Assignment 7

1. Markov Chain Monte Carlo

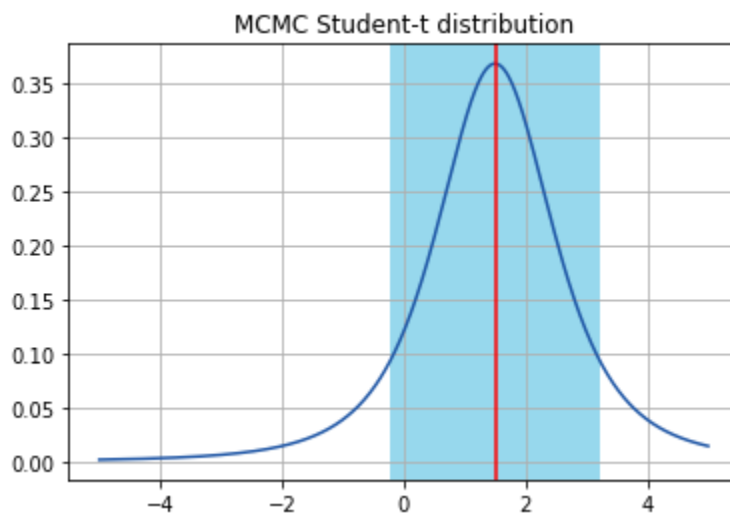Write a simple MCMC routine to produce N draws $\{x_i\}$ from the scaled/shifted Student-t distribution

where the parameters ν, σ, μ are fixed here, and they define the properties of the distribution. As a concrete example, set them to $\nu = 3$, $\sigma = 1$, $\mu = 1.5$. For the proposal distribution you could use normal random variable with standard distribution α.

```python
In [1]:  import numpy as np
         from scipy.stats import t, norm
         import matplotlib.pyplot as plt
         from scipy.special import gamma
```

```python
In [2]:  ns = [100, 1000, 10000]
         alphas = [0.01, 0.1, 1, 10]
         v = 3
         mu = 1.5
         sigma = 1
         mean_, var_ = t.stats(v, mu, sigma, moments='mv')
```

```python
In [3]:  def f(x, v, mu, std):
             return ((gamma((v+1) / 2) /
                      (gamma(v/2) * np.sqrt(v * np.pi) * std)) *
                     (1 + (1 / v) * ((x - mu) / std)**2)**(-(v+1)/2))
```

```
In [4]: def plot_t_dist():
            x = np.linspace(-5, 5, 1000)
            plt.title('MCMC Student-t distribution')
            plt.plot(x, f(x, 3, 1.5, 1), color='#1d55a5')
            plt.axvline(x=mean_, color='red', label=f'mean={mean_}, std={round(np.sqrt(var_), 4)}']
            plt.axvspan(float(mean_)-np.sqrt(var_), float(mean_)+np.sqrt(var_), facecolor='#97d8ed
            plt.grid()
            plt.show()
        plot_t_dist()
```


MCMC Student-t distribution

$$v = 3$$
$$\mu = 3$$
$$\sigma = 3$$

- (30 Points) Run your code trying four different jump size scalings, $\alpha = 0.01, \alpha = 0.1, \alpha = 1$ and $\alpha = 10$. Visually inspect the chains. Which one appears to be exploring the distribution most effectively?

```
In [5]: def MCMC(n, alpha, flag=False):
            x = np.zeros(n)
            accepted = 0
            if flag:
                print(f"MCMC: \nn={n}, alpha={alpha}\n")
            for i in range(n-1):
                x_ = x[i] + norm.rvs(loc=x[0], scale=alpha)
                u = np.random.rand()
                if u < min(1, f(x_, v, mu, sigma) / f(x[i], v, mu, sigma)):
                    accepted += 1
                    x[i+1] = x_
                else:
                    x[i+1] = x[i]
                if flag:
                    print(f"Actual value={x[i]}, \t Proposed value={x_}")
                    print(f"Hasting ratio={f(x_, v, mu, sigma) / f(x[i], v, mu, sigma)}")
                    print(f"Uniform random number={u}")
                    print(f"Next value={x[i+1]}\n")
            return x, round(accepted/n*100, 2)
```

```
In [6]: def plot_MCMC_values():
            print(f"Student-t: Mean={mean_}, Std={np.sqrt(var_)}")
            fig, ax = plt.subplots(3, 4,# sharex=True, sharey=True,
                                   gridspec_kw={'hspace': 0.12, 'wspace': 0.12},
                                   figsize=(25, 15))
            fig.suptitle("MCMC Student-t distribution", fontsize=25)

            for i in range(len(ns)):
                for j in range(len(alphas)):
                    X = MCMC(ns[i], alphas[j])
                    ax[i, j].axhline(y=mean_, color='red', label=f'mean={round(np.mean(X[0]), 4)},
                    ax[i, j].axhspan(float(mean_)-np.sqrt(var_), float(mean_)+np.sqrt(var_), facec
                    ax[i, j].plot(X[0], label=f"alpha={alphas[j]}, n={ns[i]}, accept={X[1]}%", col
                    ax[i, j].grid()
                    ax[i, j].legend(loc=1)
            plt.show()

        plot_MCMC_values()
```
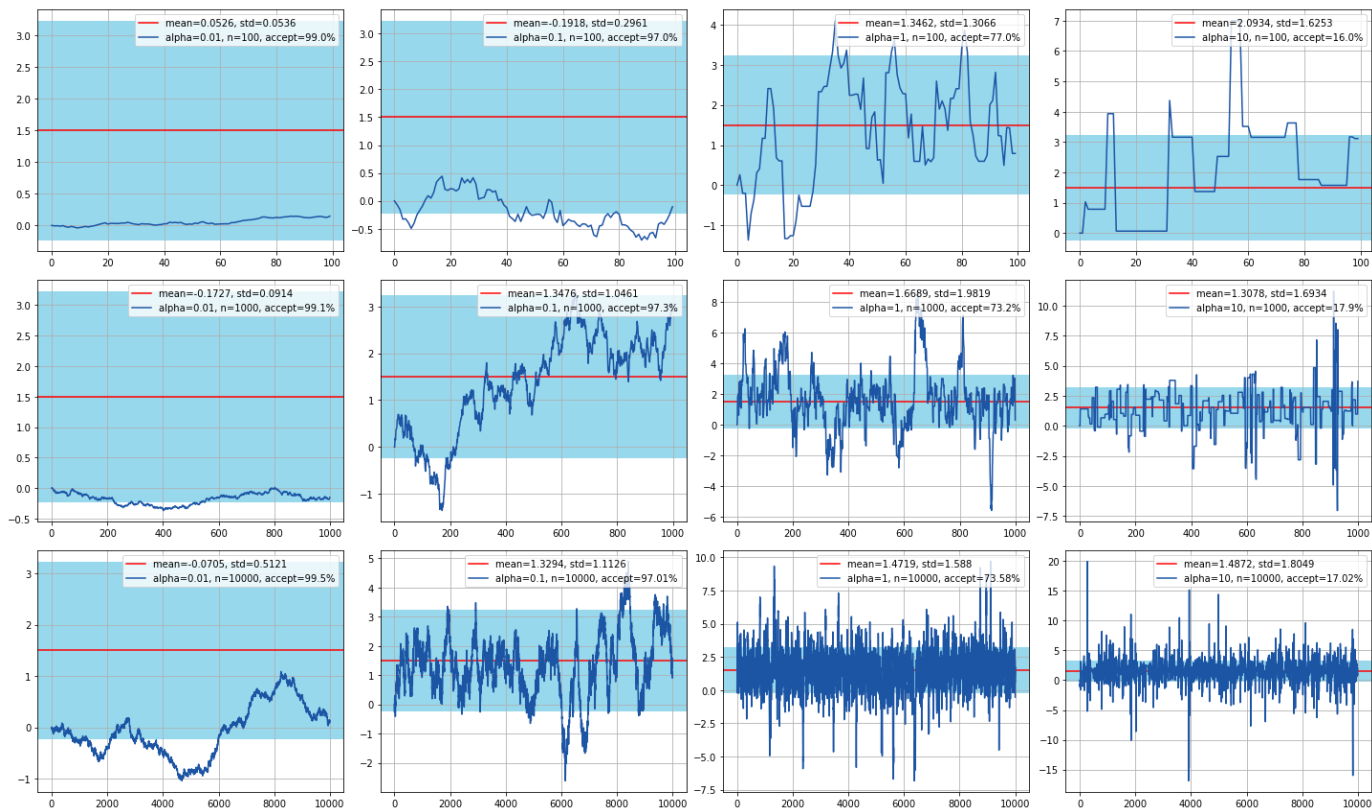
Student-t: Mean=1.5, Std=1.7320508075688772

MCMC Student-t distribution

Answer: Above I show the resulting values for values of $n \in [100, 1000, 10000]$ and for values of $\alpha \in [0.01, 0.1, 1, 10]$. It can be see from the plots that the bigger the value of α is the better result we obtain. That is because as the value of α increase the mean and standard deviation of the resulting sequences better fits with the real ones.
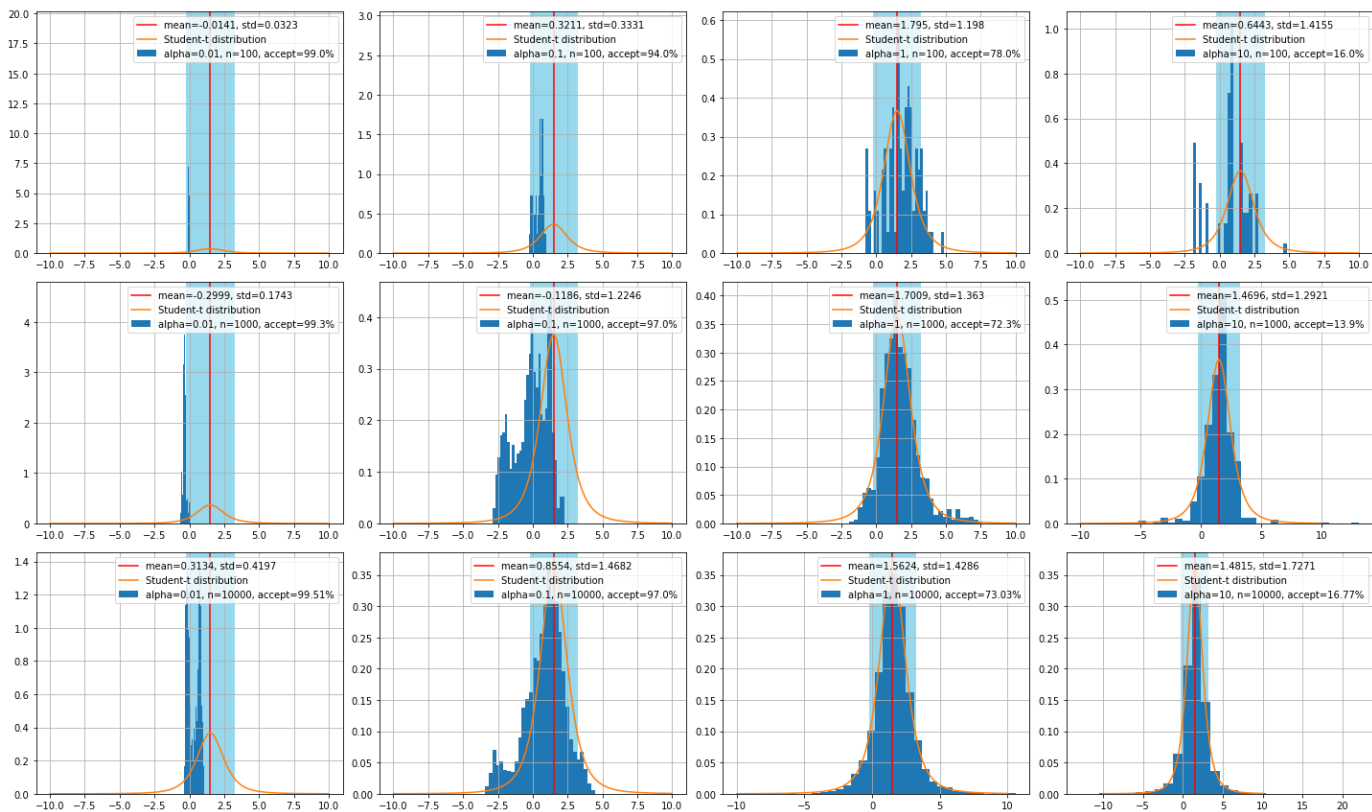
- (15 Points) Using the same previous 4 sets of jumps sizes, run your code for $N = 1000$ iterations and use the output to produce histograms of the $\{x_i\}$. Plot them against the target distribution $T(x|\nu, \sigma, \mu)$. Which distribution looks the best?

```
In [7]: def plot_hist_MCMC():
            fig, ax = plt.subplots(3, 4,# sharex=True, sharey=True,
                                    gridspec_kw={'hspace': 0.12, 'wspace': 0.12},
                                    figsize=(25, 15))
            fig.suptitle("MCMC Student-t distribution", fontsize=25)

            for i in range(len(ns)):
                for j in range(len(alphas)):
                    X = MCMC(ns[i], alphas[j])
                    ax[i, j].axvline(x=mean_, color='red', label=f'mean={round(np.mean(X[0]), 4)}',
                    ax[i, j].axvspan(float(mean_)-np.sqrt(var_), float(mean_)+np.sqrt(var_), faceco
                    ax[i, j].hist(X[0], density=True, bins=30, label=f"alpha={alphas[j]}, n={ns[i]]
                    xs = np.linspace(-10, 10, 100)
                    ax[i, j].plot(xs, f(xs, v, mu, sigma), label="Student-t distribution")
                    ax[i, j].grid()
                    ax[i, j].legend(loc=1)
            fig.show()
        plot_hist_MCMC()
```

MCMC Student-t distribution

Answer: As I said in the previous question it seems that the performance of the method is better for bigger values of α. Now, if you take a look a the resulting distributions you can check it taking the error between the real mean and standard deviation with the real ones.

- (5 Points) Have your code compute the acceptance fraction for the proposed jumps (i.e., the fraction of the

proposed jumps that are accepted). Does a high acceptance rate necessarily mean efficient exploration of the distribution

```
In [8]: def Show_step_by_step_of_MCMC():
            for i in range(len(ns)):
                for j in range(len(alphas)):
                    X = MCMC(ns[i], alphas[j], flag=True)
        Show_step_by_step_of_MCMC()
```

Se truncaron las últimas líneas 5000 del resultado de transmisión.
Hasting ratio=0.0015858804687531283
Uniform random number=0.4653190446237313
Next value=0.4642003365196423

Actual value=0.4642003365196423,   Proposed value=0.6725408972970416
Hasting ratio=1.2218048836219175
Uniform random number=0.9356843584215476
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=16.542673920324344
Hasting ratio=0.0002582625913271395
Uniform random number=0.9328815137993056
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=-2.6872715478801794
Hasting ratio=0.03220226942071958
Uniform random number=0.9903952733508555
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=-7.903865731213502
Hasting ratio=0.0016240469218637673
Uniform random number=0.6302861262761434
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=-6.4817567720513
Hasting ratio=0.0030509844139049586
Uniform random number=0.3744041908770128
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=-31.231619968280988
Hasting ratio=1.1762584729029783e-05
Uniform random number=0.6030760610746112
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=5.217732645081492
Hasting ratio=0.047981108121936754
Uniform random number=0.15964671793777185
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=4.720638208279926
Hasting ratio=0.07592340559537175
Uniform random number=0.5347505250430469
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=-3.210043485790704
Hasting ratio=0.02140595337217125
Uniform random number=0.13915158020732388
Next value=0.6725408972970416

Actual value=0.6725408972970416,   Proposed value=4.789168746445626
Hasting ratio=0.0711003159939967
Uniform random number=0.2510252623826057
```

```
Next value=0.6725408972970416

Actual value=0.6725408972970416,          Proposed value=1.4853497491271352
Hasting ratio=1.5083319294831605
Uniform random number=0.06620321590862865
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-7.109529000097641
Hasting ratio=0.0015133022371226392
Uniform random number=0.6637506692228722
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=15.713790350451795
Hasting ratio=0.00021412237261378083
Uniform random number=0.10767053853972897
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=11.882228994986434
Hasting ratio=0.0007333278886076071
Uniform random number=0.7546743610521179
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-17.981449920164206
Hasting ratio=6.151495454984193e-05
Uniform random number=0.13730914768532476
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-0.38956792341234014
Hasting ratio=0.20850293869631242
Uniform random number=0.5487832296719924
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=7.281380526095493
Hasting ratio=0.006784545678621324
Uniform random number=0.12773986592207487
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=9.97301899074499
Hasting ratio=0.0016091397574967815
Uniform random number=0.4440400185483865
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=7.498972214988514
Hasting ratio=0.005921750954069062
Uniform random number=0.40785527658475873
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=4.01980212248797
Hasting ratio=0.1029762122107151
Uniform random number=0.3455951247774476
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=8.994490405869426
Hasting ratio=0.0025712237860991676
Uniform random number=0.12385630673005754
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=5.370752870657569
Hasting ratio=0.02783514631841376
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Uniform random number=0.9671476454231831
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-2.5423251868138608
Hasting ratio=0.02406434599217444
Uniform random number=0.4568007491245307
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=9.0337603976407
Hasting ratio=0.0025206882905148644
Uniform random number=0.49017530908291407
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=4.4152679794032785
Hasting ratio=0.06807702376247972
Uniform random number=0.5564785938737128
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-14.02072410878962
Hasting ratio=0.00015132351334562117
Uniform random number=0.6795380038362242
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-3.3678213884699644
Hasting ratio=0.012630557152396648
Uniform random number=0.6171878313430025
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=6.031650044159429
Hasting ratio=0.0162496793478004
Uniform random number=0.8273220823559269
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-7.401391509074237
Hasting ratio=0.001331047874664937
Uniform random number=0.6169597331195104
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=0.2651220613431726
Hasting ratio=0.4396247778906797
Uniform random number=0.5396524924792712
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-15.67281390775987
Hasting ratio=0.0001014255792994769
Uniform random number=0.8802476009209328
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-2.2450765944775726
Hasting ratio=0.03105273546018395
Uniform random number=0.9488574719140488
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-4.973259740225679
Hasting ratio=0.004464287556014983
Uniform random number=0.9150309756529228
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-4.482289332909984
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```
Hasting ratio=0.005982940375157644
Uniform random number=0.5912435028760804
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=6.222804080476873
Hasting ratio=0.014057113134497106
Uniform random number=0.7172299989442739
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=10.08843621234854
Hasting ratio=0.0015276389545422029
Uniform random number=0.43326519782739537
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-6.6000689614769446
Hasting ratio=0.0019121223028489588
Uniform random number=0.6260762027471387
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=4.161472496301126
Hasting ratio=0.08852940995217573
Uniform random number=0.999576850334948
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=12.446135272405433
Hasting ratio=0.0005967349492003177
Uniform random number=0.17308677202381173
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=6.539544577149352
Hasting ratio=0.011162447622725107
Uniform random number=0.8271627501978174
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=14.272047072286185
Hasting ratio=0.00032616224394890525
Uniform random number=0.12956500672863736
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=3.9632034249163124
Hasting ratio=0.10948178430818933
Uniform random number=0.3045471571414604
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=9.069151471140918
Hasting ratio=0.0024761929919041668
Uniform random number=0.7662623497156764
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=15.10409492214314
Hasting ratio=0.0002544832135253661
Uniform random number=0.7000674809711517
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=-5.9071960443290745
Hasting ratio=0.0026881247484068704
Uniform random number=0.8447395888318343
Next value=1.4853497491271352
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Actual value=1.4853497491271352,          Proposed value=6.589328481728499
Hasting ratio=0.010776332002435383
Uniform random number=0.4371158847781995
Next value=1.4853497491271352

Actual value=1.4853497491271352,          Proposed value=2.4109904655093675
Hasting ratio=0.6136616126052091
Uniform random number=0.3517557493996951
Next value=2.4109904655093675

Actual value=2.4109904655093675,          Proposed value=14.933253661510879
Hasting ratio=0.0004358422734473249
Uniform random number=0.5962794612549404
Next value=2.4109904655093675

Actual value=2.4109904655093675,          Proposed value=-15.15014432932286
Hasting ratio=0.0001867905014541891
Uniform random number=0.7062590854254278
Next value=2.4109904655093675

Actual value=2.4109904655093675,          Proposed value=-0.19515470189305928
Hasting ratio=0.4251815697703188
Uniform random number=0.3923653210597392
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-16.63185674019553
Hasting ratio=0.00031343114116913597
Uniform random number=0.6270780020469299
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-6.211018952060018
Hasting ratio=0.008843005553100369
Uniform random number=0.9175638834865687
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=12.702420540142631
Hasting ratio=0.0020894598760508466
Uniform random number=0.08560647269399402
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-14.702684614176036
Hasting ratio=0.0004893098072660193
Uniform random number=0.9406667172579589
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-8.737487387809376
Hasting ratio=0.0029683438211360997
Uniform random number=0.37103513682549794
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-8.973649644736373
Hasting ratio=0.0027162763601548904
Uniform random number=0.17537462354418876
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=-4.658604122576859
Hasting ratio=0.020594517705752928
Uniform random number=0.7263336935569275
Next value=-0.19515470189305928
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Actual value=-0.19515470189305928,        Proposed value=8.57572748569644
Hasting ratio=0.01225095300681147
Uniform random number=0.7952601660609382
Next value=-0.19515470189305928

Actual value=-0.19515470189305928,        Proposed value=0.24239386692180137
Hasting ratio=1.6435086878890839
Uniform random number=0.594560764041136
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-3.135929854921032
Hasting ratio=0.034993407179167456
Uniform random number=0.655312309782369
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-14.32962985101511
Hasting ratio=0.00032644417004491425
Uniform random number=0.901453436037483
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=10.50978525249915
Hasting ratio=0.0029624451048941283
Uniform random number=0.5378691500528359
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-2.3340680917951055
Hasting ratio=0.06700063053848801
Uniform random number=0.7802372527110393
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-3.4162343720721298
Hasting ratio=0.02843612582697433
Uniform random number=0.20581890191811447
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=12.817028319647235
Hasting ratio=0.0012217677650444853
Uniform random number=0.7794810249507054
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-2.636675648187875
Hasting ratio=0.051893749017824
Uniform random number=0.7955424372396601
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-11.245506489843553
Hasting ratio=0.0007668431653421913
Uniform random number=0.15667040902545104
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-0.4294931877798856
Hasting ratio=0.4644193156990459
Uniform random number=0.6949376840509476
Next value=0.24239386692180137

Actual value=0.24239386692180137,          Proposed value=-5.866953950223673
Hasting ratio=0.0063994757632515435
Uniform random number=0.7831830393417415
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Next value=0.24239386692180137

Actual value=0.24239386692180137,   Proposed value=11.408365282542485
Hasting ratio=0.0020505803862158334
Uniform random number=0.6433940968983187
Next value=0.24239386692180137

Actual value=0.24239386692180137,   Proposed value=-11.642313244514831
Hasting ratio=0.0006798058587147771
Uniform random number=0.46774307508108237
Next value=0.24239386692180137

Actual value=0.24239386692180137,   Proposed value=1.9480900082169526
Hasting ratio=2.048879154860947
Uniform random number=0.42309566319857195
Next value=1.9480900082169526

Actual value=1.9480900082169526,   Proposed value=-1.992931333600803
Hasting ratio=0.044339746446590875
Uniform random number=0.281623758260263
Next value=1.9480900082169526

Actual value=1.9480900082169526,   Proposed value=1.6100718792720468
Hasting ratio=1.129196644679299
Uniform random number=0.47820565468458487
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=22.29045990322703
Hasting ratio=4.789380024707156e-05
Uniform random number=0.14273788201937576
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=-3.9570998246327225
Hasting ratio=0.008443588602144652
Uniform random number=0.8242930460596883
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=13.860221611398037
Hasting ratio=0.00037389303700987263
Uniform random number=0.7415125431869407
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=-11.89622942506684
Hasting ratio=0.0002725291302287984
Uniform random number=0.5461965439027571
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=3.269314370349929
Hasting ratio=0.24141003406409878
Uniform random number=0.706869518125131
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=10.301598665993238
Hasting ratio=0.0014011848018049271
Uniform random number=0.6635407113599183
Next value=1.6100718792720468

Actual value=1.6100718792720468,   Proposed value=-1.3140208980644887
Hasting ratio=0.07610275580108142

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Uniform random number=0.14686497040264868
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=8.820328050019876
Hasting ratio=0.002833393421442116
Uniform random number=0.6860110058791392
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=4.625932477053854
Hasting ratio=0.05562405642154949
Uniform random number=0.9575107855821392
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=12.110308774547015
Hasting ratio=0.0006791849934463863
Uniform random number=0.9427001185541998
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-15.110238758859547
Hasting ratio=0.00011663964971027791
Uniform random number=0.39197737233103813
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-3.4457143830479877
Hasting ratio=0.012032043604541676
Uniform random number=0.9482871738094467
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=7.375211033421871
Hasting ratio=0.00644557330511106
Uniform random number=0.8038866316977323
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=11.294546828370597
Hasting ratio=0.0009269571973133947
Uniform random number=0.536388328952334
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=10.793297591889123
Hasting ratio=0.0011360690268309812
Uniform random number=0.3468118123184294
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-12.224067655464081
Hasting ratio=0.0002477914121856479
Uniform random number=0.31520294172562313
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-0.2353403914453187
Hasting ratio=0.25106789026821585
Uniform random number=0.42297170582517707
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=4.487862066232969
Hasting ratio=0.0637604908853263
Uniform random number=0.39755318374093174
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=6.983104987351907
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Hasting ratio=0.008298908619960632
Uniform random number=0.24252888741618217
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=26.49009011485429
Hasting ratio=2.3041433810469628e-05
Uniform random number=0.7993989028784947
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=11.977965475491004
Hasting ratio=0.0007132132236466076
Uniform random number=0.3005081934009133
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-11.22582536713103
Hasting ratio=0.0003334697416736512
Uniform random number=0.9379820160733888
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=3.425770339184689
Hasting ratio=0.20159541551830873
Uniform random number=0.3130483940951603
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=7.540757198450438
Hasting ratio=0.005817717441818324
Uniform random number=0.5237016611193659
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-2.945473888539352
Hasting ratio=0.01751109927690325
Uniform random number=0.7516805594677656
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=11.362919555466267
Hasting ratio=0.0009022753457514316
Uniform random number=0.19277780424560298
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-11.653577109958068
Hasting ratio=0.00029284386068144955
Uniform random number=0.22990312947115887
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=-12.630325715392312
Hasting ratio=0.00022089256212197623
Uniform random number=0.12511400959578667
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=3.5466812816354523
Hasting ratio=0.175556911972968
Uniform random number=0.6069082738906669
Next value=1.6100718792720468

Actual value=1.6100718792720468,          Proposed value=24.276598731404
Hasting ratio=3.3325707706181964e-05
Uniform random number=0.6325311962642501
Next value=1.6100718792720468
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Actual value=1.6100718792720468,        Proposed value=-12.788376953148964
Hasting ratio=0.00021141758408290467
Uniform random number=0.26804872175176464
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=10.067917975220256
Hasting ratio=0.0015540028784327216
Uniform random number=0.9243927628171396
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=3.2611452078194265
Hasting ratio=0.24369759799673227
Uniform random number=0.3660363672910595
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=-3.6427052311582937
Hasting ratio=0.010462823959397712
Uniform random number=0.5195962773490274
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=-6.295185538770607
Hasting ratio=0.0022314118153551367
Uniform random number=0.3640031510857431
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=3.5465896130395356
Hasting ratio=0.17557523977132605
Uniform random number=0.5061867542237138
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=6.42902444706237
Hasting ratio=0.01217778108428493
Uniform random number=0.7991305753569199
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=-18.53568461552942
Hasting ratio=5.547016900539671e-05
Uniform random number=0.5586983010044325
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=-6.260995687284558
Hasting ratio=0.002269107219605499
Uniform random number=0.2760385959648738
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=6.550920861299483
Hasting ratio=0.011160766309180446
Uniform random number=0.2133525644450368
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=-3.4464892740521833
Hasting ratio=0.01202532901801511
Uniform random number=0.2849543848031164
Next value=1.6100718792720468

Actual value=1.6100718792720468,        Proposed value=16.294393722607555
Hasting ratio=0.00018430205280581266
Uniform random number=0.4955496874798998
Next value=1.6100718792720468
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Actual value=1.6100718792720468,        Proposed  value=14.26089373079935
Hasting ratio=0.00032988503492212447
Uniform random number=0.11913257044153103
Next value=1.6100718792720468


Actual value=1.6100718792720468,        Proposed  value=7.1957920769107115
Hasting ratio=0.007222802339061857
Uniform random number=0.4558819774526214
Next value=1.6100718792720468


Actual value=1.6100718792720468,        Proposed  value=8.163560883696366
Hasting ratio=0.004037670532480349
Uniform random number=0.12812249393618658
Next value=1.6100718792720468


Actual value=1.6100718792720468,        Proposed  value=3.6775564275480104
Hasting ratio=0.15137871848025264
Uniform random number=0.06185012390857336
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=-1.8059029538251368
Hasting ratio=0.308914991967684
Uniform random number=0.7723214056887947
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=-16.055430688731136
Hasting ratio=0.0006188971193697919
Uniform random number=0.6393192399565804
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=11.553801550773237
Hasting ratio=0.005532901114514591
Uniform random number=0.21923497590335583
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=-2.1364243785198216
Hasting ratio=0.22771151829572706
Uniform random number=0.3354695582681655
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=8.77909005437295
Hasting ratio=0.01912197674907352
Uniform random number=0.09297944230172939
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=-5.13183835304927
Hasting ratio=0.027153687818370017
Uniform random number=0.19431788232719105
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=12.284556246583646
Hasting ratio=0.004210650372458949
Uniform random number=0.3016556625337813
Next value=3.6775564275480104


Actual value=3.6775564275480104,        Proposed  value=-30.66037620094434
Hasting ratio=5.570296296421493e-05
Uniform random number=0.3752443882028379
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Next value=3.6775564275480104

Actual value=3.6775564275480104,          Proposed value=5.772178424169612
Hasting ratio=0.1327085743566916
Uniform random number=0.6607107516228432
Next value=3.6775564275480104

Actual value=3.6775564275480104,          Proposed value=-0.7219331518316592
Hasting ratio=0.9514088326492351
Uniform random number=0.050828543526559966
Next value=-0.7219331518316592

Actual value=-0.7219331518316592,          Proposed value=4.2847590840968435
Hasting ratio=0.5446279652371652
Uniform random number=0.3272490742078874
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=-11.559225871974018
Hasting ratio=0.0038405664849644598
Uniform random number=0.4710775585544108
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=-15.438226917015275
Hasting ratio=0.0013762723429863513
Uniform random number=0.03399974236912018
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=27.565907755406357
Hasting ratio=0.00024836660622263419
Uniform random number=0.42652567094999605
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=-8.805383271762654
Hasting ratio=0.009699710304307196
Uniform random number=0.2307254628509693
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=-7.915375957602552
Hasting ratio=0.013770605808054767
Uniform random number=0.9216783613147165
Next value=4.2847590840968435

Actual value=4.2847590840968435,          Proposed value=2.494988894726549
Hasting ratio=7.265491016675309
Uniform random number=0.06661711651259883
Next value=2.494988894726549

Actual value=2.494988894726549,          Proposed value=5.339274164952103
Hasting ratio=0.05058688216488086
Uniform random number=0.6298674122152966
Next value=2.494988894726549

Actual value=2.494988894726549,          Proposed value=-13.280416750346681
Hasting ratio=0.0003246033596273445
Uniform random number=0.826965012122796
Next value=2.494988894726549

Actual value=2.494988894726549,          Proposed value=4.6439068467816425
Hasting ratio=0.09590358910513809
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Uniform random number=0.06684379070131452
Next value=4.6439068467816425

Actual value=4.6439068467816425,          Proposed value=1.9142502128938652
Hasting ratio=16.502656381874036
Uniform random number=0.10317382263527652
Next value=1.9142502128938652

Actual value=1.9142502128938652,          Proposed value=1.9929796362955023
Hasting ratio=0.956436324415093
Uniform random number=0.6308443931651585
Next value=1.9929796362955023

Actual value=1.9929796362955023,          Proposed value=-6.879440646199613
Hasting ratio=0.001962009957344589
Uniform random number=0.1981523706682773
Next value=1.9929796362955023

Actual value=1.9929796362955023,          Proposed value=-11.67788623933751
Hasting ratio=0.0003370089905132537
Uniform random number=0.9183602438505614
Next value=1.9929796362955023

Actual value=1.9929796362955023,          Proposed value=2.1944724767314425
Hasting ratio=0.8673038377461059
Uniform random number=0.07725688091765592
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=5.152607053636155
Hasting ratio=0.045409268281819896
Uniform random number=0.7634265995523444
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=3.203525700912113
Hasting ratio=0.34812241893680923
Uniform random number=0.9502704333592488
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=-18.33136387657986
Hasting ratio=7.721817020457093e-05
Uniform random number=0.7058977655673729
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=-0.8685389688018832
Hasting ratio=0.1635785703851862
Uniform random number=0.8678001633537359
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=4.875272310122192
Hasting ratio=0.05854099801420627
Uniform random number=0.4090930008965863
Next value=2.1944724767314425

Actual value=2.1944724767314425,          Proposed value=1.5452776114455413
Hasting ratio=1.3455335000839446
Uniform random number=0.9873995560090243
Next value=1.5452776114455413

Actual value=1.5452776114455413,          Proposed value=1.148175059636359
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Hasting ratio=0.9235805134257745
Uniform random number=0.16462866758666317
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=7.010444734630262
Hasting ratio=0.008765542714269197
Uniform random number=0.7041702511836472
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=8.033128706593855
Hasting ratio=0.004676007944109995
Uniform random number=0.0097767776272035215
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=-4.731941386594566
Hasting ratio=0.005574912932739999
Uniform random number=0.6186683485290544
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=12.066110845288431
Hasting ratio=0.000742451860601595
Uniform random number=0.861487009934386
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=-10.034747900193805
Hasting ratio=0.0005271829975034976
Uniform random number=0.6323368570825442
Next value=1.148175059636359

Actual value=1.148175059636359,         Proposed value=2.132537204098931
Hasting ratio=0.8440669045522836
Uniform random number=0.4707863462301656
Next value=2.132537204098931

Actual value=2.132537204098931,         Proposed value=2.462742396659488
Hasting ratio=0.749705216357481
Uniform random number=0.5261843352252492
Next value=2.462742396659488

Actual value=2.462742396659488,         Proposed value=5.959140072490637
Hasting ratio=0.029446417560524178
Uniform random number=0.6031636363098097
Next value=2.462742396659488

Actual value=2.462742396659488,         Proposed value=4.259941719763434
Hasting ratio=0.1367940766733571
Uniform random number=0.730968885939487
Next value=2.462742396659488

Actual value=2.462742396659488,         Proposed value=-6.364251671613825
Hasting ratio=0.003667087094684744
Uniform random number=0.43192773733152445
Next value=2.462742396659488

Actual value=2.462742396659488,         Proposed value=-10.305618397099218
Hasting ratio=0.0007607478001661435
Uniform random number=0.4130680526907382
Next value=2.462742396659488
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Actual value=2.462742396659488,          Proposed value=8.839521139695
Hasting ratio=0.004768140790731892
Uniform random number=0.7454367622084916
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=7.735968827144361
Hasting ratio=0.008788784394814413
Uniform random number=0.2214482617157234
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=-14.520143729458956
Hasting ratio=0.00022873559326838135
Uniform random number=0.6154040708393144
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=7.062938775605322
Hasting ratio=0.01338163304108402
Uniform random number=0.08589101519401254
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=-2.434163026362466
Hasting ratio=0.04516486868065786
Uniform random number=0.6108685369946786
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=5.198285166154323
Hasting ratio=0.055442336745663894
Uniform random number=0.6387601274222442
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=12.150371295739676
Hasting ratio=0.0011375247386833133
Uniform random number=0.9795038604107555
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=4.931589133534551
Hasting ratio=0.07063036530899196
Uniform random number=0.9750509241793256
Next value=2.462742396659488

Actual value=2.462742396659488,          Proposed value=0.05018813205157535
Hasting ratio=0.5924074892756663
Uniform random number=0.12241378436704509
Next value=0.05018813205157535

Actual value=0.05018813205157535,        Proposed value=10.799902537566995
Hasting ratio=0.0032504368523535265
Uniform random number=0.6524876209469089
Next value=0.05018813205157535

Actual value=0.05018813205157535,        Proposed value=-16.56884363552539
Hasting ratio=0.00023977662344109522
Uniform random number=0.7517742513223286
Next value=0.05018813205157535

Actual value=0.05018813205157535,        Proposed value=-11.118330958647565
Hasting ratio=0.0009891272637342497
Uniform random number=0.031183094428270275
Next value=0.05018813205157535
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Actual value=0.05018813205157535,        Proposed value=2.019477010698227
Hasting ratio=2.43453376776191
Uniform random number=0.20360251046676248
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=-3.7713117303315253
Hasting ratio=0.011280550658754754
Uniform random number=0.7665419929709888
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=7.756259697637367
Hasting ratio=0.006602077087919392
Uniform random number=0.11328190748638689
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=23.88747722602442
Hasting ratio=4.2058439634479174e-05
Uniform random number=0.004015300094923235
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=-8.52676820811144
Hasting ratio=0.000997410439719465
Uniform random number=0.7937407724195393
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=5.770237905438885
Hasting ratio=0.023711313455997435
Uniform random number=0.7175049449443701
Next value=2.019477010698227

Actual value=2.019477010698227,          Proposed value=2.3012647368635166
Hasting ratio=0.8060675977541695
Uniform random number=0.7840487166063663
Next value=2.3012647368635166

Actual value=2.3012647368635166,         Proposed value=13.35523904497784
Hasting ratio=0.0006437237096890018
Uniform random number=0.4481210850489702
Next value=2.3012647368635166

Actual value=2.3012647368635166,         Proposed value=-14.791636195554933
Hasting ratio=0.00018410455135015578
Uniform random number=0.7066101896349583
Next value=2.3012647368635166

Actual value=2.3012647368635166,         Proposed value=14.85837443494803
Hasting ratio=0.00040289352576254513
Uniform random number=0.2949409677477962
Next value=2.3012647368635166

Actual value=2.3012647368635166,         Proposed value=2.8575703582743235
Hasting ratio=0.565532330642927
Uniform random number=0.8601074640234501
Next value=2.3012647368635166

Actual value=2.3012647368635166,         Proposed value=21.630742403032563
Hasting ratio=7.958666954477067e-05
Uniform random number=0.8895730816713266
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Next value=2.3012647368635166

Actual value=2.3012647368635166,        Proposed value=-1.6216970830008197
Hasting ratio=0.08165949826299143
Uniform random number=0.33831667037637536
Next value=2.3012647368635166

Actual value=2.3012647368635166,        Proposed value=-17.621367898092224
Hasting ratio=9.761403982373728e-05
Uniform random number=0.531200700238099
Next value=2.3012647368635166

Actual value=2.3012647368635166,        Proposed value=-1.2930860363892491
Hasting ratio=0.11369240406950212
Uniform random number=0.8352361419128652
Next value=2.3012647368635166

Actual value=2.3012647368635166,        Proposed value=8.252262256622153
Hasting ratio=0.005617429736366674
Uniform random number=0.02971304289193033
Next value=2.3012647368635166

Actual value=2.3012647368635166,        Proposed value=2.414936081391786
Hasting ratio=0.9009025871356628
Uniform random number=0.7884429251782576
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=-6.274775769566785
Hasting ratio=0.0036574969864644254
Uniform random number=0.2601164416075852
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=-10.768654860558945
Hasting ratio=0.0006247104068662257
Uniform random number=0.42540530305466795
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=-3.62638968279841
Hasting ratio=0.017173931659405752
Uniform random number=0.2569110943952636
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=-5.169634103196174
Hasting ratio=0.0065299989617702515
Uniform random number=0.7604154600549377
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=4.1534141957712265
Hasting ratio=0.1460454817103154
Uniform random number=0.5372391338850959
Next value=2.414936081391786

Actual value=2.414936081391786,         Proposed value=1.7333285446169464
Hasting ratio=1.5781352783992106
Uniform random number=0.20452713530436772
Next value=1.7333285446169464

Actual value=1.7333285446169464,        Proposed value=-10.468565201998484
Hasting ratio=0.0004362069170938577
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Uniform random number=0.5030644076399531
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-4.802325499565997
Hasting ratio=0.005112289434525087
Uniform random number=0.6344569911164277
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=13.851464753093733
Hasting ratio=0.00038554521561113024
Uniform random number=0.261373341330979
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=11.522522277121638
Hasting ratio=0.0008717557798395667
Uniform random number=0.20812824185349355
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=4.269438426339533
Hasting ratio=0.0819506017729735
Uniform random number=0.6262654971362157
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-5.934912726193335
Hasting ratio=0.0027469808474073778
Uniform random number=0.7447377747353133
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=13.933281892829665
Hasting ratio=0.000375686693517112
Uniform random number=0.9665838220120714
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=4.996762706759688
Hasting ratio=0.04023603690392649
Uniform random number=0.6377355616005694
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=5.048714305821591
Hasting ratio=0.03836928247867476
Uniform random number=0.6528025029934257
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=6.690320477283344
Hasting ratio=0.010408229666050728
Uniform random number=0.912289105796432
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-9.16114446756465
Hasting ratio=0.0006855195914955237
Uniform random number=0.741317521309172
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=8.729453604017428
Hasting ratio=0.003054664275530542
Uniform random number=0.9175509118446386
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-4.382198735990093
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Hasting ratio=0.006599060102046264
Uniform random number=0.18637258066856277
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-1.7563500148715034
Hasting ratio=0.05041297929092349
Uniform random number=0.7659050104517543
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-1.8245739045176799
Hasting ratio=0.04724312430087646
Uniform random number=0.4981989633043611
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=9.769848588165157
Hasting ratio=0.001830561176435284
Uniform random number=0.1458026927939614
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=3.864136838390705
Hasting ratio=0.1264631978679952
Uniform random number=0.49896408043203133
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=5.450504861500806
Hasting ratio=0.026948523795746894
Uniform random number=0.06726585898086457
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=3.733241590836827
Hasting ratio=0.146236719793493
Uniform random number=0.4316732723255682
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-0.783049879209746
Hasting ratio=0.13833511695731263
Uniform random number=0.7473234999193729
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-13.459648763619061
Hasting ratio=0.00018138937498839053
Uniform random number=0.35053661292283556
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=0.08632971492891395
Hasting ratio=0.3734141274489907
Uniform random number=0.8140393164114114
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=4.747024060172949
Hasting ratio=0.050865517839333636
Uniform random number=0.3765864545873545
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=15.616701244982497
Hasting ratio=0.00022800929438190505
Uniform random number=0.47379698305616225
Next value=1.7333285446169464
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Actual value=1.7333285446169464,          Proposed value=5.384330733886751
Hasting ratio=0.02851553434539761
Uniform random number=0.8198291167816151
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=2.835549040901884
Hasting ratio=0.4076970264301401
Uniform random number=0.818636598315874
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=4.116798113108288
Hasting ratio=0.09620555987385435
Uniform random number=0.49793891923031175
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-5.255173243740152
Hasting ratio=0.003944691421721079
Uniform random number=0.6717139123676891
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=10.498480637742276
Hasting ratio=0.0013230859830922351
Uniform random number=0.22998701779590136
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=6.77440199452044
Hasting ratio=0.009822404668054662
Uniform random number=0.8594377283935408
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=3.8684146869965668
Hasting ratio=0.12586913596301566
Uniform random number=0.7746542017405773
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-13.320689017172924
Hasting ratio=0.0001881947109367476
Uniform random number=0.9244482050140271
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-2.5032743296300675
Hasting ratio=0.02577267311061104
Uniform random number=0.4458118112101427
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=-9.438807991492212
Hasting ratio=0.0006201196088339313
Uniform random number=0.005018689515172148
Next value=1.7333285446169464

Actual value=1.7333285446169464,          Proposed value=2.7885561039336406
Hasting ratio=0.42955794489977545
Uniform random number=0.3011123852918868
Next value=2.7885561039336406

Actual value=2.7885561039336406,          Proposed value=4.2224512193563
Hasting ratio=0.20035278648417418
Uniform random number=0.6314513430006656
Next value=2.7885561039336406
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Actual value=2.7885561039336406,        Proposed value=-7.437980402200241
Hasting ratio=0.0031612287350866978
Uniform random number=0.9038906050514972
Next value=2.7885561039336406

Actual value=2.7885561039336406,        Proposed value=24.903234652756005
Hasting ratio=7.161334311206947e-05
Uniform random number=0.6085524836459868
Next value=2.7885561039336406

Actual value=2.7885561039336406,        Proposed value=14.67370070523907
Hasting ratio=0.000696826061214546
Uniform random number=0.8323984898492436
Next value=2.7885561039336406

Actual value=2.7885561039336406,        Proposed value=3.452911028408286
Hasting ratio=0.4677948839036315
Uniform random number=0.750386939811849
Next value=2.7885561039336406

Actual value=2.7885561039336406,        Proposed value=0.4524107117692049
Hasting ratio=1.293648116959774
Uniform random number=0.7797123686749139
Next value=0.4524107117692049

Actual value=0.4524107117692049,        Proposed value=11.295496155958666
Hasting ratio=0.001714663860875857
Uniform random number=0.75754124964099
Next value=0.4524107117692049

Actual value=0.4524107117692049,        Proposed value=10.502109698901815
Hasting ratio=0.0023772491951851594
Uniform random number=0.3209312328170042
Next value=0.4524107117692049

Actual value=0.4524107117692049,        Proposed value=0.27744994456246275
Hasting ratio=0.8310712898358004
Uniform random number=0.1718646673056664
Next value=0.27744994456246275

Actual value=0.27744994456246275,        Proposed value=-2.7549366471686696
Hasting ratio=0.045356347686457965
Uniform random number=0.45160277841239527
Next value=0.27744994456246275

Actual value=0.27744994456246275,        Proposed value=-2.140268973531167
Hasting ratio=0.07648875892504366
Uniform random number=0.7893355974759377
Next value=0.27744994456246275

Actual value=0.27744994456246275,        Proposed value=2.1364795556572846
Hasting ratio=1.7423134934569098
Uniform random number=0.7260473131269735
Next value=2.1364795556572846

Actual value=2.1364795556572846,        Proposed value=-4.184478461715429
Hasting ratio=0.009297899227647507
Uniform random number=0.5212212003338429
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Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=25.05265220670909
Hasting ratio=3.7274972070868944e-05
Uniform random number=0.6878748562651573
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=10.002026476081303
Hasting ratio=0.0020457413183900684
Uniform random number=0.9481622497098086
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=-0.7914084654279674
Hasting ratio=0.17033160472416137
Uniform random number=0.810814629779072
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=4.98150321200892
Hasting ratio=0.05071168945623144
Uniform random number=0.5971540692241264
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=-3.863079074394474
Hasting ratio=0.011492877276214425
Uniform random number=0.18138879517341333
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=3.156727656612446
Hasting ratio=0.35133351966949045
Uniform random number=0.9128614585935269
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=18.082405642873002
Hasting ratio=0.0001500535152397448
Uniform random number=0.9175352426723902
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=5.065852763400152
Hasting ratio=0.046947843637609836
Uniform random number=0.41809608106778284
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=-13.72767809925149
Hasting ratio=0.0002101653861076952
Uniform random number=0.015603715233145299
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=9.738439800001439
Hasting ratio=0.0023084118540944634
Uniform random number=0.21489726553486388
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=19.234059601997703
Hasting ratio=0.00011502240204361136
Uniform random number=0.22217947466173094
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=4.6993636505065055
Hasting ratio=0.06618393004929408
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Uniform random number=0.26568138990495127
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=-1.3139065780975452
Hasting ratio=0.09726790502276737
Uniform random number=0.7839198035848074
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=6.173765534965435
Hasting ratio=0.018785179168537374
Uniform random number=0.8562703706667035
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=17.101432606234543
Hasting ratio=0.00019096921220906115
Uniform random number=0.10886179568303589
Next value=2.1364795556572846

Actual value=2.1364795556572846,          Proposed value=2.1681293519538225
Hasting ratio=0.9761819309564969
Uniform random number=0.15446781465216752
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=16.084792327694778
Hasting ratio=0.00025524966096841084
Uniform random number=0.5999904189576376
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-0.7705811091289165
Hasting ratio=0.1785768969960087
Uniform random number=0.7315023755263692
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=22.584719353401987
Hasting ratio=5.929493172874979e-05
Uniform random number=0.5159000211074692
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-4.720625258463896
Hasting ratio=0.006831845806684857
Uniform random number=0.265050048338077
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-1.6455767723316979
Hasting ratio=0.07143502972879491
Uniform random number=0.26200550502861863
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=14.884346925927366
Hasting ratio=0.000358027477436309
Uniform random number=0.3548699135487333
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-10.92392839771668
Hasting ratio=0.0004797058419113936
Uniform random number=0.7382933190333186
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=10.939098779376273
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Hasting ratio=0.00140037227587222
Uniform random number=0.3775925052318536
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=5.614502480182452
Hasting ratio=0.02990569195704683
Uniform random number=0.9711789962357966
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-6.910188983001412
Hasting ratio=0.0021848771994861685
Uniform random number=0.14454714726521267
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-10.444203765342722
Hasting ratio=0.0005597912164016404
Uniform random number=0.2988211363703358
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-2.1733576722410475
Hasting ratio=0.04366183005164563
Uniform random number=0.6657925343330559
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=3.4560529283104096
Hasting ratio=0.254905844479333
Uniform random number=0.5071770644055335
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=-6.847308635830101
Hasting ratio=0.002248691459260176
Uniform random number=0.26075534300898096
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=12.586266107028457
Hasting ratio=0.000749277284411736
Uniform random number=0.646348523463675
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=4.377043984414568
Hasting ratio=0.09339292438984599
Uniform random number=0.7739269870989606
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=18.026768066902555
Hasting ratio=0.00015577243156502307
Uniform random number=0.7136614079975151
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=7.392547476069911
Hasting ratio=0.008347154991519253
Uniform random number=0.7587226756767218
Next value=2.1681293519538225

Actual value=2.1681293519538225,          Proposed value=20.92193878470705
Hasting ratio=8.216362589497691e-05
Uniform random number=0.8392592613305858
Next value=2.1681293519538225
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Actual value=2.1681293519538225,        Proposed value=7.998692943159396
Hasting ratio=0.005805232100350984
Uniform random number=0.7507219051262674
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-16.969296776835044
Hasting ratio=0.00010030522348495146
Uniform random number=0.23827711851908207
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-1.2975222817504068
Hasting ratio=0.10134072697444971
Uniform random number=0.41891726162910603
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-22.728969724957942
Hasting ratio=3.4116406309276754e-05
Uniform random number=0.8864036117046555
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=8.174790216938737
Hasting ratio=0.005252643547278885
Uniform random number=0.5659844818276808
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-1.2914133146348692
Hasting ratio=0.10198296480546494
Uniform random number=0.5198898723997458
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=11.905371579154314
Hasting ratio=0.0009593137464160959
Uniform random number=0.8818231174204715
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-3.2847226209265457
Hasting ratio=0.017715225401905958
Uniform random number=0.0479832476298403
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=6.525068646829567
Hasting ratio=0.01488172354336575
Uniform random number=0.8301618360428636
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-1.3174594988134083
Hasting ratio=0.09927697378993741
Uniform random number=0.5563865181327037
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-7.878026774862933
Hasting ratio=0.0014359857177769538
Uniform random number=0.10732388221946332
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=4.19579613517142
Hasting ratio=0.11267216500628331
Uniform random number=0.8360754073988632
Next value=2.1681293519538225
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Actual value=2.1681293519538225,        Proposed value=6.946716369721859
Hasting ratio=0.011130624338434723
Uniform random number=0.49707811062312524
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=8.022172952709267
Hasting ratio=0.005727545447343849
Uniform random number=0.9795799567915499
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-0.5257401955523808
Hasting ratio=0.23538062601057705
Uniform random number=0.26795405197128297
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-3.095497056003666
Hasting ratio=0.020418630958461574
Uniform random number=0.5850700476607962
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=-5.571290781257375
Hasting ratio=0.004227923775629584
Uniform random number=0.29112579366028857
Next value=2.1681293519538225

Actual value=2.1681293519538225,        Proposed value=9.291576297918716
Hasting ratio=0.002926399453229192
Uniform random number=0.0019576012339617144
Next value=9.291576297918716

Actual value=9.291576297918716,        Proposed value=21.241801637755852
Hasting ratio=0.026314158757123392
Uniform random number=0.7814460530527139
Next value=9.291576297918716

Actual value=9.291576297918716,        Proposed value=11.334559832352728
Hasting ratio=0.4081735879147476
Uniform random number=0.3561596111271903
Next value=11.334559832352728

Actual value=11.334559832352728,        Proposed value=7.20601344584443
Hasting ratio=7.864353178955328
Uniform random number=0.3667615594365099
Next value=7.20601344584443

Actual value=7.20601344584443,   Proposed value=20.35146359474414
Hasting ratio=0.009844805562021103
Uniform random number=0.6978165062279496
Next value=7.20601344584443

Actual value=7.20601344584443,   Proposed value=25.439110844749862
Hasting ratio=0.0038099730510356682
Uniform random number=0.463278151281568
Next value=7.20601344584443

Actual value=7.20601344584443,   Proposed value=-1.0742927312208685
Hasting ratio=13.642960881727292
Uniform random number=0.8399215079106692
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Next value=-1.0742927312208685

Actual value=-1.0742927312208685,   Proposed value=19.849931589171437
Hasting ratio=0.000803041911748464
Uniform random number=0.12502471849623897
Next value=-1.0742927312208685

Actual value=-1.0742927312208685,   Proposed value=6.571942288385275
Hasting ratio=0.11232397893933932
Uniform random number=0.08482556869887492
Next value=6.571942288385275

Actual value=6.571942288385275,   Proposed value=10.175938877556687
Hasting ratio=0.13467779987799036
Uniform random number=0.6337632893617121
Next value=6.571942288385275

Actual value=6.571942288385275,   Proposed value=-3.1265526984416034
Hasting ratio=1.3853218138684662
Uniform random number=0.38554025989478946
Next value=-3.1265526984416034

Actual value=-3.1265526984416034,   Proposed value=-11.10959023658825
Hasting ratio=0.022694350925586797
Uniform random number=0.1033068589523699
Next value=-3.1265526984416034

Actual value=-3.1265526984416034,   Proposed value=-4.767074133739647
Hasting ratio=0.333246043598975
Uniform random number=0.4423419293200933
Next value=-3.1265526984416034

Actual value=-3.1265526984416034,   Proposed value=1.443610745283629
Hasting ratio=66.03810618808262
Uniform random number=0.852579871109836
Next value=1.443610745283629

Actual value=1.443610745283629,   Proposed value=-5.339796314759422
Hasting ratio=0.0036391820052210193
Uniform random number=0.9957964999435911
Next value=1.443610745283629

Actual value=1.443610745283629,   Proposed value=-3.911492958095839
Hasting ratio=0.00865328659025057
Uniform random number=0.971480377739054
Next value=1.443610745283629

Actual value=1.443610745283629,   Proposed value=-1.1621382198739507
Hasting ratio=0.0886421624495873
Uniform random number=0.8628468957659887
Next value=1.443610745283629

Actual value=1.443610745283629,   Proposed value=0.22344878208799757
Hasting ratio=0.42080307212037965
Uniform random number=0.15552079082952264
Next value=0.22344878208799757

Actual value=0.22344878208799757,   Proposed value=-8.817951662815519
Hasting ratio=0.0017888414927504726

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Uniform random number=0.0644018097095761
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=14.666849617730774
Hasting ratio=0.0006890557664195277
Uniform random number=0.9957556646806909
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-15.863003019190652
Hasting ratio=0.00023119779395823812
Uniform random number=0.16479594966432543
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=3.9632194430413055
Hasting ratio=0.2606834201007268
Uniform random number=0.5465481426634053
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-4.79893110016142
Hasting ratio=0.011768076700697721
Uniform random number=0.19119154495100976
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=19.921126751264836
Hasting ratio=0.0001828831778544965
Uniform random number=0.6870173870836891
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-8.605601370037796
Hasting ratio=0.0019394865825343765
Uniform random number=0.33120143648450173
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-11.328545559961313
Hasting ratio=0.0007632784768917871
Uniform random number=0.38415089677721503
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-7.23971547381157
Hasting ratio=0.003401205107058
Uniform random number=0.4936644495628342
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-10.34305702246006
Hasting ratio=0.001044349795798037
Uniform random number=0.7056675056409031
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-11.869081380250853
Hasting ratio=0.0006489620916893934
Uniform random number=0.9563719185503087
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=-27.03134878319455
Hasting ratio=3.2106974645713746e-05
Uniform random number=0.7912506693652257
Next value=0.22344878208799757

Actual value=0.22344878208799757,            Proposed value=2.863276339536971
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Hasting ratio=0.9079780226643326
Uniform random number=0.08279665179445239
Next value=2.863276339536971

Actual value=2.863276339536971,          Proposed value=-10.773710529793462
Hasting ratio=0.0009999479010454144
Uniform random number=0.8291875001581299
Next value=2.863276339536971

Actual value=2.863276339536971,          Proposed value=11.12449205118817
Hasting ratio=0.002581145032660357
Uniform random number=0.5334626713773287
Next value=2.863276339536971

Actual value=2.863276339536971,          Proposed value=-3.610026636205207
Hasting ratio=0.027851797185780233
Uniform random number=0.03660830662647063
Next value=2.863276339536971

Actual value=2.863276339536971,          Proposed value=2.8772986242596996
Hasting ratio=0.9843664634969541
Uniform random number=0.26248848454926255
Next value=2.8772986242596996

Actual value=2.8772986242596996,          Proposed value=-7.767870284612874
Hasting ratio=0.0030346763423416646
Uniform random number=0.32673661091809814
Next value=2.8772986242596996

Actual value=2.8772986242596996,          Proposed value=-12.581436935256084
Hasting ratio=0.0005918623699023471
Uniform random number=0.2621308705836026
Next value=2.8772986242596996

Actual value=2.8772986242596996,          Proposed value=-9.310337386520485
Hasting ratio=0.0016690850258874873
Uniform random number=0.5210458333757062
Next value=2.8772986242596996

Actual value=2.8772986242596996,          Proposed value=-6.486274483517951
Hasting ratio=0.005377138596151887
Uniform random number=0.8763549990796224
Next value=2.8772986242596996

Actual value=2.8772986242596996,          Proposed value=0.8190061899018395
Hasting ratio=1.998747270328017
Uniform random number=0.8050055863097969
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-1.9726213160913137
Hasting ratio=0.052904882765690345
Uniform random number=0.48141907211501633
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-1.4053468869700678
Hasting ratio=0.09165637425659888
Uniform random number=0.2853005182414432
Next value=0.8190061899018395
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Actual value=0.8190061899018395,          Proposed value=-10.853691420478924
Hasting ratio=0.0004954480348865185
Uniform random number=0.8062074400029134
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-2.4453846942421387
Hasting ratio=0.034806007112355805
Uniform random number=0.7529230707218619
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-9.295779264961649
Hasting ratio=0.0008394656244909954
Uniform random number=0.619100221213504
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-7.025368544986417
Hasting ratio=0.002094640843093642
Uniform random number=0.2885787775815999
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=4.721755977165779
Hasting ratio=0.06701935113976402
Uniform random number=0.6745685957834602
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=6.1589031284060205
Hasting ratio=0.019656704231179958
Uniform random number=0.3208437646661909
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-10.291898349451545
Hasting ratio=0.000594590786996699
Uniform random number=0.7168555193843799
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=3.1749742227927453
Hasting ratio=0.35596613321297377
Uniform random number=0.5596322559806802
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-7.862867981758816
Hasting ratio=0.0014595894206151138
Uniform random number=0.4560286905155222
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-9.428583161666351
Hasting ratio=0.0008003687845483018
Uniform random number=0.11172697458535752
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=5.10644843542155
Hasting ratio=0.046827672752387
Uniform random number=0.5812194365041167
Next value=0.8190061899018395

Actual value=0.8190061899018395,          Proposed value=-1.11004236251847
Hasting ratio=0.12460923089169484
Uniform random number=0.22768647674401488
Next value=0.8190061899018395
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Actual value=0.8190061899018395,   Proposed value=-18.21245337070423
Hasting ratio=7.824397462785886e-05
Uniform random number=0.5898713289256814
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=-4.782991856371664
Hasting ratio=0.00664977223468039
Uniform random number=0.8678684558084786
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=-2.363846698518531
Hasting ratio=0.037322137270015786
Uniform random number=0.6668488657770623
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=5.096747205876937
Hasting ratio=0.04723923949080358
Uniform random number=0.05253568918383211
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=14.215544960866488
Hasting ratio=0.00044236951664887355
Uniform random number=0.43016030490425206
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=4.095942812776162
Hasting ratio=0.12649466423474046
Uniform random number=0.7798682231416662
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=7.7699237218236075
Hasting ratio=0.006701434454294712
Uniform random number=0.8494987643713828
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=-9.300294229994867
Hasting ratio=0.0008380979409308789
Uniform random number=0.8094811053964265
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=-3.9742418442995047
Hasting ratio=0.011038913627855793
Uniform random number=0.5814892744880773
Next value=0.8190061899018395

Actual value=0.8190061899018395,   Proposed value=0.915528120847562
Hasting ratio=1.074441760369691
Uniform random number=0.03140778011325929
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=-17.143217250405915
Hasting ratio=9.08578511452298e-05
Uniform random number=0.7509485588763153
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=21.83641583603326
Hasting ratio=6.434803061125367e-05
Uniform random number=0.2523658712076873

Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=-11.848535356043481
Hasting ratio=0.0003401528000399957
Uniform random number=0.5962611737370079
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=4.423864819347479
Hasting ratio=0.08371883406369046
Uniform random number=0.11275893226280087
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=-24.264660363165646
Hasting ratio=2.511288298056989e-05
Uniform random number=0.7455993003055664
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=10.143201261595348
Hasting ratio=0.0018493270277411893
Uniform random number=0.1786939785355951
Next value=0.915528120847562

Actual value=0.915528120847562,   Proposed value=0.24355342310757522
Hasting ratio=0.5326408014535401
Uniform random number=0.49922646701227447
Next value=0.24355342310757522

Actual value=0.24355342310757522,   Proposed value=24.40401514148709
Hasting ratio=7.531419939611852e-05
Uniform random number=0.6649183724669447
Next value=0.24355342310757522

Actual value=0.24355342310757522,   Proposed value=16.658520801593614
Hasting ratio=0.00038688534023855354
Uniform random number=0.46885160609641874
Next value=0.24355342310757522

Actual value=0.24355342310757522,   Proposed value=7.4082761536038975
Hasting ratio=0.014588845325259985
Uniform random number=0.7095634507747627
Next value=0.24355342310757522

Actual value=0.24355342310757522,   Proposed value=1.8074554226968114
Hasting ratio=2.1892095937307654
Uniform random number=0.9407037526772192
Next value=1.8074554226968114

Actual value=1.8074554226968114,   Proposed value=5.3828013538836
Hasting ratio=0.02930740529847092
Uniform random number=0.4938892048691129
Next value=1.8074554226968114

Actual value=1.8074554226968114,   Proposed value=-4.956942416019881
Hasting ratio=0.004794324662365458
Uniform random number=0.9285117832270879
Next value=1.8074554226968114

Actual value=1.8074554226968114,   Proposed value=-1.8949183201481885
Hasting ratio=0.04538670520465263

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Uniform random number=0.2234282261692795
Next value=1.8074554226968114

Actual value=1.8074554226968114,        Proposed value=-30.43196676906559
Hasting ratio=9.156607462383564e-06
Uniform random number=0.6557054104852459
Next value=1.8074554226968114

Actual value=1.8074554226968114,        Proposed value=1.062008066760034
Hasting ratio=0.939956329506084
Uniform random number=0.38964582395820624
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=18.383311683097748
Hasting ratio=0.00012278831810540254
Uniform random number=0.3267822413178403
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=-3.8256276177149116
Hasting ratio=0.010357747465553561
Uniform random number=0.15604599767266736
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=-6.461603915693798
Hasting ratio=0.0023116044039991086
Uniform random number=0.5514568643606292
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=21.66158750546826
Hasting ratio=6.075690132585098e-05
Uniform random number=0.6184723170686057
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=-7.211151540985325
Hasting ratio=0.0016372001208679388
Uniform random number=0.8236845735966869
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=-3.576904114425879
Hasting ratio=0.012304162936083099
Uniform random number=0.5093765290948798
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=8.476780991504484
Hasting ratio=0.003815157490119828
Uniform random number=0.6213274654929134
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=12.116643373070673
Hasting ratio=0.0007608800728522146
Uniform random number=0.9057530990218257
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=-10.200446085483467
Hasting ratio=0.0005205269735388152
Uniform random number=0.8595516081903789
Next value=1.062008066760034

Actual value=1.062008066760034,         Proposed value=6.010364940470511
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Hasting ratio=0.018696205336530318
Uniform random number=0.9022161745327586
Next value=1.062008066760034

Actual value=1.062008066760034,          Proposed value=-12.811075410846044
Hasting ratio=0.00023591825654873796
Uniform random number=0.6547467647906019
Next value=1.062008066760034

Actual value=1.062008066760034,          Proposed value=0.21308993360038686
Hasting ratio=0.46992634604703293
Uniform random number=0.9250318477206733
Next value=1.062008066760034

Actual value=1.062008066760034,          Proposed value=4.91949235832303
Hasting ratio=0.04719159883552718
Uniform random number=0.7084246185622226
Next value=1.062008066760034

Actual value=1.062008066760034,          Proposed value=9.400218622647657
Hasting ratio=0.0023809332744779274
Uniform random number=0.008997690766850863
Next value=1.062008066760034

Actual value=1.062008066760034,          Proposed value=0.19788672283937536
Hasting ratio=0.46208076357992656
Uniform random number=0.3301527785563727
Next value=0.19788672283937536

Actual value=0.19788672283937536,        Proposed value=-7.536442429693614
Hasting ratio=0.003076343028969325
Uniform random number=0.45179617136837014
Next value=0.19788672283937536

Actual value=0.19788672283937536,        Proposed value=-8.22113869000768
Hasting ratio=0.0023192602420645594
Uniform random number=0.3814732536019283
Next value=0.19788672283937536

Actual value=0.19788672283937536,        Proposed value=-3.2776958099090923
Hasting ratio=0.03305495126107843
Uniform random number=0.3568977156315294
Next value=0.19788672283937536

Actual value=0.19788672283937536,        Proposed value=8.077681818938764
Hasting ratio=0.010300101588700502
Uniform random number=0.8645950396112287
Next value=0.19788672283937536

Actual value=0.19788672283937536,        Proposed value=1.281204356577112
Hasting ratio=2.373395894707969
Uniform random number=0.2505322197793244
Next value=1.281204356577112

Actual value=1.281204356577112,          Proposed value=-0.9287726654380783
Hasting ratio=0.11730515136228388
Uniform random number=0.6070730303960719
Next value=1.281204356577112
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Actual value=1.281204356577112,          Proposed value=24.862659736045835
Hasting ratio=3.084204441957689e-05
Uniform random number=0.20606217804751625
Next value=1.281204356577112

Actual value=1.281204356577112,          Proposed value=29.442984359112106
Hasting ratio=1.512067921865942e-05
Uniform random number=0.36320158907766076
Next value=1.281204356577112

Actual value=1.281204356577112,          Proposed value=4.180407119114047
Hasting ratio=0.08955851203817682
Uniform random number=0.6202922165035164
Next value=1.281204356577112

Actual value=1.281204356577112,          Proposed value=-11.166852498299571
Hasting ratio=0.00034771863882101617
Uniform random number=0.04941140605296401
Next value=1.281204356577112

Actual value=1.281204356577112,          Proposed value=-0.47446156002488227
Hasting ratio=0.195201959580001
Uniform random number=0.1672803455453824
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=-9.237357074234811
Hasting ratio=0.003401002359596913
Uniform random number=0.8028648067442966
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=-14.369183899742826
Hasting ratio=0.0007328323515945668
Uniform random number=0.3556246318868217
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=10.263737951974576
Hasting ratio=0.00747256302528158
Uniform random number=0.6737206821943202
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=18.784298187266458
Hasting ratio=0.000522664886561267
Uniform random number=0.6495415348585832
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=-8.186550834070749
Hasting ratio=0.0050756989267958545
Uniform random number=0.4934218707970951
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=-6.191660156493458
Hasting ratio=0.012315846603638136
Uniform random number=0.6236686530532312
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,       Proposed value=-2.0882501815497996
Hasting ratio=0.18882181329859304
Uniform random number=0.3116129526338317
Next value=-0.47446156002488227
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Actual value=-0.47446156002488227,   Proposed value=-2.2708893590832777
Hasting ratio=0.16049543855228648
Uniform random number=0.4227008792860394
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,   Proposed value=-8.433620611177268
Hasting ratio=0.004603257248749827
Uniform random number=0.8445253640752816
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,   Proposed value=-5.704225964923801
Hasting ratio=0.015788855907579974
Uniform random number=0.6970276336615402
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,   Proposed value=-5.0080502687329105
Hasting ratio=0.023134717177735735
Uniform random number=0.3353349778702456
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,   Proposed value=-4.7771362076904405
Hasting ratio=0.026468386447758747
Uniform random number=0.4196479555273477
Next value=-0.47446156002488227

Actual value=-0.47446156002488227,   Proposed value=0.922454869610531
Hasting ratio=4.282457015269146
Uniform random number=0.4377662317690003
Next value=0.922454869610531

Actual value=0.922454869610531,   Proposed value=-34.547605857657665
Hasting ratio=6.550997327249432e-06
Uniform random number=0.8686457239555162
Next value=0.922454869610531

Actual value=0.922454869610531,   Proposed value=7.841817079557291
Hasting ratio=0.005949409453994249
Uniform random number=0.5848971122203713
Next value=0.922454869610531

Actual value=0.922454869610531,   Proposed value=5.738345911479867
Hasting ratio=0.025286306199080014
Uniform random number=0.013591898607663855
Next value=5.738345911479867

Actual value=5.738345911479867,   Proposed value=15.114749754672285
Hasting ratio=0.012386450393888863
Uniform random number=0.7002238143543654
Next value=5.738345911479867

Actual value=5.738345911479867,   Proposed value=-0.9290500581636518
Hasting ratio=5.547828018487648
Uniform random number=0.275286846299873
Next value=-0.9290500581636518

Actual value=-0.9290500581636518,   Proposed value=8.34764377379312
Hasting ratio=0.03182561598219228
Uniform random number=0.47453215232622603

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Next value=-0.9290500581636518

Actual value=-0.9290500581636518,        Proposed value=1.568655695952486
Hasting ratio=8.774079819391766
Uniform random number=0.9502693902920973
Next value=1.568655695952486

Actual value=1.568655695952486,          Proposed value=7.731088904524071
Hasting ratio=0.0051606423529947
Uniform random number=0.061242204442090054
Next value=1.568655695952486

Actual value=1.568655695952486,          Proposed value=8.931141931462909
Hasting ratio=0.002663384452637942
Uniform random number=0.18003851416838168
Next value=1.568655695952486

Actual value=1.568655695952486,          Proposed value=25.49043790649282
Hasting ratio=2.6973525679819374e-05
Uniform random number=0.712782728488662
Next value=1.568655695952486

Actual value=1.568655695952486,          Proposed value=2.139029656860849
Hasting ratio=0.7771691034117789
Uniform random number=0.08353953830529892
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=10.296053176240903
Hasting ratio=0.0017984432711761968
Uniform random number=0.9193369341305664
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=12.800963138823498
Hasting ratio=0.0006799253961803749
Uniform random number=0.21948071936647195
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=-3.1330054961940395
Hasting ratio=0.019409280358068423
Uniform random number=0.8655732004827185
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=-5.630363589097795
Hasting ratio=0.004007254292190654
Uniform random number=0.935671569413089
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=-6.283134257105669
Hasting ratio=0.0028740090688859177
Uniform random number=0.16815057979924963
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=8.508134352701685
Hasting ratio=0.004277427963623904
Uniform random number=0.15764743684010862
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=-7.913082263841506
Hasting ratio=0.0013843365450265897
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Uniform random number=0.2132130199340453
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=8.097478112316582
Hasting ratio=0.005366434259892103
Uniform random number=0.667265911453179
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=6.284966488864688
Hasting ratio=0.0173232142673632
Uniform random number=0.4598002546115867
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=11.377359917781272
Hasting ratio=0.001148737429264842
Uniform random number=0.4555565670443824
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=3.9144931765370017
Hasting ratio=0.14900167126911448
Uniform random number=0.21496691592491546
Next value=2.139029656860849

Actual value=2.139029656860849,          Proposed value=2.537195186555561
Hasting ratio=0.6993111966457557
Uniform random number=0.09958167873104828
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=14.195475195414364
Hasting ratio=0.0006163191041119901
Uniform random number=0.9684082832497762
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=10.343319309335493
Hasting ratio=0.002519197070880994
Uniform random number=0.3655697787088489
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=6.3811862829286525
Hasting ratio=0.023083889171097636
Uniform random number=0.6480848728887648
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=-6.552523522826792
Hasting ratio=0.003609178325397532
Uniform random number=0.08491372712529366
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=8.051400253782699
Hasting ratio=0.007877717646969736
Uniform random number=0.9417835980630926
Next value=2.537195186555561

Actual value=2.537195186555561,          Proposed value=2.987814829542136
Hasting ratio=0.6111473232295139
Uniform random number=0.2424861906380552
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=7.745930608596309
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Hasting ratio=0.015400498687519295
Uniform random number=0.1331625446550837
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=10.003150320632189
Hasting ratio=0.004793394421083045
Uniform random number=0.832459494431441
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=7.135217569604512
Hasting ratio=0.022502083809883798
Uniform random number=0.7298029581264628
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=11.859028082646454
Hasting ratio=0.0022338227258185284
Uniform random number=0.8424365791894944
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=5.066794144151451
Hasting ratio=0.10996577255568499
Uniform random number=0.4543232355660243
Next value=2.987814829542136

Actual value=2.987814829542136,          Proposed value=3.254228028171321
Hasting ratio=0.7359538986847309
Uniform random number=0.7331397480844376
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=-16.837198998425194
Hasting ratio=0.000320905071500247
Uniform random number=0.15977306249298406
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=21.540482763228425
Hasting ratio=0.00022559366739133038
Uniform random number=0.9947561817097942
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=-7.255092756796545
Hasting ratio=0.005821489111066298
Uniform random number=0.30144935582356647
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=-13.360354048984624
Hasting ratio=0.0007372021095983285
Uniform random number=0.6570058492429252
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=9.972716288969849
Hasting ratio=0.006603471734430882
Uniform random number=0.6204043191192934
Next value=3.254228028171321

Actual value=3.254228028171321,          Proposed value=15.80630708667895
Hasting ratio=0.0008563954302521877
Uniform random number=0.40473255588582213
Next value=3.254228028171321
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Actual value=3.254228028171321,        Proposed value=6.732539563152308
Hasting ratio=0.04001872429243946
Uniform random number=0.02232518186301491
Next value=6.732539563152308

Actual value=6.732539563152308,        Proposed value=16.97567390313879
Hasting ratio=0.015694573061384918
Uniform random number=0.7324277072519726
Next value=6.732539563152308

Actual value=6.732539563152308,        Proposed value=-6.183934976853051
Hasting ratio=0.23976005021659158
Uniform random number=0.5041237484827448
Next value=6.732539563152308

Actual value=6.732539563152308,        Proposed value=18.275435221765434
Hasting ratio=0.011409187208768276
Uniform random number=0.4657991435243902
Next value=6.732539563152308

Actual value=6.732539563152308,        Proposed value=-3.1404014895366625
Hasting ratio=1.5333720217349311
Uniform random number=0.10147850306774864
Next value=-3.1404014895366625

Actual value=-3.1404014895366625,      Proposed value=15.329865669580814
Hasting ratio=0.015948612621518102
Uniform random number=0.8864476778240385
Next value=-3.1404014895366625

Actual value=-3.1404014895366625,      Proposed value=15.713195790337624
Hasting ratio=0.014319961856223813
Uniform random number=0.1917001267018562
Next value=-3.1404014895366625

Actual value=-3.1404014895366625,      Proposed value=2.3215818526713576
Hasting ratio=44.565516328671414
Uniform random number=0.7877446386287503
Next value=2.3215818526713576

Actual value=2.3215818526713576,       Proposed value=12.973976307699902
Hasting ratio=0.0007448819424718426
Uniform random number=0.5791986494968675
Next value=2.3215818526713576

Actual value=2.3215818526713576,       Proposed value=19.137499732457147
Hasting ratio=0.00013690820897982843
Uniform random number=0.690193621906487
Next value=2.3215818526713576

Actual value=2.3215818526713576,       Proposed value=19.50365995694447
Hasting ratio=0.00012620264718943153
Uniform random number=0.20581546578071197
Next value=2.3215818526713576

Actual value=2.3215818526713576,       Proposed value=-5.88664634046151
Hasting ratio=0.004075997932729512
Uniform random number=0.13982438781570194
Next value=2.3215818526713576
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Actual value=2.3215818526713576,        Proposed value=0.4662971627870742
Hasting ratio=0.8158990061266346
Uniform random number=0.35427005122067157
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-6.095063769043791
Hasting ratio=0.004494846764614899
Uniform random number=0.6991369706460795
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=10.335686529407033
Hasting ratio=0.0025186281988210085
Uniform random number=0.4112580753903051
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-4.665858563220494
Hasting ratio=0.009838582591510705
Uniform random number=0.11754061019124284
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-3.485169877236136
Hasting ratio=0.021338666437029127
Uniform random number=0.5925454466602976
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-7.2708038871478236
Hasting ratio=0.0025911376135681944
Uniform random number=0.09356982063463015
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-2.060561592198513
Hasting ratio=0.0673470251379534
Uniform random number=0.24597668410309936
Next value=0.4662971627870742


Actual value=0.4662971627870742,        Proposed value=-0.15045825786360123
Hasting ratio=0.5052151569334238
Uniform random number=0.3167542633403958
Next value=-0.15045825786360123


Actual value=-0.15045825786360123,      Proposed value=17.238141217698654
Hasting ratio=0.0005213510791846241
Uniform random number=0.7007451472616641
Next value=-0.15045825786360123


Actual value=-0.15045825786360123,      Proposed value=3.9491173624457367
Hasting ratio=0.40466178047037876
Uniform random number=0.40813001697074636
Next value=-0.15045825786360123


Actual value=-0.15045825786360123,      Proposed value=-5.793139318281739
Hasting ratio=0.010377312963985719
Uniform random number=0.5347137783307124
Next value=-0.15045825786360123


Actual value=-0.15045825786360123,      Proposed value=3.242280166194471
Hasting ratio=0.8994330679072083
Uniform random number=0.4317772635838164
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Next value=3.242280166194471

Actual value=3.242280166194471,   Proposed value=6.451560010394585
Hasting ratio=0.0481061106069672
Uniform random number=0.03827467637311899
Next value=6.451560010394585

Actual value=6.451560010394585,   Proposed value=6.917967253965188
Hasting ratio=0.7233794584182117
Uniform random number=0.6427020804141126
Next value=6.917967253965188

Actual value=6.917967253965188,   Proposed value=5.863865739891711
Hasting ratio=2.154327360348786
Uniform random number=0.5869655436687394
Next value=5.863865739891711

Actual value=5.863865739891711,   Proposed value=-1.2995942395940752
Hasting ratio=4.13692539769332
Uniform random number=0.5088568392324121
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-4.099955346584363
Hasting ratio=0.09949077615965349
Uniform random number=0.4123238588425976
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-9.964831932927751
Hasting ratio=0.006498365867097896
Uniform random number=0.4406874113540177
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=13.720695213454823
Hasting ratio=0.0050607844984401785
Uniform random number=0.606700281283867
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-14.003860827589708
Hasting ratio=0.001983094779202426
Uniform random number=0.8689229973018541
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-4.6918224398697905
Hasting ratio=0.06873272926883901
Uniform random number=0.5834529606217818
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-20.252386974821313
Hasting ratio=0.0005180350014868202
Uniform random number=0.05945974291694667
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=4.858078460791302
Hasting ratio=0.5762638415269863
Uniform random number=0.8323096337602907
Next value=-1.2995942395940752

Actual value=-1.2995942395940752,   Proposed value=-0.632728394350391
Hasting ratio=2.061349676279649

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Uniform random number=0.007413580638449102
Next value=-0.632728394350391

Actual value=-0.632728394350391,          Proposed value=-0.16185725047781835
Hasting ratio=1.7163784515885958
Uniform random number=0.7506904085305105
Next value=-0.16185725047781835

Actual value=-0.16185725047781835,         Proposed value=-4.514205629149612
Hasting ratio=0.021636637953768828
Uniform random number=0.9536557764328082
Next value=-0.16185725047781835

Actual value=-0.16185725047781835,         Proposed value=-1.5339790064837124
Hasting ratio=0.22286104370125848
Uniform random number=0.6584731448567137
Next value=-0.16185725047781835

Actual value=-0.16185725047781835,         Proposed value=-4.149614517219681
Hasting ratio=0.02722760588812617
Uniform random number=0.8581900776488522
Next value=-0.16185725047781835

Actual value=-0.16185725047781835,         Proposed value=13.481730337016044
Hasting ratio=0.0015455028733361588
Uniform random number=0.6394267874581362
Next value=-0.16185725047781835

Actual value=-0.16185725047781835,         Proposed value=5.556919898837109
Hasting ratio=0.08767759413207221
Uniform random number=0.06549724370703303
Next value=5.556919898837109

Actual value=5.556919898837109,           Proposed value=10.443351804728366
Hasting ratio=0.05498436435749388
Uniform random number=0.7789664556504139
Next value=5.556919898837109

Actual value=5.556919898837109,           Proposed value=16.450732441129304
Hasting ratio=0.0073789260840779
Uniform random number=0.24538881960935932
Next value=5.556919898837109

Actual value=5.556919898837109,           Proposed value=-3.182937007397739
Hasting ratio=0.6092311502744049
Uniform random number=0.3030421786624433
Next value=-3.182937007397739

Actual value=-3.182937007397739,          Proposed value=-23.483488614206898
Hasting ratio=0.0015800250502619399
Uniform random number=0.008818791181040453
Next value=-3.182937007397739

Actual value=-3.182937007397739,          Proposed value=-10.642065223582797
Hasting ratio=0.027464619287479005
Uniform random number=0.758202007370414
Next value=-3.182937007397739

Actual value=-3.182937007397739,          Proposed value=3.7158856069260935
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Hasting ratio=9.932800383589678
Uniform random number=0.3454782046890429
Next value=3.7158856069260935

Actual value=3.7158856069260935,          Proposed value=7.3687163726298355
Hasting ratio=0.04463290490349969
Uniform random number=0.03269993314791497
Next value=7.3687163726298355

Actual value=7.3687163726298355,          Proposed value=20.96025149550053
Hasting ratio=0.009622029816742813
Uniform random number=0.08792905522748551
Next value=7.3687163726298355

Actual value=7.3687163726298355,          Proposed value=2.317815079706971
Hasting ratio=104.15041658481856
Uniform random number=0.1544831852411096
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=5.194119977485394
Hasting ratio=0.04857425255433452
Uniform random number=0.06597877654449891
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=-5.171042352692682
Hasting ratio=0.00596505752454803
Uniform random number=0.7948797536041252
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=2.884009862467863
Hasting ratio=0.5570840396246924
Uniform random number=0.7095564930300043
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=-14.523955345455821
Hasting ratio=0.00019947327763148454
Uniform random number=0.556994051891423
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=-3.9535252601754447
Hasting ratio=0.012556567551819638
Uniform random number=0.8643497650259334
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=-3.158134365686041
Hasting ratio=0.022065918266039406
Uniform random number=0.6534413492787368
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=12.058590612498614
Hasting ratio=0.0010269867072221406
Uniform random number=0.8016853445597175
Next value=2.317815079706971

Actual value=2.317815079706971,          Proposed value=11.768358663891934
Hasting ratio=0.001144670891322793
Uniform random number=0.5926336574495369
Next value=2.317815079706971
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Actual value=2.317815079706971,        Proposed value=-0.20963435502680117
Hasting ratio=0.38369995879452046
Uniform random number=0.21979171431207056
Next value=-0.20963435502680117

Actual value=-0.20963435502680117,      Proposed value=1.024968428036742
Hasting ratio=3.3715187853374915
Uniform random number=0.9970602826937988
Next value=1.024968428036742

Actual value=1.024968428036742,         Proposed value=-9.907198677631108
Hasting ratio=0.0005871133117367132
Uniform random number=0.31701036422972373
Next value=1.024968428036742

Actual value=1.024968428036742,         Proposed value=-0.7937062801999406
Hasting ratio=0.15246188331125093
Uniform random number=0.722180856215253
Next value=1.024968428036742

Actual value=1.024968428036742,         Proposed value=1.6055900193224422
Hasting ratio=1.1475490679919718
Uniform random number=0.10498407387375042
Next value=1.6055900193224422

Actual value=1.6055900193224422,        Proposed value=5.845445478200922
Hasting ratio=0.018934548613281085
Uniform random number=0.9739765173193818
Next value=1.6055900193224422

Actual value=1.6055900193224422,        Proposed value=-3.601531019540142
Hasting ratio=0.010762213224152878
Uniform random number=0.7398991397715664
Next value=1.6055900193224422

Actual value=1.6055900193224422,        Proposed value=10.581123677074736
Hasting ratio=0.0012412795605127095
Uniform random number=0.5098203147350737
Next value=1.6055900193224422

Actual value=1.6055900193224422,        Proposed value=0.5567171106707418
Hasting ratio=0.5992580881419713
Uniform random number=0.4849152654168495
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=12.754135589557706
Hasting ratio=0.0009000534840003162
Uniform random number=0.9343941138431668
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-1.8145088950371417
Hasting ratio=0.0773509273365048
Uniform random number=0.34671044065473644
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=4.509604387604977
Hasting ratio=0.1040687586900525
Uniform random number=0.47841419733271384
Next value=0.5567171106707418
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Actual value=0.5567171106707418,        Proposed value=5.587289933579999
Hasting ratio=0.03896335921559466
Uniform random number=0.7316162400328031
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=11.270736247235202
Hasting ratio=0.0015605105810193398
Uniform random number=0.7157670541388628
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=13.242628274746608
Hasting ratio=0.0007622448907322877
Uniform random number=0.2019965481631928
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=15.071990891091186
Hasting ratio=0.0004317614914187669
Uniform random number=0.172473304931553
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-7.560906699860269
Hasting ratio=0.002089253950269362
Uniform random number=0.20274037620810292
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=7.865486630720197
Hasting ratio=0.007988853594996613
Uniform random number=0.9629657751931888
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-13.12425749752893
Hasting ratio=0.00032170371630990414
Uniform random number=0.6904746957467218
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=15.040601088850266
Hasting ratio=0.0004357142442453881
Uniform random number=0.3990684073168008
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-5.473447737031218
Hasting ratio=0.005676278331162978
Uniform random number=0.2634484577486067
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-18.732527628084913
Hasting ratio=8.898314755115189e-05
Uniform random number=0.46204277676708594
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=-2.952499105754369
Hasting ratio=0.02904281223187664
Uniform random number=0.5428835055920922
Next value=0.5567171106707418

Actual value=0.5567171106707418,        Proposed value=7.699004522941816
Hasting ratio=0.00881596617778142
Uniform random number=0.4094197047838395
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Next value=0.5567171106707418

Actual value=0.5567171106707418,   Proposed value=-11.955417426159567
Hasting ratio=0.0004466704658897682
Uniform random number=0.6933869354519651
Next value=0.5567171106707418

Actual value=0.5567171106707418,   Proposed value=-20.40272336268929
Hasting ratio=6.492969424541094e-05
Uniform random number=0.7456908891374674
Next value=0.5567171106707418

Actual value=0.5567171106707418,   Proposed value=-10.112501277166555
Hasting ratio=0.0007962252545026537
Uniform random number=0.4933956709741897
Next value=0.5567171106707418

Actual value=0.5567171106707418,   Proposed value=2.2670450201101193
Hasting ratio=1.1750574917981773
Uniform random number=0.44348949488875544
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=19.61480957040599
Hasting ratio=0.00011742259217583994
Uniform random number=0.4206644862370804
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=22.021646729896325
Hasting ratio=7.15776125093039e-05
Uniform random number=0.005787102045558878
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=15.41502596341596
Hasting ratio=0.0003330435697192973
Uniform random number=0.8602951196631956
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=-5.859535355289303
Hasting ratio=0.003940625429325613
Uniform random number=0.9981098537338345
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=5.6632476488058305
Hasting ratio=0.03114615118485199
Uniform random number=0.37412588666484503
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=6.340155862656546
Hasting ratio=0.018437084253123053
Uniform random number=0.9026698898777464
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=12.10360862902279
Hasting ratio=0.0009662847457098006
Uniform random number=0.17407281228556226
Next value=2.2670450201101193

Actual value=2.2670450201101193,   Proposed value=-17.668959694271315
Hasting ratio=9.382847426586381e-05

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Uniform random number=0.3984515980667065
Next value=2.2670450201101193

Actual value=2.2670450201101193,          Proposed value=9.793666428303474
Hasting ratio=0.0024987644077410116
Uniform random number=0.4207846170307813
Next value=2.2670450201101193

Actual value=2.2670450201101193,          Proposed value=-1.3497113672530698
Hasting ratio=0.10411545420744099
Uniform random number=0.9197431526807979
Next value=2.2670450201101193

Actual value=2.2670450201101193,          Proposed value=2.7831299204941162
Hasting ratio=0.5964227068395689
Uniform random number=0.025679752230487574
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=-4.651460401003631
Hasting ratio=0.01294362784487203
Uniform random number=0.7111970052650777
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=-2.239208912799265
Hasting ratio=0.07486449532602465
Uniform random number=0.6258207401024758
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=5.807723430333889
Hasting ratio=0.04646026022878248
Uniform random number=0.9070372602626436
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=-5.367353483329066
Hasting ratio=0.008580506054227255
Uniform random number=0.8124959747434671
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=-4.859759862433536
Hasting ratio=0.011437388513194315
Uniform random number=0.36371058153684177
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=22.998191253451505
Hasting ratio=9.977226242886354e-05
Uniform random number=0.5542437090059722
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=13.897798121873773
Hasting ratio=0.000879163117541472
Uniform random number=0.0059869970429162755
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=-2.139685710797151
Hasting ratio=0.08178512668653903
Uniform random number=0.3805520187872018
Next value=2.7831299204941162

Actual value=2.7831299204941162,          Proposed value=24.951679750136268
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Hasting ratio=7.060191999140831e-05
Uniform random number=0.687834121197353
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=8.522735038712376
Hasting ratio=0.007887179113859864
Uniform random number=0.5624723546126782
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=10.084437109728656
Hasting ratio=0.003670547937334543
Uniform random number=0.13937155308371563
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=8.611386417000812
Hasting ratio=0.0075225420814418985
Uniform random number=0.7736469102683953
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=-2.6958548637995428
Hasting ratio=0.0508491607715727
Uniform random number=0.8981523256003049
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=-4.887286098860046
Hasting ratio=0.011254863853449313
Uniform random number=0.0413395605505551
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=15.672728038214348
Hasting ratio=0.0005194536883060115
Uniform random number=0.035014926442121674
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=3.2613037783612113
Hasting ratio=0.5797834062250077
Uniform random number=0.969073879777983
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=-11.60971796785082
Hasting ratio=0.000706046094943747
Uniform random number=0.2336049789161302
Next value=2.7831299204941162

Actual value=2.7831299204941162,        Proposed value=5.12107515397472
Hasting ratio=0.08316268091470173
Uniform random number=0.01525471350119878
Next value=5.12107515397472

Actual value=5.12107515397472,    Proposed value=-1.2708436859000658
Hasting ratio=2.2770032725104663
Uniform random number=0.338789256137348
Next value=-1.2708436859000658

Actual value=-1.2708436859000658,        Proposed value=-0.8558808503728019
Hasting ratio=1.5595355338474632
Uniform random number=0.04442117386451949
Next value=-0.8558808503728019
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Actual value=-0.8558808503728019,        Proposed value=20.853350321139967
Hasting ratio=0.0005128566916553593
Uniform random number=0.915501929656671
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=-19.839093416039837
Hasting ratio=0.0003479704806440618
Uniform random number=0.9512981606467088
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=-1.2590376676411839
Hasting ratio=0.6491302381595153
Uniform random number=0.6743221440491873
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=-3.742297243836122
Hasting ratio=0.07868141373891546
Uniform random number=0.7403655593836488
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=-10.351696609612052
Hasting ratio=0.0035519912628181423
Uniform random number=0.33796685451104114
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=12.048439784781763
Hasting ratio=0.0055987192248295875
Uniform random number=0.07082200670569416
Next value=-0.8558808503728019

Actual value=-0.8558808503728019,        Proposed value=1.9998286782452133
Hasting ratio=6.921959013357101
Uniform random number=0.5992922437397102
Next value=1.9998286782452133

Actual value=1.9998286782452133,         Proposed value=-7.732728311013252
Hasting ratio=0.0013563061614468997
Uniform random number=0.9397052378984112
Next value=1.9998286782452133

Actual value=1.9998286782452133,         Proposed value=2.8033564873524885
Hasting ratio=0.4783639657972249
Uniform random number=0.041570862438984
Next value=2.8033564873524885

Actual value=2.8033564873524885,         Proposed value=3.389835772755786
Hasting ratio=0.5112533917586316
Uniform random number=0.9797584965523956
Next value=2.8033564873524885

Actual value=2.8033564873524885,         Proposed value=7.88812010072399
Hasting ratio=0.011504137821927767
Uniform random number=0.218094697963232
Next value=2.8033564873524885

Actual value=2.8033564873524885,         Proposed value=3.5859357722842837
Hasting ratio=0.40855874291813365
Uniform random number=0.06540494274723152
Next value=3.5859357722842837
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Actual value=3.5859357722842837,   Proposed value=3.843281450441441
Hasting ratio=0.7495378547496977
Uniform random number=0.2663992002097193
Next value=3.843281450441441

Actual value=3.843281450441441,   Proposed value=5.843620567557464
Hasting ratio=0.15077676448234809
Uniform random number=0.09797280047495982
Next value=5.843620567557464

Actual value=5.843620567557464,   Proposed value=13.957926850192068
Hasting ratio=0.019105893283042026
Uniform random number=0.5854341713131642
Next value=5.843620567557464

Actual value=5.843620567557464,   Proposed value=-3.110538947653822
Hasting ratio=0.8126495949431721
Uniform random number=0.6514882066206401
Next value=-3.110538947653822

Actual value=-3.110538947653822,   Proposed value=11.135611506871996
Hasting ratio=0.0640527315362417
Uniform random number=0.3796718007618186
Next value=-3.110538947653822

Actual value=-3.110538947653822,   Proposed value=-3.6188511625186344
Hasting ratio=0.6899736641073041
Uniform random number=0.4289784923383789
Next value=-3.6188511625186344

Actual value=-3.6188511625186344,   Proposed value=-8.309257232001663
Hasting ratio=0.08662282237114631
Uniform random number=0.48358901195306925
Next value=-3.6188511625186344

Actual value=-3.6188511625186344,   Proposed value=-15.690560184129083
Hasting ratio=0.009569974561298517
Uniform random number=0.4671428541863726
Next value=-3.6188511625186344

Actual value=-3.6188511625186344,   Proposed value=-0.35208527321010763
Hasting ratio=20.62493088918877
Uniform random number=0.7203785720624583
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,   Proposed value=6.483673802072127
Hasting ratio=0.053358872412068326
Uniform random number=0.3608432236544631
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,   Proposed value=-23.071953249843734
Hasting ratio=0.00011230209561628384
Uniform random number=0.6759761279254399
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,   Proposed value=-5.421399782667882
Hasting ratio=0.015955761585125226
Uniform random number=0.7586299105501806

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Next value=-0.35208527321010763

Actual value=-0.35208527321010763,        Proposed value=8.96872001954764
Hasting ratio=0.011966473888295113
Uniform random number=0.22220655077613716
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,        Proposed value=-9.798875572182009
Hasting ratio=0.002421786366428073
Uniform random number=0.44773145323121166
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,        Proposed value=-4.607197795410267
Hasting ratio=0.025461710236950933
Uniform random number=0.5073000094225131
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,        Proposed value=-7.5501321573501565
Hasting ratio=0.005735697205429203
Uniform random number=0.11570271576520597
Next value=-0.35208527321010763

Actual value=-0.35208527321010763,        Proposed value=-0.2440035339799079
Hasting ratio=1.1328049477773072
Uniform random number=0.6745958008085521
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=-1.1328690402574644
Hasting ratio=0.3700182456547426
Uniform random number=0.6324311184382507
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=-15.935782378337807
Hasting ratio=0.0003872588453622134
Uniform random number=0.5352024218874737
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=13.234843241374731
Hasting ratio=0.001843605111433888
Uniform random number=0.13276056216560905
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=6.771962257125435
Hasting ratio=0.03849248711438711
Uniform random number=0.301097822731788
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=-6.6396762243086584
Hasting ratio=0.007610315392722638
Uniform random number=0.5096952864163147
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=-5.22043199325465
Hasting ratio=0.015734309690917853
Uniform random number=0.42266313499298847
Next value=-0.2440035339799079

Actual value=-0.2440035339799079,        Proposed value=0.8749561190943348
Hasting ratio=3.174847987598191
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Uniform random number=0.7662008468447205
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=6.337188129033064
Hasting ratio=0.016497522267186242
Uniform random number=0.5099413628002245
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=7.197617800769169
Hasting ratio=0.00914168674842829
Uniform random number=0.867718421028788
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-2.893515858312214
Hasting ratio=0.02311254232383526
Uniform random number=0.8554773363803992
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-0.5813289526281863
Hasting ratio=0.21386362644771695
Uniform random number=0.3543918457896128
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=9.76805398567307
Hasting ratio=0.002257642463777833
Uniform random number=0.5258327465962381
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-10.222629570632062
Hasting ratio=0.0005830628372890988
Uniform random number=0.9102622678588869
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-9.149883604115693
Hasting ratio=0.0008482389808198084
Uniform random number=0.30405287626712063
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=6.1806653770757665
Hasting ratio=0.018529937103224554
Uniform random number=0.5457421271269055
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-8.335573388357528
Hasting ratio=0.001155707343616459
Uniform random number=0.6852573445234418
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=12.486354469692008
Hasting ratio=0.000751336142662095
Uniform random number=0.014036810098706942
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=20.277842475030607
Hasting ratio=9.091427295085281e-05
Uniform random number=0.3533639225458748
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=4.995933227962444
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Hasting ratio=0.04961989760479109
Uniform random number=0.36326584870011647
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=-5.616179286136505
Hasting ratio=0.003995727932048952
Uniform random number=0.2369687975081799
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=8.621922302624125
Hasting ratio=0.003983573433699004
Uniform random number=0.4610475298751754
Next value=0.8749561190943348

Actual value=0.8749561190943348,          Proposed value=0.13311893336032599
Hasting ratio=0.4850734600833758
Uniform random number=0.34947353272669657
Next value=0.13311893336032599

Actual value=0.13311893336032599,         Proposed value=-23.587551457201673
Hasting ratio=5.9265589797660854e-05
Uniform random number=0.5942391995704918
Next value=0.13311893336032599

Actual value=0.13311893336032599,         Proposed value=9.378197443583597
Hasting ratio=0.005598322427984627
Uniform random number=0.6298112688907448
Next value=0.13311893336032599

Actual value=0.13311893336032599,         Proposed value=5.533534728953368
Hasting ratio=0.06383069383178194
Uniform random number=0.6862649787597475
Next value=0.13311893336032599

Actual value=0.13311893336032599,         Proposed value=-17.622454924123225
Hasting ratio=0.00017437913011217795
Uniform random number=0.19541839990902332
Next value=0.13311893336032599

Actual value=0.13311893336032599,         Proposed value=0.6035449062545821
Hasting ratio=1.638208343328742
Uniform random number=0.562559809191595
Next value=0.6035449062545821

Actual value=0.6035449062545821,          Proposed value=-3.201394408707934
Hasting ratio=0.02295841422856416
Uniform random number=0.7264034593954648
Next value=0.6035449062545821

Actual value=0.6035449062545821,          Proposed value=-4.733901806850223
Hasting ratio=0.00825594148511809
Uniform random number=0.8089417994615171
Next value=0.6035449062545821

Actual value=0.6035449062545821,          Proposed value=17.887733023839157
Hasting ratio=0.00019618797361759414
Uniform random number=0.23162043460552928
Next value=0.6035449062545821
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Actual value=0.6035449062545821,          Proposed value=-6.642491467741372
Hasting ratio=0.0030125090363247063
Uniform random number=0.9050397713885335
Next value=0.6035449062545821

Actual value=0.6035449062545821,          Proposed value=1.0751208554447305
Hasting ratio=1.430210749765059
Uniform random number=0.8818029516472656
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=-2.9412947323381777
Hasting ratio=0.019587784735144026
Uniform random number=0.6679860887059326
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=-2.9422952869267416
Hasting ratio=0.019572470895677655
Uniform random number=0.8545464019426777
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=-10.632439177673369
Hasting ratio=0.00044841454177370777
Uniform random number=0.6666509125311662
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=11.332962018917456
Hasting ratio=0.0010179315981367334
Uniform random number=0.3335852886810239
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=-6.11672013636535
Hasting ratio=0.0027172639795558255
Uniform random number=0.04847621282974257
Next value=1.0751208554447305

Actual value=1.0751208554447305,          Proposed value=1.2162075095859743
Hasting ratio=1.0659668416603205
Uniform random number=0.7591271680991443
Next value=1.2162075095859743

Actual value=1.2162075095859743,          Proposed value=15.17768598391195
Hasting ratio=0.0002626542817063888
Uniform random number=0.9622810320798002
Next value=1.2162075095859743

Actual value=1.2162075095859743,          Proposed value=1.7101610020614202
Hasting ratio=1.024037967385559
Uniform random number=0.826047211636868
Next value=1.7101610020614202

Actual value=1.7101610020614202,          Proposed value=3.1041354544134947
Hasting ratio=0.29834584639313216
Uniform random number=0.851294390408402
Next value=1.7101610020614202

Actual value=1.7101610020614202,          Proposed value=18.109516890771193
Hasting ratio=0.0001191556639299015
Uniform random number=0.48857739641864883
Next value=1.7101610020614202
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Actual value=1.7101610020614202,        Proposed value=-3.4178967145748875
Hasting ratio=0.012538795900274555
Uniform random number=0.007359699324679614
Next value=-3.4178967145748875


Actual value=-3.4178967145748875,       Proposed value=9.124662881003783
Hasting ratio=0.1977400267033894
Uniform random number=0.8242362156295986
Next value=-3.4178967145748875


Actual value=-3.4178967145748875,       Proposed value=-7.779831088703126
Hasting ratio=0.09306300947323987
Uniform random number=0.42046570407810857
Next value=-3.4178967145748875


Actual value=-3.4178967145748875,       Proposed value=-1.2750388706872977
Hasting ratio=6.454245761187731
Uniform random number=0.7310147516192397
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-1.6840294266876121
Hasting ratio=0.6633983955970061
Uniform random number=0.7879746547609454
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-11.337343683133017
Hasting ratio=0.0040669176934155825
Uniform random number=0.7045628693186201
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-7.815702153934239
Hasting ratio=0.014205426682773005
Uniform random number=0.0832332463693839
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-2.3152900243068615
Hasting ratio=0.37150356681145313
Uniform random number=0.3817375140631263
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-4.6120632247620925
Hasting ratio=0.0703058124383024
Uniform random number=0.558083472144961
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=-4.380723371687459
Hasting ratio=0.08106904430348727
Uniform random number=0.3920012358136976
Next value=-1.2750388706872977


Actual value=-1.2750388706872977,       Proposed value=4.970157324245957
Hasting ratio=0.5060869074590195
Uniform random number=0.019319569504885337
Next value=4.970157324245957


Actual value=4.970157324245957,         Proposed value=3.518568093764201
Hasting ratio=4.5206908997837125
Uniform random number=0.7452448922879319
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Next value=3.518568093764201

Actual value=3.518568093764201,           Proposed value=14.405655183549314
Hasting ratio=0.0017409243077058322
Uniform random number=0.3081121244355024
Next value=3.518568093764201

Actual value=3.518568093764201,           Proposed value=10.387389270308518
Hasting ratio=0.007446115930365618
Uniform random number=0.05068481158158977
Next value=3.518568093764201

Actual value=3.518568093764201,           Proposed value=3.8359739535989257
Hasting ratio=0.6998362008869367
Uniform random number=0.604654123943
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=5.826183726159917
Hasting ratio=0.15165446093772386
Uniform random number=0.7372038788774364
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=9.24460123642439
Hasting ratio=0.018031009919474376
Uniform random number=0.697229279280813
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=-5.883102568286171
Hasting ratio=0.021623185399504558
Uniform random number=0.9740844875569598
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=6.078554316874506
Hasting ratio=0.12454357259895624
Uniform random number=0.84016788399575
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=-3.66135360265652
Hasting ratio=0.08140773171541596
Uniform random number=0.9604573529513099
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=21.99086772174112
Hasting ratio=0.00039993011131178233
Uniform random number=0.0576995852229516
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=6.755622509481972
Hasting ratio=0.07627015547788432
Uniform random number=0.5642952811428669
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=-1.17969469675625
Hasting ratio=0.6899994891248032
Uniform random number=0.8168439311230355
Next value=3.8359739535989257

Actual value=3.8359739535989257,           Proposed value=-5.589154345198876
Hasting ratio=0.025215675691103976
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Uniform random number=0.5139328928618233
Next value=3.8359739535989257

Actual value=3.8359739535989257,          Proposed value=19.086253386401417
Hasting ratio=0.0007333839622681534
Uniform random number=0.05100708420421529
Next value=3.8359739535989257

Actual value=3.8359739535989257,          Proposed value=4.764509733699968
Hasting ratio=0.3834399405437016
Uniform random number=0.9769470841534493
Next value=3.8359739535989257

Actual value=3.8359739535989257,          Proposed value=1.861566008498955
Hasting ratio=7.296561670387103
Uniform random number=0.4784360838649281
Next value=1.861566008498955

Actual value=1.861566008498955,          Proposed value=-17.03239303371433
Hasting ratio=8.166032733205296e-05
Uniform random number=0.4389061702664182
Next value=1.861566008498955

Actual value=1.861566008498955,          Proposed value=-2.3572965277968096
Hasting ratio=0.03066320709398979
Uniform random number=0.28802038541189157
Next value=1.861566008498955

Actual value=1.861566008498955,          Proposed value=-1.2947419716372919
Hasting ratio=0.08386736877737715
Uniform random number=0.3964169584783046
Next value=1.861566008498955

Actual value=1.861566008498955,          Proposed value=1.6448513966904013
Hasting ratio=1.0739769722145405
Uniform random number=0.687586488039185
Next value=1.6448513966904013

Actual value=1.6448513966904013,          Proposed value=-6.241188934804186
Hasting ratio=0.0023048141833786747
Uniform random number=0.7573408768604643
Next value=1.6448513966904013

Actual value=1.6448513966904013,          Proposed value=7.489869358968447
Hasting ratio=0.00603776870780471
Uniform random number=0.7305204482167701
Next value=1.6448513966904013

Actual value=1.6448513966904013,          Proposed value=7.538973304673672
Hasting ratio=0.005858408322264368
Uniform random number=0.9913620784066104
Next value=1.6448513966904013

Actual value=1.6448513966904013,          Proposed value=2.8433046715530508
Hasting ratio=0.3953718502883466
Uniform random number=0.9834700391795221
Next value=1.6448513966904013

Actual value=1.6448513966904013,          Proposed value=14.537399808534367
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Hasting ratio=0.00030502513836647865
Uniform random number=0.2746765078206669
Next value=1.6448513966904013

Actual value=1.6448513966904013,   Proposed value=0.8519766016097337
Hasting ratio=0.7802984101681302
Uniform random number=0.062497489927196725
Next value=0.8519766016097337

Actual value=0.8519766016097337,   Proposed value=9.823893129575259
Hasting ratio=0.0022382714975750072
Uniform random number=0.5898333011323725
Next value=0.8519766016097337

Actual value=0.8519766016097337,   Proposed value=-5.484097017887361
Hasting ratio=0.004362661455684919
Uniform random number=0.5279242790463988
Next value=0.8519766016097337

Actual value=0.8519766016097337,   Proposed value=0.26105913209603393
Hasting ratio=0.5687034179503792
Uniform random number=0.6708757297026131
Next value=0.8519766016097337

Actual value=0.8519766016097337,   Proposed value=-15.879558939660479
Hasting ratio=0.00012568866825075074
Uniform random number=0.5783411967707465
Next value=0.8519766016097337

Actual value=0.8519766016097337,   Proposed value=1.769509104979487
Hasting ratio=1.238835212418214
Uniform random number=0.9800995598779585
Next value=1.769509104979487

Actual value=1.769509104979487,   Proposed value=-0.09696267213078968
Hasting ratio=0.30647191022544495
Uniform random number=0.27524112342842666
Next value=-0.09696267213078968

Actual value=-0.09696267213078968,   Proposed value=-11.35421400859921
Hasting ratio=0.00108847937348787
Uniform random number=0.6926897062661193
Next value=-0.09696267213078968

Actual value=-0.09696267213078968,   Proposed value=9.917977523656006
Hasting ratio=0.00564657531998725
Uniform random number=0.03418899989824864
Next value=-0.09696267213078968

Actual value=-0.09696267213078968,   Proposed value=-14.406254519526225
Hasting ratio=0.0004700251289141429
Uniform random number=0.8437264124982318
Next value=-0.09696267213078968

Actual value=-0.09696267213078968,   Proposed value=-7.36441134149491
Hasting ratio=0.0046290029854005365
Uniform random number=0.9858776833544993
Next value=-0.09696267213078968

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Actual value=-0.09696267213078968,      Proposed value=2.822918251064097
Hasting ratio=1.3652855336177745
Uniform random number=0.47663384557103916
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=5.451870123055574
Hasting ratio=0.0650991749255048
Uniform random number=0.9398105951607899
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=9.51619029322412
Hasting ratio=0.00498773134569322
Uniform random number=0.9074556580455612
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=15.619308174835965
Hasting ratio=0.0005510367121109213
Uniform random number=0.1857895640705275
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=5.032017782960994
Hasting ratio=0.09421891831508437
Uniform random number=0.5973769453951137
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=5.9894646281766075
Hasting ratio=0.04208305685744575
Uniform random number=0.5982909970662882
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=9.128290486986511
Hasting ratio=0.006026086222214008
Uniform random number=0.34074176098167386
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=4.311955505349245
Hasting ratio=0.1896661086816003
Uniform random number=0.8641939443228108
Next value=2.822918251064097

Actual value=2.822918251064097,         Proposed value=-1.1150199534563505
Hasting ratio=0.2331122588115768
Uniform random number=0.04366312004812978
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,       Proposed value=-9.064880034259655
Hasting ratio=0.007367955408816606
Uniform random number=0.7284992541017521
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,       Proposed value=-13.135966764543163
Hasting ratio=0.0020515258455562732
Uniform random number=0.5832741776496284
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,       Proposed value=-3.077283307280417
Hasting ratio=0.16872384568749282
Uniform random number=0.43565999920416465
Next value=-1.1150199534563505
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Actual value=-1.1150199534563505,        Proposed value=-8.564004732957132
Hasting ratio=0.008900322832074188
Uniform random number=0.06526773367643379
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,        Proposed value=24.25517474406536
Hasting ratio=0.0003568651482004639
Uniform random number=0.48697805236763525
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,        Proposed value=-7.293514488234276
Hasting ratio=0.015001391525721545
Uniform random number=0.628791732782644
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,        Proposed value=-9.613762896269318
Hasting ratio=0.006047191091971692
Uniform random number=0.32646939255596974
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,        Proposed value=17.114618841940572
Hasting ratio=0.0015888941408739297
Uniform random number=0.19840899036693282
Next value=-1.1150199534563505

Actual value=-1.1150199534563505,        Proposed value=4.891490232903967
Hasting ratio=0.46022962933597994
Uniform random number=0.09507559252390285
Next value=4.891490232903967

Actual value=4.891490232903967,          Proposed value=19.756865740857883
Hasting ratio=0.0018594326426021838
Uniform random number=0.9601324220763225
Next value=4.891490232903967

Actual value=4.891490232903967,          Proposed value=9.050630300906771
Hasting ratio=0.05839715355649101
Uniform random number=0.8469381702994149
Next value=4.891490232903967

Actual value=4.891490232903967,          Proposed value=3.4488107790410814
Hasting ratio=4.551172182238968
Uniform random number=0.14333623261327033
Next value=3.4488107790410814

Actual value=3.4488107790410814,         Proposed value=0.5215972896904306
Hasting ratio=2.950890532730946
Uniform random number=0.2865356066960639
Next value=0.5215972896904306

Actual value=0.5215972896904306,         Proposed value=-9.515408255146667
Hasting ratio=0.001012920834065526
Uniform random number=0.23821627643138932
Next value=0.5215972896904306

Actual value=0.5215972896904306,         Proposed value=5.200604045479462
Hasting ratio=0.05618837686465445
Uniform random number=0.8432888422255572
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Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=15.439589664212214
Hasting ratio=0.00040223890396772535
Uniform random number=0.2862337438018595
Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=-3.9564165721988935
Hasting ratio=0.01458052333430189
Uniform random number=0.44019755923610016
Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=-5.705926060017497
Hasting ratio=0.0051909373335910615
Uniform random number=0.47693509307908777
Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=17.972395590156804
Hasting ratio=0.00020807221330075
Uniform random number=0.48943227965981895
Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=7.937240956938419
Hasting ratio=0.007930149499071762
Uniform random number=0.9488600717873001
Next value=0.5215972896904306

Actual value=0.5215972896904306,   Proposed value=3.916047645922703
Hasting ratio=0.20051826195229028
Uniform random number=0.01273247400470523
Next value=3.916047645922703

Actual value=3.916047645922703,   Proposed value=7.218436034680376
Hasting ratio=0.061275799389943215
Uniform random number=0.27077038942766096
Next value=3.916047645922703

Actual value=3.916047645922703,   Proposed value=-2.5512113492224597
Hasting ratio=0.20724461500423555
Uniform random number=0.27863280804550483
Next value=3.916047645922703

Actual value=3.916047645922703,   Proposed value=-18.501585563752393
Hasting ratio=0.00048071874895450555
Uniform random number=0.5389817097353753
Next value=3.916047645922703

Actual value=3.916047645922703,   Proposed value=3.975831836520752
Hasting ratio=0.9369592672795067
Uniform random number=0.582770613971806
Next value=3.975831836520752

Actual value=3.975831836520752,   Proposed value=-15.028255519437403
Hasting ratio=0.0010927542927718092
Uniform random number=0.48286197082964166
Next value=3.975831836520752

Actual value=3.975831836520752,   Proposed value=2.413752280223809
Hasting ratio=5.667600803498529

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Uniform random number=0.3641817691637049
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=5.996756336762969
Hasting ratio=0.027274881108227362
Uniform random number=0.3046401214139446
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-4.962265432670499
Hasting ratio=0.007340417340387451
Uniform random number=0.24224066922482956
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-9.995718986676126
Hasting ratio=0.0008051481226932969
Uniform random number=0.17967092327153666
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=3.516567447975299
Hasting ratio=0.2945124850221646
Uniform random number=0.32294048716964885
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=2.8867867151008344
Hasting ratio=0.6067739246097016
Uniform random number=0.7724686124551576
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=13.52216155209222
Hasting ratio=0.0006756834006911875
Uniform random number=0.49396738277621477
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-10.33736835159327
Hasting ratio=0.0007179550587040187
Uniform random number=0.4713636591612491
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=14.572755981486925
Hasting ratio=0.0004863332401257881
Uniform random number=0.5456409822742518
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-11.39629178263037
Hasting ratio=0.0005130153802976126
Uniform random number=0.7642712152127102
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-6.323762399775724
Hasting ratio=0.0035669376695883666
Uniform random number=0.03025948925663635
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-3.2016385415453996
Hasting ratio=0.023333689573582794
Uniform random number=0.34283630348337146
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-5.077017649535486
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Hasting ratio=0.006873214949385505
Uniform random number=0.6336289543020459
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-1.4687742291675234
Hasting ratio=0.10537846137243749
Uniform random number=0.7886623854916677
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-1.5626534473841707
Hasting ratio=0.09595936916390375
Uniform random number=0.28941111277727005
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-3.8919071722795415
Hasting ratio=0.01429709614772897
Uniform random number=0.9377812406655235
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=-3.176005828369391
Hasting ratio=0.0237870116757498
Uniform random number=0.34373736129002386
Next value=2.413752280223809

Actual value=2.413752280223809,          Proposed value=5.458613985958232
Hasting ratio=0.04218909219552772
Uniform random number=0.03917429078081225
Next value=5.458613985958232

Actual value=5.458613985958232,          Proposed value=4.1431432864373985
Hasting ratio=3.4955588576584358
Uniform random number=0.25597908484729526
Next value=4.1431432864373985

Actual value=4.1431432864373985,          Proposed value=5.677029090264677
Hasting ratio=0.23851603753675862
Uniform random number=0.4541732649876591
Next value=4.1431432864373985

Actual value=4.1431432864373985,          Proposed value=11.1054234965148
Hasting ratio=0.01098859049610985
Uniform random number=0.7720977729077502
Next value=4.1431432864373985

Actual value=4.1431432864373985,          Proposed value=-11.77103364881713
Hasting ratio=0.00310821675788986
Uniform random number=0.9911397774262664
Next value=4.1431432864373985

Actual value=4.1431432864373985,          Proposed value=-6.390524060338803
Hasting ratio=0.02341542345381084
Uniform random number=0.8843693630761216
Next value=4.1431432864373985

Actual value=4.1431432864373985,          Proposed value=3.124577611278716
Hasting ratio=3.135869712074346
Uniform random number=0.1787010472769428
Next value=3.124577611278716
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Actual value=3.124577611278716,         Proposed value=-5.074131001227655
Hasting ratio=0.014886693605852994
Uniform random number=0.3396464968264361
Next value=3.124577611278716

Actual value=3.124577611278716,         Proposed value=-11.047423522076514
Hasting ratio=0.0012354622265801484
Uniform random number=0.9791479019746383
Next value=3.124577611278716

Actual value=3.124577611278716,         Proposed value=5.228389388033031
Hasting ratio=0.1113330354972873
Uniform random number=0.6947858031035947
Next value=3.124577611278716

Actual value=3.124577611278716,         Proposed value=-12.00283306245461
Hasting ratio=0.0009259083853880969
Uniform random number=0.7239521519070579
Next value=3.124577611278716

Actual value=3.124577611278716,         Proposed value=-2.135407940629457
Hasting ratio=0.12093315189145666
Uniform random number=0.009392683596806006
Next value=-2.135407940629457

Actual value=-2.135407940629457,        Proposed value=3.069125555851487
Hasting ratio=8.813931171829994
Uniform random number=0.7679674343651492
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=10.159356879696347
Hasting ratio=0.004905823119695436
Uniform random number=0.7187340291889908
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=6.4760846965017445
Hasting ratio=0.03871192098310842
Uniform random number=0.08073541829983533
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=-1.788128827295889
Hasting ratio=0.1563968616380809
Uniform random number=0.1657952872030135
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=25.904135664238154
Hasting ratio=8.32741087651563e-05
Uniform random number=0.6802599396706055
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=-2.1001792592985673
Hasting ratio=0.11710947305545781
Uniform random number=0.9756060523554402
Next value=3.069125555851487

Actual value=3.069125555851487,         Proposed value=11.049657876699396
Hasting ratio=0.0033625088579042547
Uniform random number=0.34682930925525546
Next value=3.069125555851487
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Actual value=3.069125555851487,          Proposed value=-2.319286512706751
Hasting ratio=0.0964599450472889
Uniform random number=0.4149131012627244
Next value=3.069125555851487

Actual value=3.069125555851487,          Proposed value=-1.3593254447448242
Hasting ratio=0.23887753407864998
Uniform random number=0.0019449305967094155
Next value=-1.3593254447448242

Actual value=-1.3593254447448242,        Proposed value=14.768057433259942
Hasting ratio=0.0038962431892311574
Uniform random number=0.8087507417656306
Next value=-1.3593254447448242

Actual value=-1.3593254447448242,        Proposed value=12.157633779238944
Hasting ratio=0.009188956695336595
Uniform random number=0.9243320373701
Next value=-1.3593254447448242

Actual value=-1.3593254447448242,        Proposed value=-18.770139080473207
Hasting ratio=0.0007291332795923745
Uniform random number=0.9928958687258017
Next value=-1.3593254447448242

Actual value=-1.3593254447448242,        Proposed value=4.972120942979913
Hasting ratio=0.5510045983106546
Uniform random number=0.069806264278507
Next value=4.972120942979913

Actual value=4.972120942979913,          Proposed value=2.021236080090962
Hasting ratio=21.176491141636948
Uniform random number=0.3041153415854527
Next value=2.021236080090962

Actual value=2.021236080090962,          Proposed value=-4.4487636746268056
Hasting ratio=0.007263690089377191
Uniform random number=0.7693068596367902
Next value=2.021236080090962

Actual value=2.021236080090962,          Proposed value=-9.525866792289818
Hasting ratio=0.0006897923992034914
Uniform random number=0.10374963762149958
Next value=2.021236080090962

Actual value=2.021236080090962,          Proposed value=-24.145149784538592
Hasting ratio=2.452276649391584e-05
Uniform random number=0.12610905267266193
Next value=2.021236080090962

Actual value=2.021236080090962,          Proposed value=6.75130658010098
Hasting ratio=0.011449219947038156
Uniform random number=0.8170481366017953
Next value=2.021236080090962

Actual value=2.021236080090962,          Proposed value=0.3828477056220023
Hasting ratio=0.5931554343072307
Uniform random number=0.7528341457025499
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Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=-14.500902753981084
Hasting ratio=0.00015953174102175318
Uniform random number=0.9044732279894674
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=-3.5522783156440467
Hasting ratio=0.013154564857257368
Uniform random number=0.5990889903494068
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=-7.720385381067613
Hasting ratio=0.001381736163916897
Uniform random number=0.9931726398258135
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=-8.24891183319087
Hasting ratio=0.001113590578286055
Uniform random number=0.1806785829366978
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=17.967864052496683
Hasting ratio=0.000142376579820218
Uniform random number=0.8475265467929317
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=11.727654480413612
Hasting ratio=0.0009244411800587674
Uniform random number=0.8776560096510404
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=2.53757338904163
Hasting ratio=0.6441042196158567
Uniform random number=0.993683261265327
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=-1.0733790027680175
Hasting ratio=0.11560791679229004
Uniform random number=0.5625986785584642
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=7.000257554866733
Hasting ratio=0.009680241749840801
Uniform random number=0.5424151927234663
Next value=2.021236080090962

Actual value=2.021236080090962,   Proposed value=1.9930687359983768
Hasting ratio=1.017696629381899
Uniform random number=0.8576252728398436
Next value=1.9930687359983768

Actual value=1.9930687359983768,   Proposed value=-0.5641531956047017
Hasting ratio=0.19951005543039566
Uniform random number=0.20520697733610016
Next value=1.9930687359983768

Actual value=1.9930687359983768,   Proposed value=2.9445378759857173
Hasting ratio=0.4064945127598496

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Uniform random number=0.9465442337869246
Next value=1.9930687359983768

Actual value=1.9930687359983768,          Proposed value=-6.82312349468448
Hasting ratio=0.002013521948222723
Uniform random number=0.6462190488417006
Next value=1.9930687359983768

Actual value=1.9930687359983768,          Proposed value=-8.639213654315416
Hasting ratio=0.0009395585409127816
Uniform random number=0.9396931600601167
Next value=1.9930687359983768

Actual value=1.9930687359983768,          Proposed value=6.476630355583034
Hasting ratio=0.013641808706449427
Uniform random number=0.20406308234447568
Next value=1.9930687359983768

Actual value=1.9930687359983768,          Proposed value=6.632166403753826
Hasting ratio=0.01221885896743714
Uniform random number=0.8178005249470477
Next value=1.9930687359983768

Actual value=1.9930687359983768,          Proposed value=0.5517837006571904
Hasting ratio=0.6918202574454537
Uniform random number=0.19261587503243782
Next value=0.5517837006571904

Actual value=0.5517837006571904,          Proposed value=2.5071272432947835
Hasting ratio=0.9434330915160956
Uniform random number=0.9266211243218998
Next value=2.5071272432947835

Actual value=2.5071272432947835,          Proposed value=1.583432615840778
Hasting ratio=1.7822359637066532
Uniform random number=0.5160151983766214
Next value=1.583432615840778

Actual value=1.583432615840778,           Proposed value=-18.986119000758613
Hasting ratio=5.0609260484623484e-05
Uniform random number=0.33488672239821626
Next value=1.583432615840778

Actual value=1.583432615840778,           Proposed value=15.621890704053628
Hasting ratio=0.00022065577252115484
Uniform random number=0.1924488911302955
Next value=1.583432615840778

Actual value=1.583432615840778,           Proposed value=-3.8289437644779327
Hasting ratio=0.009171946956528967
Uniform random number=0.9293749867590816
Next value=1.583432615840778

Actual value=1.583432615840778,           Proposed value=-3.8302926319678785
Hasting ratio=0.009163552518087138
Uniform random number=0.9965985216111922
Next value=1.583432615840778

Actual value=1.583432615840778,           Proposed value=6.3131826555108415
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Hasting ratio=0.013205558554023934
Uniform random number=0.7996601728450095
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=7.093681628659819
Hasting ratio=0.007690224301084319
Uniform random number=0.8594140557490961
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=18.527499538302365
Hasting ratio=0.00010536851670986444
Uniform random number=0.13732446610742077
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=15.733331741497171
Hasting ratio=0.0002139248312908668
Uniform random number=0.8896723774689215
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=20.39818713461326
Hasting ratio=6.971228346274637e-05
Uniform random number=0.42998945073985795
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=6.578163442061117
Hasting ratio=0.010910391351729649
Uniform random number=0.8943144161680098
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-12.33213187063099
Hasting ratio=0.0002394337684343615
Uniform random number=0.9397429557272454
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-16.126351078737137
Hasting ratio=9.188805986430133e-05
Uniform random number=0.6967914779557111
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-5.849455687818583
Hasting ratio=0.0027815378096786264
Uniform random number=0.9828761629925828
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-17.180882103133907
Hasting ratio=7.29845739328729e-05
Uniform random number=0.9635745649106975
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=2.795167519619106
Hasting ratio=0.4132716652613661
Uniform random number=0.5503345523561718
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=8.272910565290994
Hasting ratio=0.003785556422898602
Uniform random number=0.6717827532140513
Next value=1.583432615840778
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Actual value=1.583432615840778,          Proposed value=-1.4225451222374668
Hasting ratio=0.06788102467962101
Uniform random number=0.15913560850327
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-10.012498788379778
Hasting ratio=0.0004921934467582711
Uniform random number=0.44511779485129843
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-10.063791289213484
Hasting ratio=0.0004837081778383047
Uniform random number=0.7160208448380393
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=11.150772175254772
Hasting ratio=0.0009782972068910387
Uniform random number=0.957798013391147
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=8.89138953025438
Hasting ratio=0.0027221908855209784
Uniform random number=0.6915854402105674
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-3.052128737729467
Hasting ratio=0.01606784104389072
Uniform random number=0.7989955379955503
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-3.754054927825201
Hasting ratio=0.009653130531729018
Uniform random number=0.5318431078491673
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-10.806140867595607
Hasting ratio=0.0003790790657058361
Uniform random number=0.655956095014972
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=13.538078045235206
Hasting ratio=0.00041326560212200385
Uniform random number=0.880811159363797
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=24.0280786343406
Hasting ratio=3.4692829526973735e-05
Uniform random number=0.5018665771873259
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=-2.1617747507408644
Hasting ratio=0.03358248545040449
Uniform random number=0.965607642492411
Next value=1.583432615840778

Actual value=1.583432615840778,          Proposed value=6.525673316734688
Hasting ratio=0.011323780164579009
Uniform random number=0.5867103350787782
Next value=1.583432615840778
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Actual value=1.583432615840778,        Proposed  value=-10.835083525998105
Hasting ratio=0.0003756021237911264
Uniform random number=0.08400332404425481
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=-3.1501971550320422
Hasting ratio=0.014911681518495007
Uniform random number=0.2104952862727375
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=6.336324791717072
Hasting ratio=0.012983015535021422
Uniform random number=0.09144304799447156
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=-27.1114980145866
Hasting ratio=1.3394172643753818e-05
Uniform random number=0.372064658139029
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=-7.9956953809752935
Hasting ratio=0.0010416453853846692
Uniform random number=0.4081266954533608
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=-0.6787728156877608
Hasting ratio=0.15065472711011055
Uniform random number=0.5398913343416294
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=5.058240577798134
Hasting ratio=0.03686484365724319
Uniform random number=0.49892735475717376
Next value=1.583432615840778


Actual value=1.583432615840778,        Proposed  value=0.07535002698425375
Hasting ratio=0.3574241882222651
Uniform random number=0.2724469029060148
Next value=0.07535002698425375


Actual value=0.07535002698425375,      Proposed  value=9.235573676768142
Hasting ratio=0.006406365866627149
Uniform random number=0.5155015351375143
Next value=0.07535002698425375


Actual value=0.07535002698425375,      Proposed  value=8.624129136397535
Hasting ratio=0.008755132980884348
Uniform random number=0.11286676470253398
Next value=0.07535002698425375


Actual value=0.07535002698425375,      Proposed  value=-10.168771020932335
Hasting ratio=0.0013062955765389967
Uniform random number=0.18514227437260622
Next value=0.07535002698425375


Actual value=0.07535002698425375,      Proposed  value=-13.544948347074662
Hasting ratio=0.00048091949219677445
Uniform random number=0.0343122335286149
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Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=28.2300421999175
Hasting ratio=4.9139836246479715e-05
Uniform random number=0.9058745203006521
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-1.4034616056495834
Hasting ratio=0.19362989286515161
Uniform random number=0.7278782213502686
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=7.6144940443307
Hasting ratio=0.015509137921506686
Uniform random number=0.27653468759750977
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-9.61702104195965
Hasting ratio=0.0015786487087456652
Uniform random number=0.11338901734718387
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-3.060920699464002
Hasting ratio=0.04465240308729416
Uniform random number=0.31802415087855207
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-7.8949654012250186
Hasting ratio=0.0030371033266608145
Uniform random number=0.22402495759163332
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=8.136323139757778
Hasting ratio=0.011432008379661287
Uniform random number=0.4673617341820959
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-20.24177570575107
Hasting ratio=0.0001117883548092864
Uniform random number=0.7030445509478049
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=-0.37919183111357346
Hasting ratio=0.5930129119978903
Uniform random number=0.8151786638209384
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=10.226776771951736
Hasting ratio=0.004037355835133209
Uniform random number=0.07363930718617206
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=6.330610172017794
Hasting ratio=0.03647638406060173
Uniform random number=0.40136517070343314
Next value=0.07535002698425375

Actual value=0.07535002698425375,          Proposed value=2.4733633092137004
Hasting ratio=1.6234593834581974
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Uniform random number=0.38721718285653095
Next value=2.4733633092137004

Actual value=2.4733633092137004,          Proposed value=0.36923671980478856
Hasting ratio=0.8511804775007809
Uniform random number=0.07788510025290085
Next value=0.36923671980478856

Actual value=0.36923671980478856,         Proposed value=10.627726518419884
Hasting ratio=0.002457152331458438
Uniform random number=0.965183517421646
Next value=0.36923671980478856

Actual value=0.36923671980478856,         Proposed value=-0.9121127316252791
Hasting ratio=0.23541819713918624
Uniform random number=0.35338793912355504
Next value=0.36923671980478856

Actual value=0.36923671980478856,         Proposed value=1.1982960755772434
Hasting ratio=1.916035106019567
Uniform random number=0.8177011192329786
Next value=1.1982960755772434

Actual value=1.1982960755772434,          Proposed value=-4.948484156097588
Hasting ratio=0.0048069271988014335
Uniform random number=0.5987402898723491
Next value=1.1982960755772434

Actual value=1.1982960755772434,          Proposed value=3.1066439201287466
Hasting ratio=0.30671403168852357
Uniform random number=0.2970749278692
Next value=3.1066439201287466

Actual value=3.1066439201287466,          Proposed value=14.235019723763646
Hasting ratio=0.0011417018759858834
Uniform random number=0.44609998626389225
Next value=3.1066439201287466

Actual value=3.1066439201287466,          Proposed value=-8.159946879010356
Hasting ratio=0.003358052251420881
Uniform random number=0.4836820051648132
Next value=3.1066439201287466

Actual value=3.1066439201287466,          Proposed value=0.8131156290017088
Hasting ratio=2.5843987881882016
Uniform random number=0.054802405708289315
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=6.789781553082733
Hasting ratio=0.012557377607165974
Uniform random number=0.8491414413318875
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=12.758941732507292
Hasting ratio=0.0007158219844215743
Uniform random number=0.46398272573910626
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=-18.250148538339175
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Hasting ratio=7.801457460179331e-05
Uniform random number=0.3282076328960951
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=4.5426567775909845
Hasting ratio=0.08022129855577594
Uniform random number=0.20958459763307447
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=-19.85438244359466
Hasting ratio=5.720951988353213e-05
Uniform random number=0.5885245221215241
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=-10.486344957957767
Hasting ratio=0.0005602924236041636
Uniform random number=0.9732243795060461
Next value=0.8131156290017088

Actual value=0.8131156290017088,          Proposed value=-0.23337356064377857
Hasting ratio=0.33430748415852474
Uniform random number=0.10134845311565932
Next value=-0.23337356064377857

Actual value=-0.23337356064377857,        Proposed value=2.107636471021266
Hasting ratio=3.1761906172445813
Uniform random number=0.5895528619209419
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=4.268143481216878
Hasting ratio=0.09984620177443529
Uniform random number=0.5119884236236198
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=-15.1319221690852
Hasting ratio=0.00014518448884888455
Uniform random number=0.10022464610801751
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=-0.6947884683292034
Hasting ratio=0.18576690215311917
Uniform random number=0.990239891967176
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=-4.59990495371236
Hasting ratio=0.007021278158838724
Uniform random number=0.6230472770123799
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=-7.257419001696174
Hasting ratio=0.0017874158292939786
Uniform random number=0.31433187241896243
Next value=2.107636471021266

Actual value=2.107636471021266,           Proposed value=-2.3789772633876947
Hasting ratio=0.034855796244368346
Uniform random number=0.9337186753314628
Next value=2.107636471021266
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Actual value=2.107636471021266,   Proposed value=25.668163187109947
Hasting ratio=3.2933277252480236e-05
Uniform random number=0.4649498406189969
Next value=2.107636471021266

Actual value=2.107636471021266,   Proposed value=6.594382623181395
Hasting ratio=0.013541915718949854
Uniform random number=0.5677437669544564
Next value=2.107636471021266

Actual value=2.107636471021266,   Proposed value=-4.0426161426005
Hasting ratio=0.00998317884989057
Uniform random number=0.7079763708117153
Next value=2.107636471021266

Actual value=2.107636471021266,   Proposed value=7.280954750932369
Hasting ratio=0.008558404344120451
Uniform random number=0.09389288038583388
Next value=2.107636471021266

Actual value=2.107636471021266,   Proposed value=1.9947290610782313
Hasting ratio=1.0781891628021427
Uniform random number=0.4923043089138608
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=3.9533759711959933
Hasting ratio=0.1294322118930975
Uniform random number=0.29918686145964435
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=11.170530921452228
Hasting ratio=0.0011301528180765461
Uniform random number=0.12053032423101351
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=-14.897975554400709
Hasting ratio=0.0001424184769151324
Uniform random number=0.7717510085979267
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=10.45601307221154
Hasting ratio=0.0015205877733649833
Uniform random number=0.8468929956819934
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=13.128362492080495
Hasting ratio=0.0005510994637190795
Uniform random number=0.08743781387985661
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=-3.144955781863795
Hasting ratio=0.01743233456648958
Uniform random number=0.892573144544284
Next value=1.9947290610782313

Actual value=1.9947290610782313,   Proposed value=1.0420416865547342
Hasting ratio=1.0219471654462349
Uniform random number=0.429278119136011
Next value=1.0420416865547342

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Actual value=1.0420416865547342,        Proposed value=15.457291845208038
Hasting ratio=0.0002633037038645561
Uniform random number=0.4153257675130724
Next value=1.0420416865547342

Actual value=1.0420416865547342,        Proposed value=0.7818610090438171
Hasting ratio=0.8335015652589958
Uniform random number=0.47511222103762396
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=27.589076941605562
Hasting ratio=2.6446889571309228e-05
Uniform random number=0.32977266776490965
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=5.935463628761225
Hasting ratio=0.02404354727175942
Uniform random number=0.674078032956219
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=-1.2954162016543247
Hasting ratio=0.10568867883329372
Uniform random number=0.3222691251042119
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=11.35118913117479
Hasting ratio=0.0012348966805841373
Uniform random number=0.6250916892624279
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=15.254577165933311
Hasting ratio=0.00033463791082395563
Uniform random number=0.29288145830031975
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=16.082213289632904
Hasting ratio=0.00026580735917182838
Uniform random number=0.4753844754492229
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=-4.167892756850538
Hasting ratio=0.010018358762884528
Uniform random number=0.9652879776473507
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=6.372344526375398
Hasting ratio=0.0172868177095513
Uniform random number=0.07622868882338374
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=10.172158878879216
Hasting ratio=0.002020903294679622
Uniform random number=0.7558612458451569
Next value=0.7818610090438171

Actual value=0.7818610090438171,        Proposed value=0.8548579541277349
Hasting ratio=1.0591092825397836
Uniform random number=0.06120767389608306
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Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=-4.885640257517527
Hasting ratio=0.006089877530555587
Uniform random number=0.05553854905992939
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=7.763050641282509
Hasting ratio=0.006545349409017148
Uniform random number=0.19549048407642822
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=9.533699578098327
Hasting ratio=0.0025583639935646088
Uniform random number=0.7349121279767191
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=9.05943513249951
Hasting ratio=0.0032261812189622496
Uniform random number=0.1556398688488203
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=-5.654170280407571
Hasting ratio=0.003975357310001797
Uniform random number=0.7634758255077431
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=-6.858441400781846
Hasting ratio=0.0021982045919638612
Uniform random number=0.2924800987082655
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=-3.4374287942487998
Hasting ratio=0.015569648029823895
Uniform random number=0.6900196530002839
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=13.238170968060727
Hasting ratio=0.0005888138520149555
Uniform random number=0.1359737456919855
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=4.248067346052004
Hasting ratio=0.10481645612200935
Uniform random number=0.6796011940476818
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=-23.26991080715495
Hasting ratio=3.070111948745061e-05
Uniform random number=0.771052266140799
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=12.297544256240249
Hasting ratio=0.0008160579699045051
Uniform random number=0.1645993379009163
Next value=0.8548579541277349

Actual value=0.8548579541277349,   Proposed value=4.127404831645034
Hasting ratio=0.11899607920913645

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Uniform random number=0.9685199276097317
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-3.388368633529847
Hasting ratio=0.01613275387878706
Uniform random number=0.5079593582850386
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-13.086545360189104
Hasting ratio=0.000250678680613205
Uniform random number=0.6872334620365342
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=6.22681902146527
Hasting ratio=0.018171001539346233
Uniform random number=0.9071553353679835
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=6.422895869810435
Hasting ratio=0.01573392179805487
Uniform random number=0.364636069572675
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=5.00369297561423
Hasting ratio=0.050012329483191294
Uniform random number=0.9490701166005975
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-1.0148517541128563
Hasting ratio=0.13422687958862414
Uniform random number=0.6733143140577451
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-4.826609427549379
Hasting ratio=0.006304156652102472
Uniform random number=0.689910688950043
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=14.974501620198641
Hasting ratio=0.00034261248793087366
Uniform random number=0.7728914932132087
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=19.408841801253782
Hasting ratio=0.00011136067771852509
Uniform random number=0.8525319909407285
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-4.9219497961101455
Hasting ratio=0.005962524605391507
Uniform random number=0.4156565045969699
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=5.436351849780494
Hasting ratio=0.03411821517805841
Uniform random number=0.8158746357619832
Next value=0.8548579541277349

Actual value=0.8548579541277349,           Proposed value=-1.5264523101778869
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Hasting ratio=0.07893387351056667
Uniform random number=0.5690654566149881
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=8.350734347433379
Hasting ratio=0.0046808097798417755
Uniform random number=0.9665524381313232
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=5.505943580837238
Hasting ratio=0.03216687585461858
Uniform random number=0.4621450306423103
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=-0.17411955368426912
Hasting ratio=0.3466027395735455
Uniform random number=0.6316953563433765
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=-5.376964648649139
Hasting ratio=0.004614023069612899
Uniform random number=0.5624703917555149
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=23.61835375702535
Hasting ratio=4.8168973219395355e-05
Uniform random number=0.19788300428812322
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=-29.794948530104406
Hasting ratio=1.209303002164089e-05
Uniform random number=0.11705953145173087
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=-8.008646526115415
Hasting ratio=0.001337400258496945
Uniform random number=0.4556494482537431
Next value=0.8548579541277349

Actual value=0.8548579541277349,          Proposed value=1.7046404337163361
Hasting ratio=1.2612616086593325
Uniform random number=0.37884799283956305
Next value=1.7046404337163361

Actual value=1.7046404337163361,          Proposed value=-7.60882447721288
Hasting ratio=0.001251937771563185
Uniform random number=0.14174104555118527
Next value=1.7046404337163361

Actual value=1.7046404337163361,          Proposed value=19.27464636155986
Hasting ratio=9.096426653093296e-05
Uniform random number=0.380464676046662
Next value=1.7046404337163361

Actual value=1.7046404337163361,          Proposed value=-3.733284843527847
Hasting ratio=0.0100207476032963
Uniform random number=0.622379584474532
Next value=1.7046404337163361
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Actual value=1.7046404337163361,        Proposed value=-10.533835182029055
Hasting ratio=0.00042350361859421674
Uniform random number=0.43450121780686135
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=20.090306824373023
Hasting ratio=7.614299599087387e-05
Uniform random number=0.5702366162005582
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=2.8455639859998163
Hasting ratio=0.39984843372695716
Uniform random number=0.8555566061083788
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=-7.0682694986570285
Hasting ratio=0.0015846140863306753
Uniform random number=0.005235654224207575
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=18.048595121616675
Hasting ratio=0.00012071899708241637
Uniform random number=0.9147821674574853
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=12.973172305791241
Hasting ratio=0.0005104768467491509
Uniform random number=0.0814991693921504
Next value=1.7046404337163361

Actual value=1.7046404337163361,        Proposed value=0.9060159814771487
Hasting ratio=0.8231212178114078
Uniform random number=0.36668172016859235
Next value=0.9060159814771487

Actual value=0.9060159814771487,        Proposed value=4.924837345067267
Hasting ratio=0.051813514890922396
Uniform random number=0.5967999228059471
Next value=0.9060159814771487

Actual value=0.9060159814771487,        Proposed value=13.022168011700922
Hasting ratio=0.0006099212562103994
Uniform random number=0.4028691625990215
Next value=0.9060159814771487

Actual value=0.9060159814771487,        Proposed value=-0.795653497513557
Hasting ratio=0.16436375733758254
Uniform random number=0.1319486947479559
Next value=-0.795653497513557

Actual value=-0.795653497513557,        Proposed value=-2.843069057055109
Hasting ratio=0.14309484105742326
Uniform random number=0.9167027644375383
Next value=-0.795653497513557

Actual value=-0.795653497513557,        Proposed value=-10.778559071775733
Hasting ratio=0.0028927432081331285
Uniform random number=0.12735495421983045
Next value=-0.795653497513557
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Actual value=-0.795653497513557,   Proposed value=-5.2937708289863625
Hasting ratio=0.028305612093506717
Uniform random number=0.36798936253810355
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-19.054607421208758
Hasting ratio=0.00037777314092253355
Uniform random number=0.4362406768179442
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-26.490704714215234
Hasting ratio=0.00011057037261599956
Uniform random number=0.6485620182522146
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=17.110720458321495
Hasting ratio=0.001123813850691552
Uniform random number=0.131461922333183
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-14.389143219663728
Hasting ratio=0.001047975817254054
Uniform random number=0.6363724117146021
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=19.041100298214676
Hasting ratio=0.0007085304745388145
Uniform random number=0.7346981256422693
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-12.982147727896368
Hasting ratio=0.0015112820886721075
Uniform random number=0.22770630163860717
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-6.188261922701391
Hasting ratio=0.017729617868533044
Uniform random number=0.3083127234854085
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-6.199961434218127
Hasting ratio=0.01762727836207607
Uniform random number=0.4889220535271611
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=-0.9312196778163072
Hasting ratio=0.8613455448688113
Uniform random number=0.965968858772977
Next value=-0.795653497513557

Actual value=-0.795653497513557,   Proposed value=0.620998374820475
Hasting ratio=4.805316798664397
Uniform random number=0.3411101378248962
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=2.661026816285374
Hasting ratio=0.7528628889768025
Uniform random number=0.9823678175113919

Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=10.577027928961881
Hasting ratio=0.001951878643249182
Uniform random number=0.4981524334746076
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=-0.6472825341278301
Hasting ratio=0.2457131821428088
Uniform random number=0.7298582584556669
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=10.395448163374905
Hasting ratio=0.002110078290583314
Uniform random number=0.6959225286902003
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=3.8544336613028616
Hasting ratio=0.19499991460139882
Uniform random number=0.8208741076156191
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=-12.709961235541426
Hasting ratio=0.00033893015875906913
Uniform random number=0.15791459927502716
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=3.322970482170118
Hasting ratio=0.3559711850587217
Uniform random number=0.4211246218083333
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=5.324251686686786
Hasting ratio=0.04581822363229225
Uniform random number=0.728064626424244
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=-6.913305051539988
Hasting ratio=0.002614392183198365
Uniform random number=0.9869836272648213
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=12.991566141502203
Hasting ratio=0.0007803029669446876
Uniform random number=0.14502789227251056
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=-8.36234578258837
Hasting ratio=0.0014157462315714875
Uniform random number=0.6314245559022386
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=10.736947131736304
Hasting ratio=0.0018245752172480559
Uniform random number=0.017700246730676494
Next value=0.620998374820475

Actual value=0.620998374820475,   Proposed value=0.8686763290035604
Hasting ratio=1.232251306436902

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Uniform random number=0.8389929561694778
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=9.240627977358471
Hasting ratio=0.0029177755441612955
Uniform random number=0.5509903105863388
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=6.320147805405198
Hasting ratio=0.016782980931678404
Uniform random number=0.38830916364129886
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=-8.726319234657867
Hasting ratio=0.0009980414707924505
Uniform random number=0.22790391022036105
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=22.400174159656576
Hasting ratio=5.971009393598166e-05
Uniform random number=0.03805977172361308
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=-6.279552854443876
Hasting ratio=0.0028625404061374407
Uniform random number=0.6211361487132497
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=20.06788616697533
Hasting ratio=9.550301886146114e-05
Uniform random number=0.6854600518732049
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=7.6599015893385305
Hasting ratio=0.006889751714625075
Uniform random number=0.7112257782008977
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=-12.029017487807776
Hasting ratio=0.00033373842786975003
Uniform random number=0.24940880197311288
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=-10.616073632227154
Hasting ratio=0.0005147224484952296
Uniform random number=0.6085166590009359
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=19.562904122777848
Hasting ratio=0.00010653491076063346
Uniform random number=0.7902714523550429
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=14.203346837391159
Hasting ratio=0.0004274848116266464
Uniform random number=0.9234287435545844
Next value=0.8686763290035604

Actual value=0.8686763290035604,              Proposed value=6.160492215163765
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Hasting ratio=0.01890117501068895
Uniform random number=0.5619637970942978
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=3.2487445683411726
Hasting ratio=0.31471567227024944
Uniform random number=0.8422595152713589
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=-9.99464767113385
Hasting ratio=0.0006325699289573478
Uniform random number=0.012944946098427113
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=8.370414125363396
Hasting ratio=0.004582896822171348
Uniform random number=0.7186896911037712
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=-3.5681060953748425
Hasting ratio=0.014036584516640372
Uniform random number=0.08242780566038976
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=9.378454043612237
Hasting ratio=0.0027279110731233415
Uniform random number=0.516320734205759
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=-6.854366592208654
Hasting ratio=0.002179635970109217
Uniform random number=0.92215522411788
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=-2.9210100224650875
Hasting ratio=0.02272370552215324
Uniform random number=0.6766064737915236
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=19.631952574973702
Hasting ratio=0.00010493590587684414
Uniform random number=0.4393631404564844
Next value=0.8686763290035604

Actual value=0.8686763290035604,   Proposed value=1.976581468411914
Hasting ratio=1.1090712251391441
Uniform random number=0.16126512805988713
Next value=1.976581468411914

Actual value=1.976581468411914,   Proposed value=7.261267318918769
Hasting ratio=0.00795065484216841
Uniform random number=0.416723546296487
Next value=1.976581468411914

Actual value=1.976581468411914,   Proposed value=8.678173527177645
Hasting ratio=0.00350286035569135
Uniform random number=0.9263596367622777
Next value=1.976581468411914

```
Actual value=1.976581468411914,          Proposed value=6.239869510575205
Hasting ratio=0.016058280641342744
Uniform random number=0.2826909927283754
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=-12.681986320912369
Hasting ratio=0.0002499335745870643
Uniform random number=0.9456771701927698
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=-3.6572425690915464
Hasting ratio=0.011888664718631583
Uniform random number=0.12841421765681293
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=9.975236682313682
Hasting ratio=0.001859882972738854
Uniform random number=0.8420978031298922
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=-11.76953131904627
Hasting ratio=0.00032474052154328096
Uniform random number=0.3001379242910809
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=4.599276323029484
Hasting ratio=0.06554080842936343
Uniform random number=0.39193269166459843
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=-3.900783618692638
Hasting ratio=0.010064037646218275
Uniform random number=0.5790321264866712
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=19.46120449780954
Hasting ratio=9.823157727854844e-05
Uniform random number=0.04414528547439389
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=6.529369731821932
Hasting ratio=0.013008493578635098
Uniform random number=0.10500704293134022
Next value=1.976581468411914

Actual value=1.976581468411914,          Proposed value=22.07159142454026
Hasting ratio=5.7335766255161006e-05
Uniform random number=0.3804962671090274
Next value=1.976581468411914
```

Answer: It seems that with lower acceptance there is a better exploration of the distribution, while for high values of acceptance there is worse exploration of the distribution. From the above examples, we could make a guess that the value of acceptance should be greater than 10% but less than 20% for a good result in the algorithm.

In [8]: