iteration error is 0.64516 280: Iteration 290: is 0.64444 error Iteration is 0.64388 300: error Iteration 310: is 0.64345 error Iteration 320: 0.64311 is error is Iteration 330: 0.64283 error Iteration 340: is 0.6426 error Iteration 350: is 0.64242 error Iteration 360: 0.64227 is error Iteration 370: is 0.64213 error

Iteration is 0.64203 380: error 0.64194 Iteration 390: is error Iteration 0.64186 is 400: error Iteration 410: is 0.64179 error Iteration is 0.64173 error 420: Iteration 430: error is 0.64168 Iteration 0.64163 440: is error Iteration 450: 0.64159 is error Iteration 0.64155 460: is error Iteration 470: is 0.64152 error Iteration error is 0.6415 480: Iteration error is 0.64147 490: Iteration error is 500: 0.64145 Iteration 510: error is 0.64143 Iteration 520: is 0.64141 error Iteration 530: is 0.6414 error Iteration 540: is 0.64138 error Iteration 550: is 0.64137 error Iteration 560: is 0.64136 error Iteration 570: 0.64135 is error Iteration 580: error is 0.64134

Iteration is 0.64133 590: error 0.64132 Iteration 600: is error Iteration is 610: 0.64131 error Iteration 0.64131 620: error is 630: Iteration error 0.6413 is Iteration 640: error 0.6413 is Iteration 650: 0.64129 is error Iteration 660: is 0.64129 error Iteration 670: is 0.64128 error Iteration 0.64128 680: error is Iteration 0.64128 690: is error Iteration error is 0.64127 700: Iteration 710: is 0.64127 error Iteration 720: is 0.64127 error Iteration is 0.64127 730: error Iteration 740: is 0.64126 error Iteration is 0.64126 750: error Iteration 760: 0.64126 is error Iteration 770: is 0.64126 error Iteration 0.64126 is 780: error Iteration 790: error is 0.64126

Iteration is 0.64126 800: error 0.64125 Iteration 810: is error Iteration is 820: 0.64125 error Iteration 830: 0.64125 is error 0.64125 Iteration error 840: is Iteration 850: error 0.64125 is Iteration 860: 0.64125 is error Iteration 0.64125 is 870: error Iteration 0.64125 is 880: error Iteration is 0.64125 890: error Iteration 0.64125 error is 900: Iteration error is 0.64125 910: Iteration error is 0.64125 920: Iteration 930: 0.64125 error is Iteration 940: is 0.64124 error Iteration 950: is 0.64124 error Iteration 960: is 0.64124 error Iteration 970: is 0.64124 error Iteration 980: is 0.64124 error Iteration is 990: 0.64124 error Iteration 1000: error is 0.64124

- J new = 0.8343
- J new = 0.8193
- J new = 0.8173
- J new = 0.8169
- J new = 0.8148
- J new = 0.8142
- J new = 0.8107
- J new = 0.8088
- J new = 0.8052
- J new = 0.8031
- J new = 0.7896
- J new = 0.7820
- J new = 0.7418
- J new = 0.7425
- Mean value of sigma: 0.16017
- Minimum value of sigma: 0.1114
- Maximum value of sigma: 0.27312
- Iteration 10: error is 39.6643
- Iteration 20: error is 37.566
- Iteration 30: error is 37.1751
- Iteration 40: error is 37.2269

Iteration 50: is 36.825 error is 37.545 Iteration 60: error Iteration is 70: 37.6106 error Iteration 80: 37.3548 is error Iteration is 90: 38.0102 error Iteration 100: is 2.2847 error Iteration is 1,2909 110: error Iteration 0.90305 120: is error Iteration 0.80821 130: is error Iteration 140: error is 0.74403 Iteration 150: 0.70156 error is Iteration error is 0.69533 160: 0.69003 error is Iteration 170: Iteration 180: error is 0.68682 Iteration 190: is 0.67397 error Iteration is 200: 0.66848 error Iteration is 210: 0.66674 error Iteration 220: 0.66507 is error Iteration 230: is 0.65848 error Iteration 0.65162 is 240: error Iteration error is 250: 0.65063

Iteration is 0.64916 260: error Iteration 270: is 0.64764 error Iteration 280: is 0.6465 error Iteration 290: 0.64556 is error 0.64495 Iteration error 300: is Iteration 310: error 0.64447 is Iteration 0.64408 320: is error Iteration 0.64317 is 330: error Iteration 0.64285 340: is error Iteration 350: 0.64264 error is Iteration 360: 0.64248 is error Iteration 370: error is 0.64234 Iteration 380: is 0.64221 error Iteration 390: error is 0.64211 Iteration is 0.64202 400: error Iteration is 0.64194 410: error Iteration is 0.64188 420: error Iteration 430: is 0.64182 error Iteration 440: is 0.64177 error Iteration 450: 0.64173 is error Iteration 0.64169 460: error is

Iteration is 0.64166 470: error 480: 0.64164 Iteration is error Iteration 0.64161 is 490: error Iteration 0.64159 500: is error 510: Iteration 0.64157 error is Iteration 520: error 0.64156 is Iteration 0.64154 530: is error Iteration 0.64153 540: is error Iteration 0.64152 550: is error Iteration 560: is 0.64151 error Iteration 570: is 0.6415 error Iteration error is 0.64149 580: Iteration 590: is 0.64148 error Iteration is 600: 0.64148 error Iteration is 610: 0.64147 error Iteration 620: is 0.64147 error Iteration is 630: 0.64146 error Iteration 640: is 0.64146 error Iteration 650: is 0.64145 error Iteration 660: 0.64145 is error Iteration 670: is 0.64145 error

Iteration is 0.64145 680: error Iteration 0.64144 690: is error Iteration is 700: 0.64144 error Iteration 710: 0.64144 error is Iteration 0.64144 error 720: is Iteration 730: error 0.64144 is Iteration 0.64144 740: is error Iteration 0.64143 is 750: error Iteration 0.64143 760: is error Iteration 0.64143 770: error is Iteration 0.64143 780: is error Iteration error is 0.64143 790: Iteration 0.64143 800: is error Iteration is 810: 0.64143 error Iteration 820: is 0.64143 error Iteration 830: is 0.64143 error Iteration 840: is 0.64143 error Iteration 850: is 0.64143 error Iteration 860: is 0.64143 error Iteration 870: 0.64143 is error Iteration 880: is 0.64143 error

```
Iteration 890: error is 0.64143
Iteration 900: error is 0.64143
Iteration 910: error is 0.64143
Iteration 920: error is 0.64143
Iteration 930: error is 0.64142
Iteration 940: error is 0.64142
Iteration 950: error is 0.64142
Iteration 960: error is 0.64142
Iteration 970: error is 0.64142
Iteration 980: error is 0.64142
Iteration 990: error is 0.64142
Iteration 1000: error is 0.64142
J new = 0.7926
J new = 0.7669
J new = 0.7505
J new = 0.7395
J new = 0.7386
J new = 0.7396
Mean value of sigma: 0.16017
```

Minimum value of sigma: 0.1114 Maximum value of sigma: 0.27312 Iteration 10: is 39.8524 error is 37.203 Iteration 20: error Iteration 30: is 37.1345 error Iteration 40: is 37.2295 error Iteration 50: is 36.9972 error Iteration 60: is 37,2935 error Iteration 70: is 37,1445 error Iteration is 80: 37,4572 error Iteration is 37.6041 90: error Iteration error is 2.2977 100: Iteration 110: is 1.3045 error Iteration 120: error is 0.89075 error is Iteration 130: 0.79401 Iteration 140: 0.71088 error is Iteration 150: is 0.68502 error Iteration 160: is 0.67837 error Iteration is 170: 0.66206 error Iteration 180: is 0.6581 error Iteration 190: is 0.6554 error Iteration 0.65297 200: is error Iteration 210: error is 0.65123

Iteration is 0.6498 220: error 0.64843 Iteration 230: is error Iteration 0.6474 240: is error Iteration 250: is 0.64651 error 260: Iteration 0.64511 error is Iteration 0.64365 270: is error Iteration 280: is 0.6426 error Iteration is 0.64181 290: error Iteration 0.64122 300: is error Iteration error is 310: 0.64077 Iteration 320: 0.64042 error is Iteration 330: error is 0.64015 Iteration 340: error is 0.63992 Iteration 350: error is 0.63974 Iteration 360: is 0.63959 error Iteration 370: 0.63947 is error is Iteration 380: 0.63937 error Iteration 390: is 0.63929 error Iteration 0.63921 400: is error Iteration 410: 0.63915 is error Iteration error is 420: 0.6391

Iteration is 0.63905 430: error 0.63902 Iteration 440: is error Iteration 0.63898 is 450: error Iteration 0.63896 460: error is Iteration 0.63893 error 470: is Iteration 480: 0.63891 is error Iteration 0.63889 490: is error Iteration is 0.63888 500: error Iteration 0.63887 510: is error Iteration 520: 0.63885 error is Iteration 530: 0.63884 is error Iteration 0.63883 540: is error 550: 0.63883 Iteration is error Iteration 560: is 0.63882 error Iteration is 570: 0.63881 error Iteration 580: is 0.63881 error Iteration is 590: 0.6388 error Iteration 600: 0.6388 is error Iteration 610: is 0.6388 error Iteration 620: 0.63879 is error Iteration 630: is 0.63879 error

Iteration 640: is 0.63879 error Iteration 650: is 0.63879 error Iteration 660: is 0.63878 error Iteration 670: 0.63878 error is Iteration 0.63878 680: error is Iteration 690: error 0.63878 is Iteration 0.63878 700: is error Iteration is 0.63878 710: error Iteration 0.63878 720: is error Iteration 0.63877 730: error is Iteration 0.63877 740: is error Iteration error is 0.63877 750: Iteration 0.63877 760: is error Iteration is 0.63877 770: error Iteration is 780: 0.63877 error Iteration 790: is 0.63877 error Iteration is 800: 0.63877 error Iteration 810: 0.63877 is error Iteration 820: is 0.63877 error Iteration 830: 0.63877 is error Iteration 840: is 0.63877 error

```
Iteration 850: error is 0.63877
Iteration 860:
               error is 0.63877
               error is 0.63877
Iteration 870:
Iteration 880:
               error is 0.63877
Iteration 890:
               error is 0.63877
Iteration 900:
               error is 0.63877
Iteration 910:
               error is 0.63877
Iteration 920:
               error is 0.63877
Iteration 930:
               error is 0.63877
Iteration 940:
               error is 0.63877
Iteration 950: error is 0.63877
Iteration 960: error is 0.63877
Iteration 970: error is 0.63877
Iteration 980: error is 0.63877
Iteration 990: error is 0.63877
Iteration 1000: error is 0.63877
J new = 0.8322
J new = 0.8189
J new = 0.8151
J new = 0.8127
J new = 0.8091
```

J new = 0.8067

J new = 0.7999

J new = 0.7862

J new = 0.7422

 $J_{new} = 0.7425$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 38.4837

Iteration 20: error is 37.0391

Iteration 30: error is 36.8406

Iteration 40: error is 36.7153

Iteration 50: error is 36.7781

Iteration 60: error is 36.465

Iteration 70: error is 37.3021

Iteration 80: error is 37.3999

Iteration 90: error is 37.0042

Iteration 100: error is 2.194

Iteration 110: error is 1.1954

Iteration 120: error is 0.83884

Iteration 130: error is 0.71019

Iteration is 0.68976 140: error 150: is Iteration 0.67965 error Iteration 160: is 0.6734 error Iteration 170: 0.66825 is error Iteration 0.66305 error 180: is Iteration 190: is 0.66041 error Iteration 0.65831 200: is error Iteration 0.65669 is 210: error Iteration 0.65525 220: is error Iteration 0.65412 230: is error Iteration 0.65313 240: is error Iteration error is 0.65225 250: Iteration 0.65093 260: is error Iteration is 0.64942 270: error Iteration is 280: 0.64836 error Iteration is 0.64758 290: error Iteration 300: is 0.647 error Iteration 310: is 0.64656 error Iteration 320: is 0.64621 error Iteration 330: 0.64596 is error Iteration 340: error is 0.64571

Iteration 350: is 0.64555 error 0.6454 Iteration 360: is error Iteration 370: 0.64528 is error Iteration 380: 0.64518 is error Iteration 0.64509 error 390: is Iteration 400: is 0.64501 error Iteration 0.64495 410: is error Iteration 420: is 0.64489 error Iteration 430: is 0.64484 error Iteration is 0.6448 440: error Iteration 450: 0.64477 is error Iteration error is 0.64474 460: Iteration 470: is 0.64471 error Iteration error is 0.64469 480: Iteration is 0.64467 490: error Iteration 500: is 0.64465 error Iteration 510: is 0.64463 error Iteration 520: is 0.64462 error Iteration 530: is 0.64461 error Iteration 540: 0.6446 is error Iteration 550: error is 0.64459

Iteration 560: is 0.64458 error Iteration 570: is 0.64457 error Iteration 580: is error 0.64457 Iteration 590: is 0.64456 error Iteration 600: is 0.64456 error Iteration 0.64455 610: is error Iteration 0.64455 620: is error Iteration is 0.64454 630: error Iteration 0.64454 640: is error Iteration 650: is 0.64454 error Iteration 0.64454 error is 660: Iteration error is 0.64453 670: Iteration 0.64453 680: is error Iteration error is 0.64453 690: Iteration is 0.64453 700: error Iteration 710: is 0.64453 error Iteration 0.64453 720: is error Iteration 730: is 0.64453 error Iteration 0.64452 740: is error Iteration 750: 0.64452 is error Iteration 760: error is 0.64452

Iteration is 0.64452 770: error 780: Iteration is 0.64452 error Iteration 0.64452 is 790: error Iteration is 0.64452 800: error Iteration 0.64452 error 810: is Iteration 820: 0.64452 is error Iteration 0.64452 830: is error Iteration is 0.64452 840: error Iteration 850: is 0.64452 error Iteration 0.64452 860: is error Iteration 0.64452 870: is error Iteration error is 0.64452 880: Iteration 0.64452 890: is error Iteration 0.64452 900: is error Iteration 910: is 0.64452 error Iteration 920: is 0.64452 error Iteration 930: 0.64452 is error Iteration 940: is 0.64452 error Iteration 950: error is 0.64452 Iteration 960: 0.64452 is error Iteration 970: error is 0.64452

Iteration 980: error is 0.64452

Iteration 990: error is 0.64452

Iteration 1000: error is 0.64452

 $J_{new} = 0.8666$

J new = 0.8373

J new = 0.8246

J new = 0.8155

J new = 0.8137

J new = 0.8116

J new = 0.8079

J new = 0.8061

J new = 0.8022

J new = 0.7905

J new = 0.7811

J new = 0.7427

J new = 0.7416

 $J_{new} = 0.7424$

Mean value of sigma: 0.16017

Minimum value of sigma: 0.1114

Maximum value of sigma: 0.27312

Iteration 10: error is 39.7067

Iteration 20: is 36.7748 error 30: is 36.5686 Iteration error Iteration is 36.8591 40: error Iteration 50: error is 37.1208 60: Iteration is 37.0643 error Iteration 70: is 37.0864 error Iteration is 80: error 36,996 Iteration error is 37.5749 90: Iteration error is 100: 2,2757 Iteration 110: error is 1.248 Iteration 120: error is 1.0093 Iteration 130: error is 0.83581 error is 0.76915 Iteration 140: Iteration 150: 0.67477 error is Iteration 160: error is 0.65931 Iteration 170: is 0.65522 error Iteration is 180: 0.65188 error Iteration 190: is 0.64933 error Iteration 200: İS 0.64723 error Iteration 0.64557 210: is error Iteration 220: error is 0.64411

Iteration is 0.64288 230: error Iteration 240: is 0.64181 error Iteration 0.64092 is 250: error Iteration 0.6395 260: is error Iteration is 0.6379 error 270: Iteration 280: is 0.63675 error Iteration 0.63591 290: is error Iteration 0.63527 is 300: error Iteration 0.63476 310: is error Iteration 0.63437 320: is error Iteration 330: 0.63405 is error Iteration 340: error is 0.63379 Iteration 350: 0.63358 is error Iteration 360: is 0.63341 error Iteration 370: is 0.63326 error Iteration 380: is 0.63314 error Iteration 390: is 0.63304 error Iteration 400: is 0.63296 error Iteration 410: is 0.63288 error Iteration 420: 0.63283 is error Iteration 430: is 0.63277 error

Iteration 440: is 0.63272 error Iteration 450: is 0.63268 error Iteration 0.63264 is 460: error Iteration 470: is 0.63261 error Iteration is 0.63259 error 480: Iteration 490: is 0.63256 error Iteration 0.63254 500: is error Iteration 0.63253 510: is error Iteration 0.63251 520: is error Iteration 530: 0.63249 error is Iteration 540: 0.63248 is error Iteration error is 550: 0.63247 560: Iteration is 0.63246 error Iteration is 570: 0.63245 error Iteration 580: is 0.63244 error Iteration 590: is 0.63244 error Iteration is 0.63243 600: error Iteration 610: is 0.63243 error Iteration 620: is 0.63242 error Iteration 630: 0.63242 is error Iteration 640: is 0.63241 error

Iteration 650: is 0.63241 error Iteration 660: is 0.63241 error Iteration is 670: 0.6324 error Iteration 680: 0.6324 error is 690: Iteration error is 0.6324 Iteration 700: 0.6324 is error Iteration 710: is 0.6324 error Iteration 0.63239 is 720: error Iteration 0.63239 is 730: error Iteration 0.63239 740: is error Iteration 750: 0.63239 error is Iteration error is 0.63239 760: Iteration 0.63239 770: is error Iteration 0.63239 780: error is Iteration is 0.63239 790: error Iteration is 800: 0.63239 error Iteration is 0.63239 810: error Iteration 820: is 0.63239 error Iteration 830: is 0.63238 error Iteration 0.63238 is 840: error Iteration error is 850: 0.63238

```
Iteration 860: error is 0.63238
Iteration 870:
               error is 0.63238
               error is 0.63238
Iteration 880:
Iteration 890:
               error is 0.63238
Iteration 900:
               error is 0.63238
Iteration 910:
               error is 0.63238
Iteration 920:
               error is 0.63238
Iteration 930:
               error is 0.63238
Iteration 940: error is 0.63238
Iteration 950:
               error is 0.63238
Iteration 960: error is 0.63238
Iteration 970: error is 0.63238
Iteration 980: error is 0.63238
Iteration 990: error is 0.63238
Iteration 1000: error is 0.63238
J \text{ new} = 0.8447
J new = 0.8272
J new = 0.8162
J new = 0.8142
J new = 0.8120
J \text{ new} = 0.8081
```

J_new = 0.8065
J_new = 0.8025
J_new = 0.7909
J_new = 0.7814
J_new = 0.7431
J_new = 0.7419
J_new = 0.7428
E_best = 0.1402

Iteration	Func-count	f(x)
0	1	0.763527
1	5	0.754017
2	6	0.7327
3	7	0.716599
4	9	0.710581
5	10	0.70728
6	11	0.701632
7	13	0.699183
8	15	0.695828
9	17	0.694815
10	19	0.692125

11	21	0.688459
12	23	0.687298
13	24	0.685379
14	26	0.684276
15	28	0.68322
16	30	0.682079
17	31	0.68096
18	32	0.680441
19	33	0.679827
Iteration	Func-count	f(x)
20	34	0.679743
21	35	0.678852
22		
22	37	0.678291
23	37 39	0.678291 0.677977
23	39	0.677977
23 24	39 40	0.6779770.677868
232425	39 40 41	0.6779770.6778680.677457
23242526	39 40 41 43	0.6779770.6778680.6774570.677229

30	49	0.675166
31	50	0.674646
32	52	0.674318
33	53	0.674101
34	54	0.673865
35	56	0.673771
36	57	0.673623
37	58	0.673436
38	59	0.673269
39	60	0.67315
Iteration	Func-count	f(x)
Iteration 40	Func-count 61	f(x) 0.67287
40	61	0.67287
40 41	61 63	0.672870.672619
40 41 42	61 63 66	0.672870.6726190.672462
40 41 42 43	61 63 66 68	0.672870.6726190.6724620.672321
40 41 42 43 44	61 63 66 68 69	0.672870.6726190.6724620.6723210.672167
40 41 42 43 44 45	61 63 66 68 69 70	0.672870.6726190.6724620.6723210.6721670.671922

49	75	0.670714
50	76	0.670665
51	77	0.670606
52	78	0.670033
53	79	0.66992
54	80	0.669658
55	82	0.669227
56	84	0.669128
57	85	0.668933
58	87	0.668726
59	88	0.668616
Iteration	Func-count	f(x)
60	89	0.668598
61	90	0.668548
62	91	0.668467
63	94	0.668001
64	96	0.667962
65	97	0.667635
66	98	0.667501
67	99	0.667445

68	100	0.667408
69	101	0.667376
70	102	0.667324
71	104	0.667243
72	105	0.66721
73	106	0.667159
74	107	0.667107
75	109	0.667033
76	111	0.667006
77	112	0.666981
78	113	0.666959
79	114	0.666944
Iteration	Func-count	f(x)
80	115	0.66692
81	116	0.666816
82	118	0.666803
83	119	0.666747
84	120	0.666713
85	121	0.666705
86	122	0.666697

87	123	0.666686
88	124	0.666673
89	125	0.666646
90	126	0.66663
91	127	0.666608
92	128	0.666597
93	129	0.66658
94	132	0.666521
95	134	0.666509
96	135	0.666458
97	136	0.666404
98	137	0.666371
99	138	0.666364
Iteration	Func-count	f(x)
100	139	0.666359
101	140	0.666357
102	141	0.666355
103	142	0.66635
104	143	0.666344
105	144	0.666338

106	145	0.666332
107	146	0.666324
108	147	0.66632
109	148	0.666315
110	149	0.666313
111	150	0.66631
112	151	0.666305
113	152	0.666298
114	153	0.666284
115	154	0.66627
116	155	0.666236
117	157	0.666131
118	159	0.666119
119	160	0.66605
Iteration	Func-count	f(x)
120	161	0.665988
121	162	0.665951
122	163	0.665923
123	164	0.665899
124	165	0.665878

125	166	0.665861
126	171	0.665683
127	174	0.665679
128	175	0.665588
129	176	0.665506
130	177	0.66549
131	178	0.665483
132	179	0.665479
133	180	0.665476
134	181	0.665473
135	182	0.665471
136	183	0.665468
137	184	0.665462
138	185	0.665453
139	187	0.665442
Iteration	Func-count	f(x)
140	188	0.665427
141	189	0.665417
142	190	0.665396
143	191	0.665387

144	192	0.665376
145	194	0.665355
146	196	0.665345
147	197	0.665333
148	198	0.665327
149	199	0.665325
150	200	0.665322
151	201	0.665318
152	206	0.665272
1 53	209	0.665269
154	210	0.665224
155	211	0.66517
156	212	0.665154
157	213	0.665144
158	219	0.66503
159	222	0.665024
Iteration	Func-count	f(x)
160	223	0.664884
161	224	0.664843
162	225	0.664829

163	226	0.664823
164	227	0.664819
165	228	0.664811
166	236	0.664597
167	240	0.664596
168	241	0.66452
169	242	0.664396
170	243	0.664376
171	244	0.664371
172	245	0.664368
173	246	0.664367
174	247	0.664365
175	248	0.664364
176	249	0.664363
177	250	0.664361
178	251	0.664359
179	252	0.664357
Iteration	Func-count	f(x)
180	253	0.664355
181	254	0.664352

182	255	0.66435
183	256	0.664349
184	257	0.664347
185	258	0.664345
186	259	0.664343
187	260	0.664339
188	264	0.664304
189	268	0.664303
190	269	0.664286
191	270	0.664237
192	271	0.6642
193	272	0.664177
194	273	0.664162
195	274	0.664152
196	275	0.664138
197	276	0.664113
198	278	0.664101
199	279	0.664085
Iteration	Func-count	f(x)
200	280	0.664075

201	281	0.664063
202	282	0.664057
203	283	0.664051
204	284	0.664046
205	285	0.664043
206	286	0.664042
207	287	0.664039
208	288	0.664038
209	289	0.664036
210	290	0.664035
211	291	0.664034
212	292	0.664032
213	293	0.664031
214	294	0.66403
215	295	0.664029
216	296	0.664029
217	297	0.664028
218	298	0.664027
219	299	0.664027

Iteration Func-count f(x)

220	300	0.664026
221	301	0.664025
222	302	0.664024
223	303	0.664022
224	304	0.664021
225	305	0.66402
226	306	0.664018
227	307	0.664016
228	308	0.664014
229	309	0.664012
230	310	0.664004
231	311	0.663825
232	314	0.663824
233	315	0.663731
234	318	0.66351
235	320	0.663474
236	321	0.66331
237	322	0.663214
238	323	0.663143
239	324	0.663129

Iteration	Func-count	f(x)
240	325	0.663119
241	326	0.663115
242	327	0.663112
243	328	0.663108
244	329	0.663104
245	330	0.663101
246	331	0.663099
247	332	0.663098
248	333	0.663096
249	334	0.663095
250	335	0.663094
251	336	0.663092
252	337	0.66309
253	338	0.663088
254	339	0.663086
255	340	0.663084
256	341	0.663083
257	342	0.663081
258	343	0.663079
259	344	0.663077

Iteration	Func-count	f(x)
260	345	0.663074
261	346	0.663072
262	347	0.663069
263	348	0.663066
264	349	0.663063
265	350	0.663062
266	351	0.663057
267	352	0.663052
268	353	0.66305
269	354	0.663048
270	356	0.663048
271	357	0.663047
272	358	0.663047
273	359	0.663046
274	360	0.663046
275	361	0.663046
276	362	0.663046
277	363	0.663045
278	364	0.663045

Iteration	Func-count	f(x)
280	366	0.663044
281	367	0.663043
282	368	0.663042
283	369	0.663042
284	370	0.663041
285	371	0.66304
286	372	0.663039
287	373	0.663037
288	374	0.663036
289	376	0.663035
290	377	0.663033
291	378	0.663031
292	379	0.663029
293	380	0.663027
294	381	0.663025
295	384	0.663015
296	387	0.663011
297	389	0.663007

298	390	0.662997
299	391	0.662986
Iteration	Func-count	f(x)
300	392	0.66297
301	393	0.662962
302	394	0.662956
303	395	0.662953
304	396	0.66295
305	397	0.662949
306	398	0.662947
307	399	0.662946
308	400	0.662946
309	401	0.662946
310	402	0.662945
311	403	0.662945
312	404	0.662945
313	405	0.662945
314	406	0.662944
315	407	0.662944
316	408	0.662944

317	409	0.662944
318	410	0.662944
319	411	0.662944
Iteration	Func-count	f(x)
320	412	0.662943
321	413	0.662943
322	414	0.662943
323	415	0.662943
324	416	0.662943
325	417	0.662943
326	418	0.662942
327	419	0.662942
328	420	0.662942
329	421	0.662941
330	422	0.662941
331	423	0.66294
332	424	0.66294
333	425	0.662939
334	426	0.662937
335	427	0.662936

336	429	0.662935
337	430	0.662934
338	431	0.662932
339	432	0.66293
Iteration	Func-count	f(x)
340	433	0.662929
341	434	0.662926
342	435	0.662924
343	436	0.662923
344	437	0.662922
345	438	0.662921
346	439	0.66292
347	440	0.662919
348	441	0.662918
349	442	0.662918
350	443	0.662918
351	444	0.662918
352	445	0.662918

Optimization completed: The first-order

than options.OptimalityTolerance = 1.00

Elapsed time is 54.225129 seconds.

```
toc;
```

Elapsed time is 54.230695 seconds.

```
class_order = Output.class_order;
data_perm = Output.data_perm;
k = par.K_cluster;
perm_class = Output.perm_class;
```

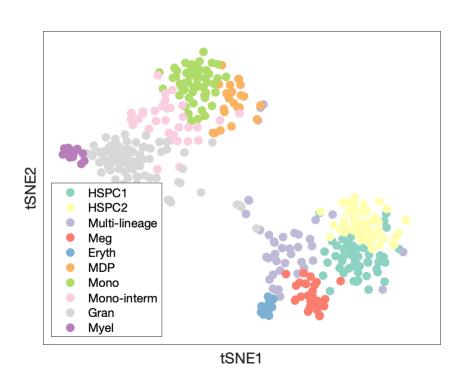
Cell-fate Landscape

embeddings and centers

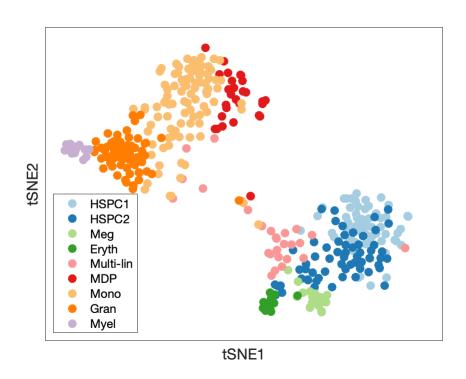
```
name_exp = {'HSPC1','HSPC2','Meg','Eryt
name_cluster = {'HSPC1','HSPC2','Multi-
colors_exp = brewermap(9,'paired');
colors_cluster = brewermap(k,'set3');
labs_perm = Output.labs_perm;
```

```
Output.embedding_2d = score_tsne(perm_c)
score_2d = score_tsne(perm_class,:);

figure;
gscatter(score_2d(:,1),score_2d(:,2),c]
legend(name_cluster,'Fontsize',12,'Loca
set(gca,'xtick',[],'ytick',[]);
xlabel('tSNE1','Fontsize',15)
ylabel('tSNE2','Fontsize',15)
```



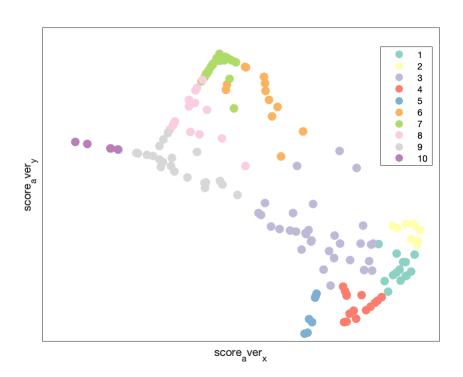
```
Output.embedding_2d = score_2d;
figure;
gscatter(score_2d(:,1),score_2d(:,2),lategend(name_exp,'Fontsize',12,'Locationset(gca,'xtick',[],'ytick',[]);
xlabel('tSNE1','Fontsize',15)
ylabel('tSNE2','Fontsize',15)
```



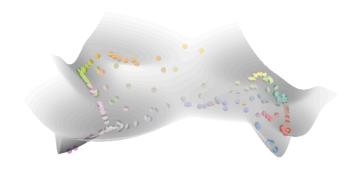
Output.embedding_2d = score_2d;

Construct landscape

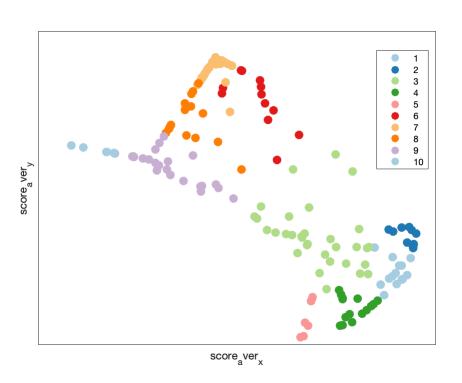
```
par.thresh_calc_center = 0.9;
par.thresh_calc_cov = 0.2;
par.N mesh = 1000;
par.mksize = 30;
par.scaleaxis = 1.1;
par.scalevalue = 1.1;
par.fontsize = 30;
par.alpha = 0.4;
par.plot_label = class_order;
par.legend_text = name_cluster;
par.colors = colors_cluster;
par.color_mixing = true;
land = ConstructLandscape (Output, par)
```



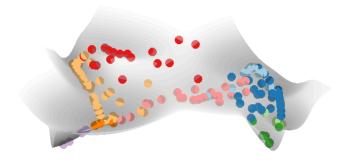
view([-46 81])



```
%colored by true label
par.color_mixing = false;
par.colors = colors_exp;
par.legend_text = name_exp;
labs_perm = Output.labs_perm;
par.plot_label = labs_perm;
land = ConstructLandscape (Output, par)
```



view([-46 81])

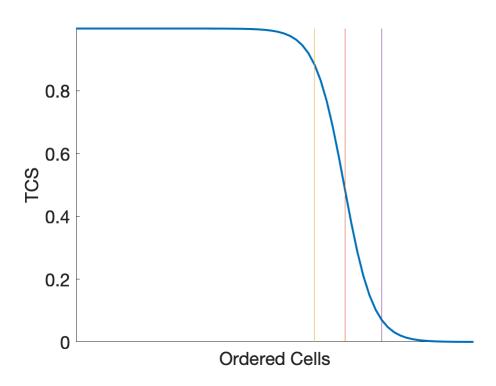


Transcendental transigion cell and gene analysis

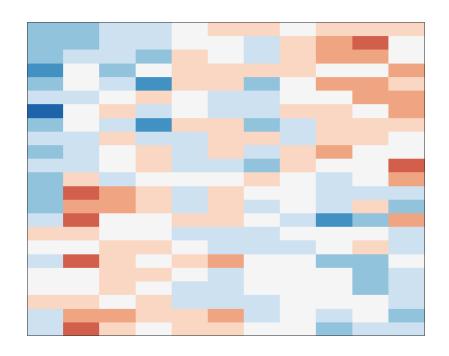
```
genes = gene_name_select;
par.genes = genes;
par.true_labs = labs_perm;
par.thresh_otherkeep = 0.2;
par.thresh_de_pvalues = 5e-3;
par.thresh_ms_pvalues = 1e-2;
par.thresh_tcs = 0.4;
par.thresh_td_genes = 0.4;
par.colors = colors_cluster;
```

```
par.flip = false;
par.display_genes_label = false;

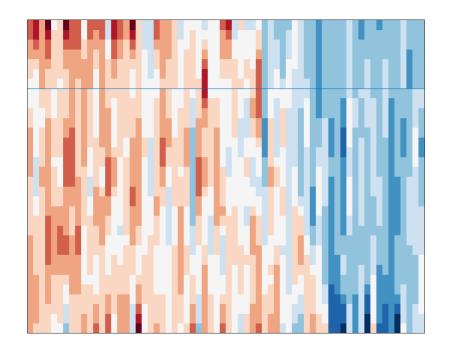
% check the state id before preceding
% clustering id. Results unchanged.
out_14 = GeneAnalysis(1, 4, Output,par)
```



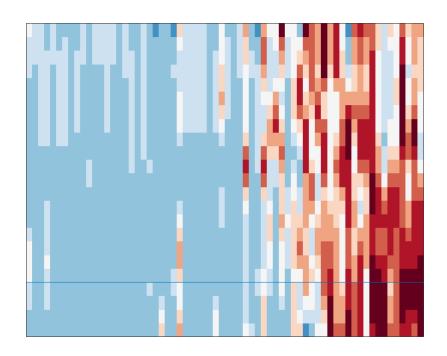
Below is the heatmap of transition gene



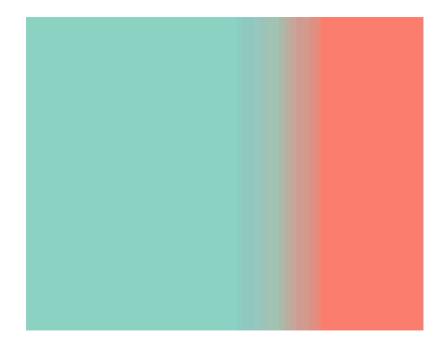
Below is the heatmap of down-regulated

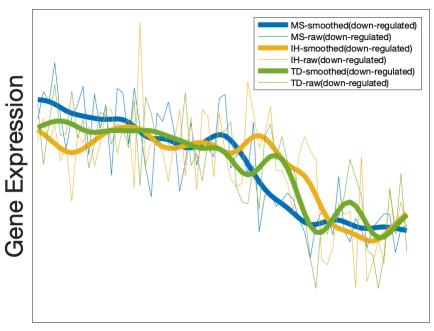


Below is the heatmap of up-regulated MS

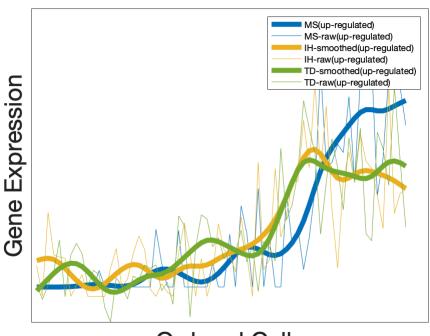


Below is the gradual cell indentity cha



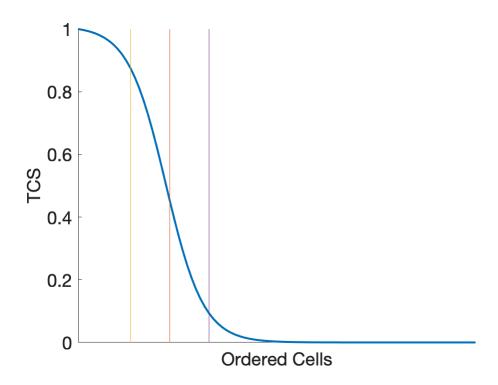


Ordered Cells

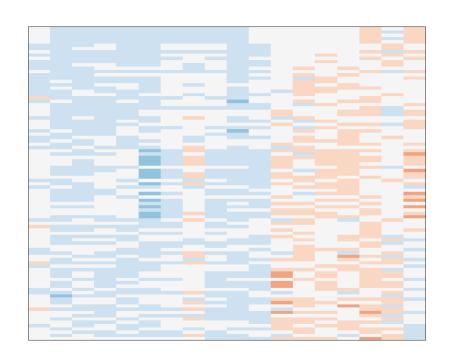


Ordered Cells

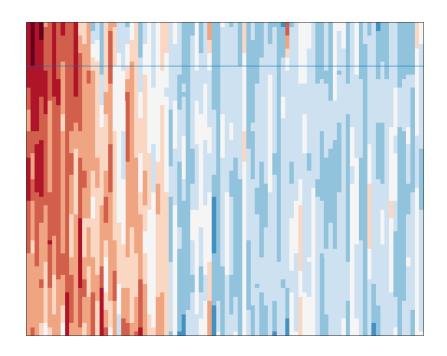
par.L_select_top_genes = 5;
out_39 = GeneAnalysis(3, 9, Output,par)



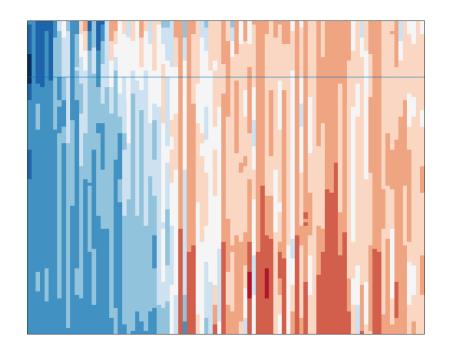
Below is the heatmap of transition gene



Below is the heatmap of down-regulated

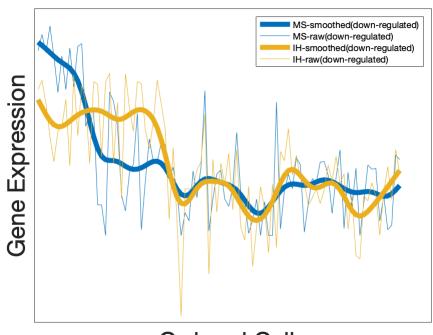


Below is the heatmap of up-regulated MS

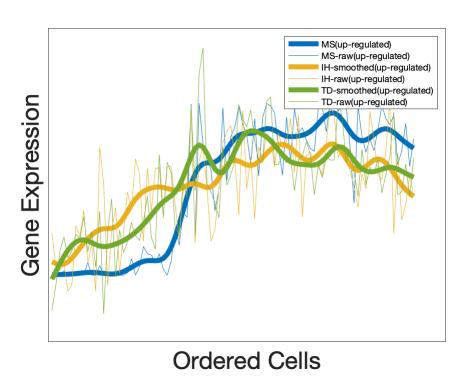


Below is the gradual cell indentity cha

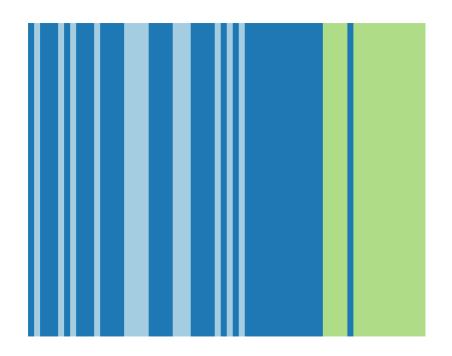




Ordered Cells



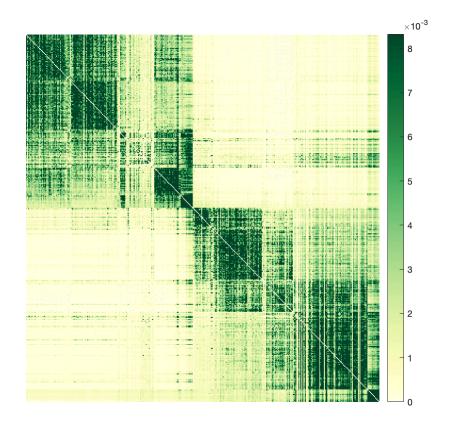
```
figure;
imagesc(out_14.cell_true_lab')
colormap(colors_exp)
caxis([1 10])
axis off
set(gca,'xtick',[],'ytick',[]);
box off
```



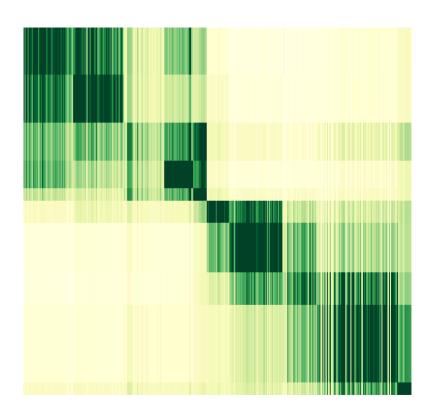
output other data in Supplementary

```
rho_class = Output.rho_class;
perm_class = Output.perm_class;
P_hat = Output.P_hat;
P_appr_perm = Output.P_appr_perm;
P_perm = Output.P_perm;
P_rho = Output.P_rho;
labs_perm = Output.labs_perm;
mu_hat = Output.mu_hat;
k = Output.k;
H = Output.H;
```

```
max_P = 0.2* max(max(P_rho));
c_{lim} = [0 max_P];
cmp = 'ylgn';
figure('rend','painters','pos',[10 10 5
colormap(brewermap([],cmp))
imagesc(P_perm);
axis off
set(gca,'xtick',[],'ytick',[]);
caxis(c_lim)
colorbar;
```



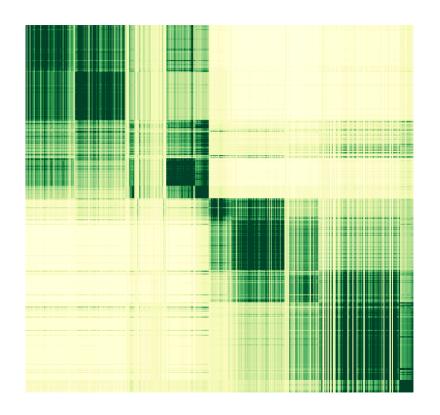
```
figure('rend','painters','pos',[10 10 5]
colormap(brewermap([],cmp))
imagesc(P_appr_perm);
axis off
set(gca,'xtick',[],'ytick',[]);
caxis(c_lim)
```



```
%colorbar;

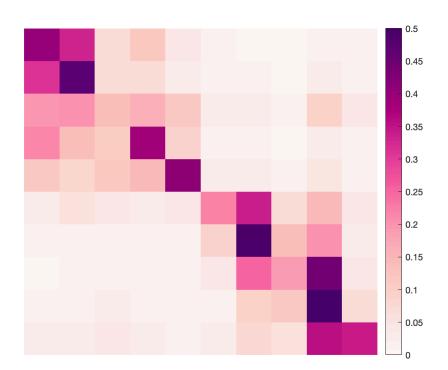
figure('rend','painters','pos',[10 10
colormap(brewermap([],cmp))
imagesc(P_rho);
axis off
set(gca,'xtick',[],'ytick',[]);
caxis(c_lim)
%colorbar;
```

box off



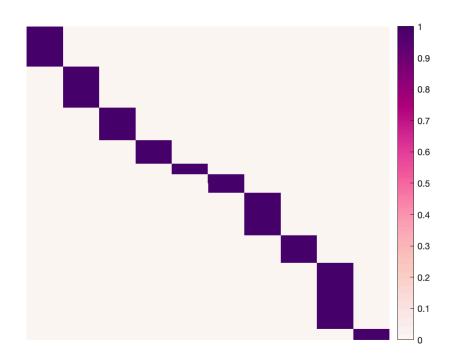
```
cmp = 'rdpu';
figure('rend','painters','pos',[10 10
colormap(brewermap([],cmp))
imagesc(P_hat);
caxis([0 0.5])
axis off
set(gca,'xtick',[],'ytick',[]);
```

box off colorbar;



```
figure;
for id_cluster = 1:k
member(:,id_cluster) = (class_order == end
colormap(brewermap([],cmp))
imagesc(member);
caxis([0 1])
colorbar;
```

```
axis off
set(gca,'xtick',[],'ytick',[]);
box off
```



```
figure;
colormap(brewermap([],cmp))
imagesc(rho_class);
caxis([0 1])
colorbar;
axis off
set(gca,'xtick',[],'ytick',[]);
```

box off

