

nn_lab.R

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```
library(nnet)
library(caret)
```

```
## Warning: package 'caret' was built under R version 3.4.4
```

```
## Loading required package: lattice
```

```
## Loading required package: ggplot2
```

```
## Warning in as.POSIXlt.POSIXct(Sys.time()): unknown timezone 'zone/tz/2018c.
## 1.0/zoneinfo/America/Chicago'
```

```
data <- read.csv("https://archive.ics.uci.edu/ml/machine-learning-databases/glass/glass.
data",
                head=FALSE, sep=",")

data$V11 <- as.factor(data$V11)
#Remove ID
data$V1 <- NULL

train = sample(1:214, 171)
test = setdiff(1:214, train)
data_train = data[train,]
data_test = subset(data[test,], select=-V11)

mod <- nnet(V11 ~ ., data[train,], size=10,skip=FALSE,linout=FALSE)
```

```
## # weights: 166
## initial value 408.965813
## iter 10 value 253.114638
## final value 253.114548
## converged
```

```
summary(mod)
```

```

## a 9-10-6 network with 166 weights
## options were - softmax modelling
## b->h1 i1->h1 i2->h1 i3->h1 i4->h1 i5->h1 i6->h1 i7->h1 i8->h1 i9->h1
## -0.03 0.26 0.26 -0.07 -0.29 -0.25 0.55 -0.57 0.46 -0.57
## b->h2 i1->h2 i2->h2 i3->h2 i4->h2 i5->h2 i6->h2 i7->h2 i8->h2 i9->h2
## 0.40 -0.37 0.65 0.60 -0.50 0.01 0.22 0.45 -0.18 0.52
## b->h3 i1->h3 i2->h3 i3->h3 i4->h3 i5->h3 i6->h3 i7->h3 i8->h3 i9->h3
## -0.56 -0.53 0.05 -0.59 -0.47 -0.62 -0.28 0.40 -0.60 -0.46
## b->h4 i1->h4 i2->h4 i3->h4 i4->h4 i5->h4 i6->h4 i7->h4 i8->h4 i9->h4
## -0.64 0.39 0.53 -0.59 0.04 -0.44 0.18 -0.47 -0.31 -0.33
## b->h5 i1->h5 i2->h5 i3->h5 i4->h5 i5->h5 i6->h5 i7->h5 i8->h5 i9->h5
## -0.03 -0.24 -0.59 0.37 -0.47 -5.39 -0.34 -0.77 0.57 -0.68
## b->h6 i1->h6 i2->h6 i3->h6 i4->h6 i5->h6 i6->h6 i7->h6 i8->h6 i9->h6
## -0.19 -0.43 0.29 0.03 -0.38 -0.20 -0.14 -0.29 0.35 0.38
## b->h7 i1->h7 i2->h7 i3->h7 i4->h7 i5->h7 i6->h7 i7->h7 i8->h7 i9->h7
## 0.48 0.34 -0.59 -0.56 -0.10 0.59 0.17 0.59 -0.11 -0.68
## b->h8 i1->h8 i2->h8 i3->h8 i4->h8 i5->h8 i6->h8 i7->h8 i8->h8 i9->h8
## 0.36 0.54 0.04 0.63 0.01 0.26 -0.68 0.14 -0.61 -0.19
## b->h9 i1->h9 i2->h9 i3->h9 i4->h9 i5->h9 i6->h9 i7->h9 i8->h9 i9->h9
## -0.48 0.40 -0.20 0.15 -0.70 -0.62 0.56 -0.60 -0.48 -0.34
## b->h10 i1->h10 i2->h10 i3->h10 i4->h10 i5->h10 i6->h10 i7->h10 i8->h10
## -0.69 0.50 -0.45 -0.04 -0.37 -0.39 0.11 0.06 0.46
## i9->h10
## 0.44
## b->o1 h1->o1 h2->o1 h3->o1 h4->o1 h5->o1 h6->o1 h7->o1 h8->o1
## 0.37 -0.28 0.30 0.45 0.66 -0.11 0.22 0.00 0.70
## h9->o1 h10->o1
## 0.40 0.53
## b->o2 h1->o2 h2->o2 h3->o2 h4->o2 h5->o2 h6->o2 h7->o2 h8->o2
## 0.37 -0.36 0.27 0.12 -0.51 -0.55 0.63 0.50 0.24
## h9->o2 h10->o2
## 0.57 0.59
## b->o3 h1->o3 h2->o3 h3->o3 h4->o3 h5->o3 h6->o3 h7->o3 h8->o3
## 0.42 -0.22 0.41 0.01 -0.46 0.61 -0.68 -0.33 -0.64
## h9->o3 h10->o3
## -0.31 -0.37
## b->o4 h1->o4 h2->o4 h3->o4 h4->o4 h5->o4 h6->o4 h7->o4 h8->o4
## 0.27 0.21 0.19 0.47 -0.55 0.27 0.26 -0.51 -0.57
## h9->o4 h10->o4
## -0.02 0.07
## b->o5 h1->o5 h2->o5 h3->o5 h4->o5 h5->o5 h6->o5 h7->o5 h8->o5
## -0.38 -0.62 -0.21 -0.55 -0.29 -0.47 -0.41 -0.19 0.00
## h9->o5 h10->o5
## 0.29 -0.22
## b->o6 h1->o6 h2->o6 h3->o6 h4->o6 h5->o6 h6->o6 h7->o6 h8->o6
## 0.39 0.47 0.28 0.51 0.28 -0.65 0.23 -0.23 0.02
## h9->o6 h10->o6
## -0.19 -0.28

```

```

pred <- predict(mod, data_test)
pred

```

| ## | 1 | 2 | 3 | 5 | 6 | 7 |
|--------|-----------|-----------|------------|------------|------------|-----------|
| ## 2 | 0.3450293 | 0.3508764 | 0.07602407 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 9 | 0.3450293 | 0.3508764 | 0.07602407 | 0.04678401 | 0.04093538 | 0.1403508 |
| ## 16 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 20 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 27 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 33 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 36 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 51 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093538 | 0.1403508 |
| ## 54 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 67 | 0.3450293 | 0.3508764 | 0.07602410 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 70 | 0.3450293 | 0.3508764 | 0.07602410 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 79 | 0.3450293 | 0.3508765 | 0.07602407 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 80 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093541 | 0.1403508 |
| ## 81 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093542 | 0.1403508 |
| ## 85 | 0.3450293 | 0.3508764 | 0.07602406 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 90 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093542 | 0.1403508 |
| ## 98 | 0.3450293 | 0.3508764 | 0.07602410 | 0.04678401 | 0.04093541 | 0.1403508 |
| ## 102 | 0.3450293 | 0.3508763 | 0.07602412 | 0.04678401 | 0.04093543 | 0.1403508 |
| ## 104 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 116 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 120 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 124 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 128 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 130 | 0.3450293 | 0.3508764 | 0.07602410 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 132 | 0.3450293 | 0.3508763 | 0.07602413 | 0.04678401 | 0.04093541 | 0.1403508 |
| ## 137 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 145 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 147 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 150 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093541 | 0.1403508 |
| ## 154 | 0.3450293 | 0.3508764 | 0.07602408 | 0.04678401 | 0.04093539 | 0.1403508 |
| ## 158 | 0.3450293 | 0.3508765 | 0.07602407 | 0.04678401 | 0.04093538 | 0.1403508 |
| ## 165 | 0.3450293 | 0.3508763 | 0.07602412 | 0.04678401 | 0.04093543 | 0.1403508 |
| ## 166 | 0.3450293 | 0.3508763 | 0.07602412 | 0.04678401 | 0.04093543 | 0.1403508 |
| ## 169 | 0.3450293 | 0.3508763 | 0.07602410 | 0.04678402 | 0.04093546 | 0.1403508 |
| ## 171 | 0.3450293 | 0.3508763 | 0.07602412 | 0.04678401 | 0.04093542 | 0.1403508 |
| ## 174 | 0.3450293 | 0.3508763 | 0.07602413 | 0.04678401 | 0.04093542 | 0.1403508 |
| ## 180 | 0.3450293 | 0.3508764 | 0.07602409 | 0.04678401 | 0.04093540 | 0.1403508 |
| ## 185 | 0.3450293 | 0.3508767 | 0.07602394 | 0.04678401 | 0.04093534 | 0.1403508 |
| ## 191 | 0.3450293 | 0.3508764 | 0.07602407 | 0.04678401 | 0.04093541 | 0.1403508 |
| ## 199 | 0.3450293 | 0.3508764 | 0.07602406 | 0.04678402 | 0.04093547 | 0.1403508 |
| ## 204 | 0.3450293 | 0.3508765 | 0.07602401 | 0.04678402 | 0.04093545 | 0.1403508 |
| ## 206 | 0.3450293 | 0.3508765 | 0.07602402 | 0.04678402 | 0.04093542 | 0.1403508 |
| ## 210 | 0.3450293 | 0.3508764 | 0.07602404 | 0.04678403 | 0.04093550 | 0.1403508 |

```
pred <- predict(mod, data_test, type="class")
pred
```

```
## [1] "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2"
## [18] "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2" "2"
## [35] "2" "2" "2" "2" "2" "2" "2" "2" "2" "2"
```

```
## In case we don't predict at least one of every potential class.
u = union(pred, data[test,]$V11)
t = table(factor(data[test,]$V11,u), factor(pred, u))
confusionMatrix(t)
```

```
## Confusion Matrix and Statistics
##
##
##      2  1  3  5  6  7
## 2 16  0  0  0  0  0
## 1 11  0  0  0  0  0
## 3  4  0  0  0  0  0
## 5  5  0  0  0  0  0
## 6  2  0  0  0  0  0
## 7  5  0  0  0  0  0
##
## Overall Statistics
##
##              Accuracy : 0.3721
##              95% CI : (0.2298, 0.5327)
##      No Information Rate : 1
##      P-Value [Acc > NIR] : 1
##
##              Kappa : 0
##  Mcnemar's Test P-Value : NA
##
## Statistics by Class:
##
##              Class: 2 Class: 1 Class: 3 Class: 5 Class: 6 Class: 7
## Sensitivity          0.3721          NA          NA          NA          NA          NA
## Specificity          NA      0.7442  0.90698  0.8837  0.95349  0.8837
## Pos Pred Value          NA          NA          NA          NA          NA          NA
## Neg Pred Value          NA          NA          NA          NA          NA          NA
## Prevalence           1.0000  0.0000  0.00000  0.0000  0.00000  0.0000
## Detection Rate        0.3721  0.0000  0.00000  0.0000  0.00000  0.0000
## Detection Prevalence  0.3721  0.2558  0.09302  0.1163  0.04651  0.1163
## Balanced Accuracy          NA          NA          NA          NA          NA          NA
```

```
grid <- expand.grid(size=c(6,7,8,9,10,11,12,13,14,15), decay=c(0,0.01,0.1,1))
nfit <- train(V11 ~ ., data=data[train,], method="nnet", tuneGrid=grid, skip=FALSE, lino
ut=FALSE)
```

```
## # weights: 102
## initial value 305.606465
## iter 10 value 247.936283
## iter 20 value 201.316548
## iter 30 value 188.957077
## iter 40 value 181.761384
## iter 50 value 177.899600
## iter 60 value 176.720763
## iter 70 value 175.822459
## iter 80 value 175.088846
## iter 90 value 173.589956
## iter 100 value 173.051477
## final value 173.051477
## stopped after 100 iterations
## # weights: 118
## initial value 356.580770
## iter 10 value 250.992414
## final value 250.992288
## converged
## # weights: 134
## initial value 314.287618
## iter 10 value 250.992324
## iter 10 value 250.992324
## iter 10 value 250.992324
## final value 250.992324
## converged
## # weights: 150
## initial value 365.354478
## iter 10 value 247.199316
## iter 20 value 199.307846
## iter 30 value 197.706051
## iter 40 value 186.805948
## iter 50 value 163.537737
## iter 60 value 147.894494
## iter 70 value 143.989519
## iter 80 value 142.704107
## iter 90 value 141.373291
## iter 100 value 136.340197
## final value 136.340197
## stopped after 100 iterations
## # weights: 166
## initial value 351.448004
## iter 10 value 251.048671
## final value 250.992317
## converged
## # weights: 182
## initial value 378.679517
## iter 10 value 251.077181
## final value 250.992329
## converged
## # weights: 198
## initial value 320.154542
## iter 10 value 232.487694
```

```
## iter 20 value 182.837239
## iter 30 value 177.584010
## iter 40 value 175.583871
## iter 50 value 175.146907
## iter 60 value 168.324017
## iter 70 value 163.891090
## iter 80 value 163.470126
## iter 90 value 163.416138
## iter 100 value 163.310093
## final value 163.310093
## stopped after 100 iterations
## # weights: 214
## initial value 334.450717
## iter 10 value 250.992352
## final value 250.992323
## converged
## # weights: 230
## initial value 439.861437
## iter 10 value 251.128572
## final value 250.992311
## converged
## # weights: 246
## initial value 666.857606
## iter 10 value 245.086541
## iter 20 value 188.219505
## iter 30 value 168.675718
## iter 40 value 163.277107
## iter 50 value 162.134816
## iter 60 value 152.003303
## iter 70 value 130.683301
## iter 80 value 116.392069
## iter 90 value 109.562318
## iter 100 value 108.634630
## final value 108.634630
## stopped after 100 iterations
## # weights: 102
## initial value 415.153350
## iter 10 value 251.334786
## iter 20 value 251.091454
## iter 30 value 199.339964
## iter 40 value 178.181850
## iter 50 value 164.443996
## iter 60 value 134.496749
## iter 70 value 112.759637
## iter 80 value 110.004487
## iter 90 value 100.589765
## iter 100 value 86.831742
## final value 86.831742
## stopped after 100 iterations
## # weights: 118
## initial value 267.132731
## iter 10 value 243.296779
## iter 20 value 178.481520
## iter 30 value 163.117014
```

```
## iter 40 value 158.541993
## iter 50 value 152.975852
## iter 60 value 134.685311
## iter 70 value 130.950274
## iter 80 value 128.821150
## iter 90 value 115.213736
## iter 100 value 93.498512
## final value 93.498512
## stopped after 100 iterations
## # weights: 134
## initial value 426.425110
## iter 10 value 251.253673
## iter 20 value 250.962375
## iter 30 value 243.164829
## iter 40 value 214.753770
## iter 50 value 204.634845
## iter 60 value 172.582429
## iter 70 value 140.073452
## iter 80 value 124.967736
## iter 90 value 120.535818
## iter 100 value 119.191292
## final value 119.191292
## stopped after 100 iterations
## # weights: 150
## initial value 322.279620
## iter 10 value 254.208024
## iter 20 value 250.961151
## iter 30 value 231.984652
## iter 40 value 207.277006
## iter 50 value 201.651604
## iter 60 value 195.649097
## iter 70 value 191.760623
## iter 80 value 179.771206
## iter 90 value 167.316952
## iter 100 value 144.504071
## final value 144.504071
## stopped after 100 iterations
## # weights: 166
## initial value 436.682980
## iter 10 value 254.708433
## iter 20 value 185.435805
## iter 30 value 154.065158
## iter 40 value 151.439695
## iter 50 value 150.647669
## iter 60 value 142.500472
## iter 70 value 131.526453
## iter 80 value 126.936052
## iter 90 value 114.090558
## iter 100 value 111.213513
## final value 111.213513
## stopped after 100 iterations
## # weights: 182
## initial value 268.335650
## iter 10 value 251.282648
```

```
## iter 20 value 248.373355
## iter 30 value 194.945638
## iter 40 value 174.819827
## iter 50 value 163.606412
## iter 60 value 157.687819
## iter 70 value 147.241567
## iter 80 value 144.897646
## iter 90 value 129.177965
## iter 100 value 110.569767
## final value 110.569767
## stopped after 100 iterations
## # weights: 198
## initial value 419.110493
## iter 10 value 251.266192
## iter 20 value 250.145063
## iter 30 value 189.208801
## iter 40 value 181.322426
## iter 50 value 162.406578
## iter 60 value 146.269108
## iter 70 value 145.267758
## iter 80 value 143.542931
## iter 90 value 134.386897
## iter 100 value 131.208747
## final value 131.208747
## stopped after 100 iterations
## # weights: 214
## initial value 333.819266
## iter 10 value 252.005450
## iter 20 value 230.242891
## iter 30 value 171.783102
## iter 40 value 159.356900
## iter 50 value 130.745273
## iter 60 value 127.959082
## iter 70 value 118.885868
## iter 80 value 112.687522
## iter 90 value 103.898850
## iter 100 value 88.995916
## final value 88.995916
## stopped after 100 iterations
## # weights: 230
## initial value 350.699730
## iter 10 value 247.935723
## iter 20 value 197.713593
## iter 30 value 141.308354
## iter 40 value 127.717481
## iter 50 value 120.438292
## iter 60 value 113.216068
## iter 70 value 109.120721
## iter 80 value 93.165618
## iter 90 value 85.661919
## iter 100 value 83.246867
## final value 83.246867
## stopped after 100 iterations
## # weights: 246
```



```
## initial value 315.067739
## iter 10 value 244.499212
## iter 20 value 178.579575
## iter 30 value 171.914764
## iter 40 value 156.951314
## iter 50 value 130.570215
## iter 60 value 114.944188
## iter 70 value 103.911174
## iter 80 value 93.068447
## iter 90 value 84.032293
## iter 100 value 76.256125
## final value 76.256125
## stopped after 100 iterations
## # weights: 102
## initial value 308.074294
## iter 10 value 252.438234
## iter 20 value 247.711893
## iter 30 value 219.832122
## iter 40 value 174.496458
## iter 50 value 157.255171
## iter 60 value 143.560660
## iter 70 value 140.308820
## iter 80 value 131.512594
## iter 90 value 118.988092
## iter 100 value 109.330028
## final value 109.330028
## stopped after 100 iterations
## # weights: 118
## initial value 360.361140
## iter 10 value 251.985555
## iter 20 value 246.648579
## iter 30 value 191.422667
## iter 40 value 182.675728
## iter 50 value 170.421537
## iter 60 value 168.691597
## iter 70 value 161.926323
## iter 80 value 145.958929
## iter 90 value 126.481556
## iter 100 value 114.346887
## final value 114.346887
## stopped after 100 iterations
## # weights: 134
## initial value 402.422678
## iter 10 value 236.113852
## iter 20 value 211.429481
## iter 30 value 190.104270
## iter 40 value 179.098203
## iter 50 value 157.394116
## iter 60 value 138.499682
## iter 70 value 128.311127
## iter 80 value 125.671410
## iter 90 value 122.340126
## iter 100 value 118.552725
## final value 118.552725
```

```
## stopped after 100 iterations
## # weights: 150
## initial value 489.827448
## iter 10 value 257.352960
## iter 20 value 244.574746
## iter 30 value 194.352039
## iter 40 value 173.377677
## iter 50 value 157.337506
## iter 60 value 145.285746
## iter 70 value 138.152278
## iter 80 value 136.165449
## iter 90 value 135.638961
## iter 100 value 128.104315
## final value 128.104315
## stopped after 100 iterations
## # weights: 166
## initial value 459.229044
## iter 10 value 253.232813
## iter 20 value 222.581167
## iter 30 value 206.710728
## iter 40 value 180.216250
## iter 50 value 154.022068
## iter 60 value 146.105615
## iter 70 value 141.170824
## iter 80 value 136.781507
## iter 90 value 130.146920
## iter 100 value 123.433580
## final value 123.433580
## stopped after 100 iterations
## # weights: 182
## initial value 357.145982
## iter 10 value 248.445992
## iter 20 value 179.704782
## iter 30 value 165.244773
## iter 40 value 146.157511
## iter 50 value 131.437181
## iter 60 value 115.680012
## iter 70 value 104.711089
## iter 80 value 100.563368
## iter 90 value 99.896194
## iter 100 value 98.733836
## final value 98.733836
## stopped after 100 iterations
## # weights: 198
## initial value 277.629921
## iter 10 value 247.467194
## iter 20 value 235.474928
## iter 30 value 216.939890
## iter 40 value 180.306762
## iter 50 value 164.603500
## iter 60 value 135.846841
## iter 70 value 127.996926
## iter 80 value 120.473119
## iter 90 value 114.775761
```

```
## iter 100 value 106.184838
## final value 106.184838
## stopped after 100 iterations
## # weights: 214
## initial value 280.993726
## iter 10 value 253.680700
## iter 20 value 248.742289
## iter 30 value 194.095475
## iter 40 value 173.361787
## iter 50 value 167.388025
## iter 60 value 153.071882
## iter 70 value 133.635351
## iter 80 value 121.109281
## iter 90 value 110.796763
## iter 100 value 104.445765
## final value 104.445765
## stopped after 100 iterations
## # weights: 230
## initial value 322.536382
## iter 10 value 251.272921
## iter 20 value 249.458238
## iter 30 value 237.409262
## iter 40 value 193.686909
## iter 50 value 170.695019
## iter 60 value 156.517323
## iter 70 value 153.108498
## iter 80 value 148.275411
## iter 90 value 142.507947
## iter 100 value 138.344214
## final value 138.344214
## stopped after 100 iterations
## # weights: 246
## initial value 416.276002
## iter 10 value 277.158543
## iter 20 value 226.700406
## iter 30 value 198.348559
## iter 40 value 174.155631
## iter 50 value 144.869263
## iter 60 value 127.553752
## iter 70 value 115.938532
## iter 80 value 113.651706
## iter 90 value 105.421864
## iter 100 value 102.207102
## final value 102.207102
## stopped after 100 iterations
## # weights: 102
## initial value 381.395802
## iter 10 value 252.700743
## iter 20 value 251.397332
## iter 30 value 238.331865
## iter 40 value 216.905300
## iter 50 value 209.619158
## iter 60 value 205.490220
## iter 70 value 199.627066
```

```
## iter 80 value 194.082449
## iter 90 value 193.520112
## iter 100 value 193.298914
## final value 193.298914
## stopped after 100 iterations
## # weights: 118
## initial value 340.045472
## iter 10 value 248.255036
## iter 20 value 218.075012
## iter 30 value 209.672375
## iter 40 value 202.791374
## iter 50 value 199.348138
## iter 60 value 197.425310
## iter 70 value 195.411839
## iter 80 value 192.937489
## iter 90 value 191.310360
## iter 100 value 190.841890
## final value 190.841890
## stopped after 100 iterations
## # weights: 134
## initial value 354.426873
## iter 10 value 264.146507
## iter 20 value 234.567267
## iter 30 value 216.850412
## iter 40 value 211.392429
## iter 50 value 203.951168
## iter 60 value 197.363541
## iter 70 value 193.550355
## iter 80 value 190.812784
## iter 90 value 189.809788
## iter 100 value 189.519861
## final value 189.519861
## stopped after 100 iterations
## # weights: 150
## initial value 309.693255
## iter 10 value 258.484436
## iter 20 value 234.841148
## iter 30 value 216.318176
## iter 40 value 205.725544
## iter 50 value 199.322519
## iter 60 value 196.124623
## iter 70 value 193.906272
## iter 80 value 192.642272
## iter 90 value 192.382366
## iter 100 value 191.605500
## final value 191.605500
## stopped after 100 iterations
## # weights: 166
## initial value 369.108649
## iter 10 value 281.775069
## iter 20 value 270.684145
## iter 30 value 260.099428
## iter 40 value 242.387332
## iter 50 value 205.325005
```

```
## iter 60 value 195.300474
## iter 70 value 191.843487
## iter 80 value 188.985968
## iter 90 value 188.164106
## iter 100 value 187.008998
## final value 187.008998
## stopped after 100 iterations
## # weights: 182
## initial value 328.589682
## iter 10 value 254.133971
## iter 20 value 242.409650
## iter 30 value 228.604296
## iter 40 value 216.360052
## iter 50 value 201.225108
## iter 60 value 194.692148
## iter 70 value 191.192486
## iter 80 value 189.713352
## iter 90 value 188.438388
## iter 100 value 188.102375
## final value 188.102375
## stopped after 100 iterations
## # weights: 198
## initial value 442.034094
## iter 10 value 286.738924
## iter 20 value 272.183285
## iter 30 value 242.458195
## iter 40 value 219.043628
## iter 50 value 215.191342
## iter 60 value 211.227547
## iter 70 value 205.684913
## iter 80 value 197.870767
## iter 90 value 192.871970
## iter 100 value 189.615766
## final value 189.615766
## stopped after 100 iterations
## # weights: 214
## initial value 455.354988
## iter 10 value 280.575952
## iter 20 value 268.725649
## iter 30 value 260.218870
## iter 40 value 250.669732
## iter 50 value 228.181367
## iter 60 value 209.429608
## iter 70 value 200.525935
## iter 80 value 191.182169
## iter 90 value 188.633801
## iter 100 value 187.241464
## final value 187.241464
## stopped after 100 iterations
## # weights: 230
## initial value 427.291151
## iter 10 value 296.878217
## iter 20 value 233.063547
## iter 30 value 221.396921
```

```
## iter 40 value 213.439802
## iter 50 value 202.353204
## iter 60 value 194.273938
## iter 70 value 191.706491
## iter 80 value 189.217016
## iter 90 value 186.398250
## iter 100 value 184.572424
## final value 184.572424
## stopped after 100 iterations
## # weights: 246
## initial value 348.496931
## iter 10 value 272.912042
## iter 20 value 251.624523
## iter 30 value 239.662568
## iter 40 value 225.666453
## iter 50 value 214.889484
## iter 60 value 207.653018
## iter 70 value 199.331102
## iter 80 value 193.752053
## iter 90 value 190.082558
## iter 100 value 187.633725
## final value 187.633725
## stopped after 100 iterations
## # weights: 102
## initial value 351.448104
## iter 10 value 240.682711
## final value 240.682636
## converged
## # weights: 118
## initial value 393.435281
## iter 10 value 240.682639
## final value 240.682636
## converged
## # weights: 134
## initial value 357.036208
## iter 10 value 240.688349
## final value 240.682638
## converged
## # weights: 150
## initial value 362.750467
## iter 10 value 242.175065
## iter 20 value 240.457212
## iter 30 value 201.551104
## iter 40 value 174.586549
## iter 50 value 174.416955
## final value 174.416645
## converged
## # weights: 166
## initial value 355.688955
## iter 10 value 241.368658
## iter 20 value 240.676647
## iter 30 value 183.370810
## iter 40 value 164.117383
## iter 50 value 125.571119
```

```
## iter 60 value 100.448145
## iter 70 value 87.474545
## iter 80 value 75.723109
## iter 90 value 73.568167
## iter 100 value 72.664433
## final value 72.664433
## stopped after 100 iterations
## # weights: 182
## initial value 383.698384
## iter 10 value 240.687018
## final value 240.682641
## converged
## # weights: 198
## initial value 478.700899
## iter 10 value 237.741358
## iter 20 value 183.022631
## iter 30 value 171.822005
## iter 40 value 168.482544
## iter 50 value 166.688914
## iter 60 value 161.777509
## iter 70 value 137.530708
## iter 80 value 111.028482
## iter 90 value 105.901779
## iter 100 value 103.561455
## final value 103.561455
## stopped after 100 iterations
## # weights: 214
## initial value 452.258423
## iter 10 value 240.702450
## final value 240.682636
## converged
## # weights: 230
## initial value 387.580741
## iter 10 value 241.614805
## iter 20 value 207.175957
## iter 30 value 190.253502
## iter 40 value 188.780607
## iter 50 value 186.624472
## iter 60 value 179.582411
## iter 70 value 171.855500
## iter 80 value 162.938221
## iter 90 value 154.826103
## iter 100 value 149.602681
## final value 149.602681
## stopped after 100 iterations
## # weights: 246
## initial value 515.046632
## iter 10 value 228.565810
## iter 20 value 186.919466
## iter 30 value 185.358629
## iter 40 value 185.147226
## iter 50 value 185.049147
## iter 60 value 184.582132
## iter 70 value 183.438687
```

```
## iter 80 value 181.930717
## iter 90 value 181.318846
## iter 100 value 179.775747
## final value 179.775747
## stopped after 100 iterations
## # weights: 102
## initial value 450.690254
## iter 10 value 239.484556
## iter 20 value 195.305992
## iter 30 value 184.957067
## iter 40 value 181.437954
## iter 50 value 151.471436
## iter 60 value 144.241176
## iter 70 value 135.825693
## iter 80 value 117.650717
## iter 90 value 113.329037
## iter 100 value 91.674175
## final value 91.674175
## stopped after 100 iterations
## # weights: 118
## initial value 323.754800
## iter 10 value 241.141908
## iter 20 value 239.297467
## iter 30 value 182.739130
## iter 40 value 142.577594
## iter 50 value 140.237228
## iter 60 value 137.701376
## iter 70 value 124.793927
## iter 80 value 115.400259
## iter 90 value 114.607517
## iter 100 value 114.524296
## final value 114.524296
## stopped after 100 iterations
## # weights: 134
## initial value 347.185148
## iter 10 value 240.878155
## iter 20 value 240.541992
## iter 30 value 193.251872
## iter 40 value 150.277591
## iter 50 value 120.609389
## iter 60 value 110.979228
## iter 70 value 107.433385
## iter 80 value 95.544950
## iter 90 value 90.039836
## iter 100 value 89.190218
## final value 89.190218
## stopped after 100 iterations
## # weights: 150
## initial value 411.292969
## iter 10 value 252.554068
## iter 20 value 223.964923
## iter 30 value 219.548869
## iter 40 value 176.678709
## iter 50 value 142.714634
```



```
## iter 60 value 118.762253
## iter 70 value 111.268688
## iter 80 value 101.517828
## iter 90 value 86.066550
## iter 100 value 79.582222
## final value 79.582222
## stopped after 100 iterations
## # weights: 166
## initial value 328.189562
## iter 10 value 240.874238
## iter 20 value 239.767779
## iter 30 value 204.477473
## iter 40 value 177.480545
## iter 50 value 137.234670
## iter 60 value 107.213512
## iter 70 value 101.544715
## iter 80 value 95.854112
## iter 90 value 84.830462
## iter 100 value 66.582908
## final value 66.582908
## stopped after 100 iterations
## # weights: 182
## initial value 482.608942
## iter 10 value 241.170713
## iter 20 value 240.176988
## iter 30 value 232.560247
## iter 40 value 184.319936
## iter 50 value 150.195733
## iter 60 value 130.766964
## iter 70 value 129.063322
## iter 80 value 101.808435
## iter 90 value 88.789068
## iter 100 value 86.239079
## final value 86.239079
## stopped after 100 iterations
## # weights: 198
## initial value 367.228901
## iter 10 value 241.305264
## iter 20 value 240.080171
## iter 30 value 187.843065
## iter 40 value 163.019474
## iter 50 value 133.583835
## iter 60 value 110.622824
## iter 70 value 103.903993
## iter 80 value 97.123954
## iter 90 value 82.872130
## iter 100 value 76.978649
## final value 76.978649
## stopped after 100 iterations
## # weights: 214
## initial value 395.863606
## iter 10 value 240.999011
## iter 20 value 230.406992
## iter 30 value 160.273353
```

```
## iter 40 value 134.189377
## iter 50 value 132.360287
## iter 60 value 121.295835
## iter 70 value 94.405882
## iter 80 value 81.990785
## iter 90 value 79.603342
## iter 100 value 71.326126
## final value 71.326126
## stopped after 100 iterations
## # weights: 230
## initial value 389.420283
## iter 10 value 241.350554
## iter 20 value 220.784288
## iter 30 value 165.665789
## iter 40 value 150.964960
## iter 50 value 136.213244
## iter 60 value 121.003933
## iter 70 value 116.336801
## iter 80 value 105.093271
## iter 90 value 87.869900
## iter 100 value 79.384745
## final value 79.384745
## stopped after 100 iterations
## # weights: 246
## initial value 285.467301
## iter 10 value 245.458465
## iter 20 value 204.970872
## iter 30 value 173.241329
## iter 40 value 151.766245
## iter 50 value 113.466058
## iter 60 value 103.525255
## iter 70 value 100.249505
## iter 80 value 97.862663
## iter 90 value 86.835465
## iter 100 value 69.500567
## final value 69.500567
## stopped after 100 iterations
## # weights: 102
## initial value 349.930646
## iter 10 value 265.417131
## iter 20 value 252.778841
## iter 30 value 214.538278
## iter 40 value 158.617584
## iter 50 value 143.156717
## iter 60 value 141.558538
## iter 70 value 139.246950
## iter 80 value 131.051765
## iter 90 value 126.825205
## iter 100 value 117.169511
## final value 117.169511
## stopped after 100 iterations
## # weights: 118
## initial value 267.979455
## iter 10 value 240.649309
```

```
## iter 20 value 228.046122
## iter 30 value 200.811473
## iter 40 value 166.125922
## iter 50 value 149.533333
## iter 60 value 145.605433
## iter 70 value 142.139707
## iter 80 value 133.393720
## iter 90 value 123.683702
## iter 100 value 122.263624
## final value 122.263624
## stopped after 100 iterations
## # weights: 134
## initial value 333.641442
## iter 10 value 237.571540
## iter 20 value 203.816111
## iter 30 value 184.751785
## iter 40 value 145.323727
## iter 50 value 136.491334
## iter 60 value 129.551895
## iter 70 value 121.976241
## iter 80 value 115.003178
## iter 90 value 111.038297
## iter 100 value 108.888526
## final value 108.888526
## stopped after 100 iterations
## # weights: 150
## initial value 349.012489
## iter 10 value 242.439441
## iter 20 value 235.132524
## iter 30 value 185.725471
## iter 40 value 177.776282
## iter 50 value 164.005588
## iter 60 value 153.190533
## iter 70 value 140.813763
## iter 80 value 131.602505
## iter 90 value 129.215176
## iter 100 value 126.202824
## final value 126.202824
## stopped after 100 iterations
## # weights: 166
## initial value 471.220501
## iter 10 value 242.638295
## iter 20 value 238.694948
## iter 30 value 181.726266
## iter 40 value 167.409006
## iter 50 value 157.342545
## iter 60 value 138.637270
## iter 70 value 128.993481
## iter 80 value 126.906601
## iter 90 value 119.713600
## iter 100 value 114.726997
## final value 114.726997
## stopped after 100 iterations
## # weights: 182
```

```
## initial value 410.514289
## iter 10 value 244.281660
## iter 20 value 233.547003
## iter 30 value 185.907295
## iter 40 value 167.638208
## iter 50 value 157.866848
## iter 60 value 155.084261
## iter 70 value 133.909485
## iter 80 value 122.185373
## iter 90 value 117.316453
## iter 100 value 116.725689
## final value 116.725689
## stopped after 100 iterations
## # weights: 198
## initial value 402.232530
## iter 10 value 225.056986
## iter 20 value 192.728756
## iter 30 value 173.089327
## iter 40 value 151.002231
## iter 50 value 134.520869
## iter 60 value 122.316064
## iter 70 value 116.132051
## iter 80 value 113.494606
## iter 90 value 108.652116
## iter 100 value 105.591304
## final value 105.591304
## stopped after 100 iterations
## # weights: 214
## initial value 278.660184
## iter 10 value 245.599296
## iter 20 value 240.669097
## iter 30 value 219.786742
## iter 40 value 190.209460
## iter 50 value 178.710786
## iter 60 value 159.165905
## iter 70 value 149.602366
## iter 80 value 141.298534
## iter 90 value 132.827800
## iter 100 value 124.177831
## final value 124.177831
## stopped after 100 iterations
## # weights: 230
## initial value 626.169426
## iter 10 value 246.021324
## iter 20 value 238.081677
## iter 30 value 214.150565
## iter 40 value 190.185295
## iter 50 value 177.593619
## iter 60 value 147.519126
## iter 70 value 123.979527
## iter 80 value 114.386917
## iter 90 value 113.346508
## iter 100 value 109.817530
## final value 109.817530
```

```
## stopped after 100 iterations
## # weights: 246
## initial value 288.384095
## iter 10 value 228.005357
## iter 20 value 189.846634
## iter 30 value 165.820847
## iter 40 value 155.454926
## iter 50 value 128.369075
## iter 60 value 121.041387
## iter 70 value 109.896127
## iter 80 value 107.379452
## iter 90 value 106.548272
## iter 100 value 105.509969
## final value 105.509969
## stopped after 100 iterations
## # weights: 102
## initial value 370.123189
## iter 10 value 246.533507
## iter 20 value 242.898089
## iter 30 value 214.008334
## iter 40 value 195.671895
## iter 50 value 186.622192
## iter 60 value 183.606569
## iter 70 value 181.762388
## iter 80 value 181.380342
## iter 90 value 181.064877
## iter 100 value 181.001416
## final value 181.001416
## stopped after 100 iterations
## # weights: 118
## initial value 345.118411
## iter 10 value 243.714869
## iter 20 value 222.670613
## iter 30 value 199.336797
## iter 40 value 193.446786
## iter 50 value 190.238962
## iter 60 value 186.100100
## iter 70 value 180.820215
## iter 80 value 179.507803
## iter 90 value 179.129331
## iter 100 value 179.062039
## final value 179.062039
## stopped after 100 iterations
## # weights: 134
## initial value 402.632800
## iter 10 value 243.319050
## iter 20 value 241.983338
## iter 30 value 237.567424
## iter 40 value 210.144825
## iter 50 value 197.041319
## iter 60 value 191.236998
## iter 70 value 186.645215
## iter 80 value 181.838555
## iter 90 value 179.784516
```

```
## iter 100 value 179.007775
## final value 179.007775
## stopped after 100 iterations
## # weights: 150
## initial value 400.447861
## iter 10 value 246.083013
## iter 20 value 232.909377
## iter 30 value 209.445814
## iter 40 value 200.881199
## iter 50 value 196.463884
## iter 60 value 189.925983
## iter 70 value 182.996825
## iter 80 value 180.443489
## iter 90 value 179.740382
## iter 100 value 178.778629
## final value 178.778629
## stopped after 100 iterations
## # weights: 166
## initial value 303.151746
## iter 10 value 247.083956
## iter 20 value 239.027753
## iter 30 value 219.523622
## iter 40 value 201.578364
## iter 50 value 190.850241
## iter 60 value 185.514997
## iter 70 value 183.392181
## iter 80 value 179.080202
## iter 90 value 177.308342
## iter 100 value 176.311559
## final value 176.311559
## stopped after 100 iterations
## # weights: 182
## initial value 463.152795
## iter 10 value 266.154540
## iter 20 value 256.118520
## iter 30 value 241.139762
## iter 40 value 224.720992
## iter 50 value 208.144779
## iter 60 value 200.349988
## iter 70 value 195.294448
## iter 80 value 188.373274
## iter 90 value 180.660073
## iter 100 value 177.566405
## final value 177.566405
## stopped after 100 iterations
## # weights: 198
## initial value 482.702869
## iter 10 value 356.788572
## iter 20 value 308.902588
## iter 30 value 208.422232
## iter 40 value 196.477828
## iter 50 value 192.716423
## iter 60 value 187.634753
## iter 70 value 181.613349
```

```
## iter 80 value 178.159762
## iter 90 value 177.290035
## iter 100 value 177.090674
## final value 177.090674
## stopped after 100 iterations
## # weights: 214
## initial value 334.492255
## iter 10 value 253.751005
## iter 20 value 238.387704
## iter 30 value 218.526115
## iter 40 value 198.675761
## iter 50 value 189.524173
## iter 60 value 185.801448
## iter 70 value 181.581646
## iter 80 value 178.559934
## iter 90 value 176.940341
## iter 100 value 176.153928
## final value 176.153928
## stopped after 100 iterations
## # weights: 230
## initial value 438.857861
## iter 10 value 257.434441
## iter 20 value 249.772740
## iter 30 value 242.482131
## iter 40 value 237.525624
## iter 50 value 222.849807
## iter 60 value 197.614664
## iter 70 value 185.606634
## iter 80 value 182.282536
## iter 90 value 179.827668
## iter 100 value 177.074802
## final value 177.074802
## stopped after 100 iterations
## # weights: 246
## initial value 494.410426
## iter 10 value 277.904442
## iter 20 value 247.728158
## iter 30 value 229.694972
## iter 40 value 217.945842
## iter 50 value 200.918893
## iter 60 value 192.179411
## iter 70 value 183.051211
## iter 80 value 177.687549
## iter 90 value 175.708579
## iter 100 value 174.252509
## final value 174.252509
## stopped after 100 iterations
## # weights: 102
## initial value 411.414979
## iter 10 value 248.877019
## final value 248.876858
## converged
## # weights: 118
## initial value 320.985057
```

```
## iter 10 value 249.195243
## iter 20 value 223.519286
## iter 30 value 187.056822
## iter 40 value 179.545185
## iter 50 value 175.160856
## iter 60 value 168.730004
## iter 70 value 168.239005
## iter 80 value 168.090125
## iter 90 value 168.044607
## iter 100 value 167.944648
## final value 167.944648
## stopped after 100 iterations
## # weights: 134
## initial value 266.271236
## iter 10 value 248.100389
## iter 20 value 208.706436
## iter 30 value 189.872901
## iter 40 value 186.040771
## iter 50 value 169.468115
## iter 60 value 165.697990
## iter 70 value 164.770583
## iter 80 value 164.677421
## iter 90 value 164.664352
## iter 100 value 164.661965
## final value 164.661965
## stopped after 100 iterations
## # weights: 150
## initial value 344.792409
## iter 10 value 255.343827
## iter 20 value 216.176874
## iter 30 value 195.327594
## iter 40 value 179.867901
## iter 50 value 172.718571
## iter 60 value 167.757360
## iter 70 value 163.247949
## iter 80 value 162.308653
## iter 90 value 162.053895
## iter 100 value 161.187503
## final value 161.187503
## stopped after 100 iterations
## # weights: 166
## initial value 413.914190
## iter 10 value 253.294523
## final value 248.876853
## converged
## # weights: 182
## initial value 469.159765
## iter 10 value 248.657833
## iter 20 value 224.456025
## iter 30 value 176.709812
## iter 40 value 165.115730
## iter 50 value 156.729570
## iter 60 value 152.995333
## iter 70 value 148.091029
```



```
## iter 80 value 122.034271
## iter 90 value 107.232817
## iter 100 value 99.426287
## final value 99.426287
## stopped after 100 iterations
## # weights: 198
## initial value 294.375915
## iter 10 value 247.820731
## iter 20 value 218.516167
## iter 30 value 190.939485
## iter 40 value 180.905830
## iter 50 value 163.469496
## iter 60 value 160.546104
## iter 70 value 155.369662
## iter 80 value 131.867413
## iter 90 value 123.562693
## iter 100 value 109.912546
## final value 109.912546
## stopped after 100 iterations
## # weights: 214
## initial value 411.018822
## iter 10 value 253.077587
## iter 20 value 214.848792
## iter 30 value 159.544400
## iter 40 value 139.624157
## iter 50 value 122.870490
## iter 60 value 118.179333
## iter 70 value 117.703306
## iter 80 value 117.125531
## iter 90 value 116.215752
## iter 100 value 115.581154
## final value 115.581154
## stopped after 100 iterations
## # weights: 230
## initial value 260.362276
## iter 10 value 249.174262
## iter 20 value 214.848563
## iter 30 value 201.908787
## iter 40 value 199.340512
## iter 50 value 198.415140
## iter 60 value 198.239455
## iter 70 value 198.039585
## iter 80 value 197.266458
## iter 90 value 195.933757
## iter 100 value 195.369112
## final value 195.369112
## stopped after 100 iterations
## # weights: 246
## initial value 422.930107
## iter 10 value 248.903087
## final value 248.876858
## converged
## # weights: 102
## initial value 375.047012
```

```
## iter 10 value 249.039802
## iter 20 value 248.757070
## iter 30 value 229.386082
## iter 40 value 171.488048
## iter 50 value 153.484931
## iter 60 value 128.398318
## iter 70 value 118.725247
## iter 80 value 117.649262
## iter 90 value 117.494471
## iter 100 value 117.474556
## final value 117.474556
## stopped after 100 iterations
## # weights: 118
## initial value 437.602572
## iter 10 value 249.023249
## iter 20 value 248.637072
## iter 30 value 242.209660
## iter 40 value 178.783253
## iter 50 value 170.309529
## iter 60 value 144.372689
## iter 70 value 127.350873
## iter 80 value 120.385147
## iter 90 value 105.366052
## iter 100 value 97.572961
## final value 97.572961
## stopped after 100 iterations
## # weights: 134
## initial value 362.209401
## iter 10 value 249.125805
## iter 20 value 248.819863
## iter 30 value 240.704227
## iter 40 value 196.553977
## iter 50 value 179.193746
## iter 60 value 166.897284
## iter 70 value 143.194348
## iter 80 value 131.875916
## iter 90 value 122.189785
## iter 100 value 105.714495
## final value 105.714495
## stopped after 100 iterations
## # weights: 150
## initial value 525.851639
## iter 10 value 250.560950
## iter 20 value 234.126883
## iter 30 value 204.077690
## iter 40 value 165.804216
## iter 50 value 145.249894
## iter 60 value 143.689806
## iter 70 value 140.474908
## iter 80 value 123.927229
## iter 90 value 116.367624
## iter 100 value 107.650648
## final value 107.650648
## stopped after 100 iterations
```

```
## # weights: 166
## initial value 433.949159
## iter 10 value 250.412729
## iter 20 value 249.959804
## iter 30 value 197.805138
## iter 40 value 193.515047
## iter 50 value 165.830352
## iter 60 value 159.493421
## iter 70 value 139.683167
## iter 80 value 132.802988
## iter 90 value 132.308819
## iter 100 value 129.562914
## final value 129.562914
## stopped after 100 iterations
## # weights: 182
## initial value 366.519854
## iter 10 value 249.228801
## iter 20 value 248.452237
## iter 30 value 235.811690
## iter 40 value 180.409412
## iter 50 value 162.325870
## iter 60 value 130.098961
## iter 70 value 125.457125
## iter 80 value 120.102109
## iter 90 value 113.944242
## iter 100 value 95.013603
## final value 95.013603
## stopped after 100 iterations
## # weights: 198
## initial value 369.861711
## iter 10 value 249.899082
## iter 20 value 248.825497
## iter 30 value 246.582249
## iter 40 value 202.331951
## iter 50 value 192.780852
## iter 60 value 172.161155
## iter 70 value 135.869751
## iter 80 value 122.837101
## iter 90 value 108.583865
## iter 100 value 104.078161
## final value 104.078161
## stopped after 100 iterations
## # weights: 214
## initial value 560.350728
## iter 10 value 250.547179
## iter 20 value 249.265347
## iter 30 value 248.051617
## iter 40 value 232.813162
## iter 50 value 199.942585
## iter 60 value 152.922749
## iter 70 value 132.792020
## iter 80 value 124.167618
## iter 90 value 118.241138
## iter 100 value 109.926780
```

```
## final value 109.926780
## stopped after 100 iterations
## # weights: 230
## initial value 371.973031
## iter 10 value 249.248770
## iter 20 value 248.797473
## iter 30 value 247.204998
## iter 40 value 213.098943
## iter 50 value 193.303243
## iter 60 value 191.389425
## iter 70 value 190.930681
## iter 80 value 183.826795
## iter 90 value 167.796666
## iter 100 value 161.101086
## final value 161.101086
## stopped after 100 iterations
## # weights: 246
## initial value 530.489064
## iter 10 value 249.757640
## iter 20 value 248.771184
## iter 30 value 240.684262
## iter 40 value 238.272956
## iter 50 value 229.861162
## iter 60 value 198.245557
## iter 70 value 153.058780
## iter 80 value 122.765556
## iter 90 value 112.822386
## iter 100 value 104.672687
## final value 104.672687
## stopped after 100 iterations
## # weights: 102
## initial value 439.393346
## iter 10 value 249.212719
## iter 20 value 240.735230
## iter 30 value 203.618113
## iter 40 value 201.497372
## iter 50 value 191.647398
## iter 60 value 164.266650
## iter 70 value 152.594886
## iter 80 value 143.539873
## iter 90 value 134.569032
## iter 100 value 129.804819
## final value 129.804819
## stopped after 100 iterations
## # weights: 118
## initial value 274.381213
## iter 10 value 249.313289
## iter 20 value 246.648379
## iter 30 value 240.614517
## iter 40 value 206.075111
## iter 50 value 195.756840
## iter 60 value 174.546457
## iter 70 value 151.797262
## iter 80 value 149.775354
```

```
## iter 90 value 144.355695
## iter 100 value 134.279471
## final value 134.279471
## stopped after 100 iterations
## # weights: 134
## initial value 429.478141
## iter 10 value 256.291171
## iter 20 value 221.649897
## iter 30 value 207.932927
## iter 40 value 194.291319
## iter 50 value 189.069955
## iter 60 value 185.911028
## iter 70 value 176.599434
## iter 80 value 155.951598
## iter 90 value 141.870528
## iter 100 value 129.543328
## final value 129.543328
## stopped after 100 iterations
## # weights: 150
## initial value 338.377323
## iter 10 value 250.141634
## iter 20 value 234.586025
## iter 30 value 217.709386
## iter 40 value 186.510270
## iter 50 value 153.686970
## iter 60 value 142.547209
## iter 70 value 139.462541
## iter 80 value 138.398362
## iter 90 value 135.831239
## iter 100 value 132.500768
## final value 132.500768
## stopped after 100 iterations
## # weights: 166
## initial value 370.946779
## iter 10 value 250.679971
## iter 20 value 228.111513
## iter 30 value 200.118502
## iter 40 value 178.180337
## iter 50 value 166.707633
## iter 60 value 162.893465
## iter 70 value 153.156661
## iter 80 value 147.954779
## iter 90 value 135.239626
## iter 100 value 127.772026
## final value 127.772026
## stopped after 100 iterations
## # weights: 182
## initial value 359.068287
## iter 10 value 252.916624
## iter 20 value 242.741815
## iter 30 value 199.199466
## iter 40 value 182.751730
## iter 50 value 164.844218
## iter 60 value 148.904501
```

```
## iter 70 value 140.026375
## iter 80 value 135.421104
## iter 90 value 131.600984
## iter 100 value 129.654452
## final value 129.654452
## stopped after 100 iterations
## # weights: 198
## initial value 426.140733
## iter 10 value 252.840435
## iter 20 value 221.313553
## iter 30 value 215.797915
## iter 40 value 208.688150
## iter 50 value 173.354218
## iter 60 value 163.376523
## iter 70 value 160.467371
## iter 80 value 159.862404
## iter 90 value 156.762594
## iter 100 value 151.866469
## final value 151.866469
## stopped after 100 iterations
## # weights: 214
## initial value 296.112807
## iter 10 value 251.957171
## iter 20 value 206.591133
## iter 30 value 197.491916
## iter 40 value 185.422790
## iter 50 value 164.959810
## iter 60 value 149.884196
## iter 70 value 143.725832
## iter 80 value 135.730785
## iter 90 value 130.292868
## iter 100 value 127.637747
## final value 127.637747
## stopped after 100 iterations
## # weights: 230
## initial value 429.725385
## iter 10 value 249.903164
## iter 20 value 243.889989
## iter 30 value 221.347949
## iter 40 value 197.533915
## iter 50 value 177.846959
## iter 60 value 171.993961
## iter 70 value 155.675506
## iter 80 value 144.872243
## iter 90 value 136.298696
## iter 100 value 130.434976
## final value 130.434976
## stopped after 100 iterations
## # weights: 246
## initial value 263.230672
## iter 10 value 225.451054
## iter 20 value 197.026602
## iter 30 value 183.332770
## iter 40 value 155.280722
```

```
## iter 50 value 149.310869
## iter 60 value 137.719875
## iter 70 value 133.639820
## iter 80 value 132.267265
## iter 90 value 129.718200
## iter 100 value 126.051678
## final value 126.051678
## stopped after 100 iterations
## # weights: 102
## initial value 297.399345
## iter 10 value 254.419322
## iter 20 value 250.738798
## iter 30 value 225.680938
## iter 40 value 211.751313
## iter 50 value 208.922587
## iter 60 value 208.018815
## iter 70 value 206.775679
## iter 80 value 204.050034
## iter 90 value 203.670971
## iter 100 value 203.572928
## final value 203.572928
## stopped after 100 iterations
## # weights: 118
## initial value 473.529479
## iter 10 value 253.405955
## iter 20 value 249.488702
## iter 30 value 235.123358
## iter 40 value 217.918759
## iter 50 value 210.932943
## iter 60 value 206.472087
## iter 70 value 203.767148
## iter 80 value 202.635163
## iter 90 value 202.220771
## iter 100 value 201.379694
## final value 201.379694
## stopped after 100 iterations
## # weights: 134
## initial value 333.495053
## iter 10 value 259.664231
## iter 20 value 247.081737
## iter 30 value 233.709283
## iter 40 value 211.685176
## iter 50 value 205.567644
## iter 60 value 201.004622
## iter 70 value 199.093322
## iter 80 value 197.648603
## iter 90 value 197.265366
## iter 100 value 197.224229
## final value 197.224229
## stopped after 100 iterations
## # weights: 150
## initial value 438.331729
## iter 10 value 265.904195
## iter 20 value 262.298982
```

```
## iter 30 value 242.936959
## iter 40 value 217.846620
## iter 50 value 209.145600
## iter 60 value 205.350152
## iter 70 value 204.465943
## iter 80 value 203.838145
## iter 90 value 202.264923
## iter 100 value 200.181837
## final value 200.181837
## stopped after 100 iterations
## # weights: 166
## initial value 537.869966
## iter 10 value 286.788612
## iter 20 value 267.906633
## iter 30 value 243.737234
## iter 40 value 218.832302
## iter 50 value 205.234459
## iter 60 value 202.782041
## iter 70 value 201.453703
## iter 80 value 200.083908
## iter 90 value 198.326740
## iter 100 value 197.257927
## final value 197.257927
## stopped after 100 iterations
## # weights: 182
## initial value 381.816655
## iter 10 value 254.702120
## iter 20 value 237.640926
## iter 30 value 224.501681
## iter 40 value 214.665891
## iter 50 value 210.407717
## iter 60 value 206.102289
## iter 70 value 201.358148
## iter 80 value 199.915526
## iter 90 value 199.535871
## iter 100 value 199.015473
## final value 199.015473
## stopped after 100 iterations
## # weights: 198
## initial value 429.090781
## iter 10 value 288.470553
## iter 20 value 259.472013
## iter 30 value 241.460556
## iter 40 value 229.826905
## iter 50 value 214.980331
## iter 60 value 208.288431
## iter 70 value 205.164210
## iter 80 value 202.837810
## iter 90 value 200.229763
## iter 100 value 198.489071
## final value 198.489071
## stopped after 100 iterations
## # weights: 214
## initial value 502.066016
```



```
## iter 10 value 298.480886
## iter 20 value 249.785409
## iter 30 value 245.715017
## iter 40 value 223.705840
## iter 50 value 214.157347
## iter 60 value 210.319577
## iter 70 value 207.002931
## iter 80 value 202.897376
## iter 90 value 200.026813
## iter 100 value 197.765399
## final value 197.765399
## stopped after 100 iterations
## # weights: 230
## initial value 324.181901
## iter 10 value 245.771924
## iter 20 value 226.119526
## iter 30 value 215.180957
## iter 40 value 213.064496
## iter 50 value 209.056255
## iter 60 value 204.222156
## iter 70 value 201.580831
## iter 80 value 199.371000
## iter 90 value 197.909339
## iter 100 value 196.366731
## final value 196.366731
## stopped after 100 iterations
## # weights: 246
## initial value 527.239695
## iter 10 value 288.973500
## iter 20 value 243.685745
## iter 30 value 228.302646
## iter 40 value 216.666035
## iter 50 value 212.513066
## iter 60 value 210.984059
## iter 70 value 205.767220
## iter 80 value 201.793047
## iter 90 value 199.504648
## iter 100 value 196.946834
## final value 196.946834
## stopped after 100 iterations
## # weights: 102
## initial value 380.666890
## iter 10 value 246.255116
## iter 20 value 191.093695
## iter 30 value 173.679302
## iter 40 value 165.322380
## iter 50 value 151.042086
## iter 60 value 140.104605
## iter 70 value 134.845392
## iter 80 value 131.590846
## iter 90 value 129.542195
## iter 100 value 128.430384
## final value 128.430384
## stopped after 100 iterations
```

```
## # weights: 118
## initial value 373.777627
## iter 10 value 250.438948
## iter 20 value 178.170492
## iter 30 value 175.993458
## iter 40 value 175.535592
## iter 50 value 175.472224
## iter 60 value 175.462438
## iter 70 value 175.460628
## iter 80 value 175.459844
## iter 90 value 175.459729
## final value 175.459697
## converged
## # weights: 134
## initial value 413.149479
## iter 10 value 255.819136
## iter 20 value 250.500924
## iter 30 value 182.721060
## iter 40 value 159.505456
## iter 50 value 141.126633
## iter 60 value 133.514746
## iter 70 value 132.274708
## iter 80 value 125.330409
## iter 90 value 110.015142
## iter 100 value 104.953328
## final value 104.953328
## stopped after 100 iterations
## # weights: 150
## initial value 376.159357
## iter 10 value 254.224764
## iter 20 value 234.543512
## iter 30 value 203.148139
## iter 40 value 201.695110
## iter 50 value 201.490316
## iter 60 value 201.459948
## iter 70 value 201.456053
## iter 80 value 201.455521
## final value 201.455462
## converged
## # weights: 166
## initial value 454.779868
## iter 10 value 254.988538
## iter 20 value 237.320122
## iter 30 value 167.872026
## iter 40 value 155.503531
## iter 50 value 149.967038
## iter 60 value 145.592600
## iter 70 value 143.847712
## iter 80 value 142.460363
## iter 90 value 142.180335
## iter 100 value 141.563278
## final value 141.563278
## stopped after 100 iterations
## # weights: 182
```

```
## initial value 426.348770
## iter 10 value 254.904584
## iter 20 value 240.925070
## iter 30 value 207.660925
## iter 40 value 204.171717
## iter 50 value 202.890523
## iter 60 value 192.799395
## iter 70 value 186.247667
## iter 80 value 183.587870
## iter 90 value 179.094331
## iter 100 value 178.938858
## final value 178.938858
## stopped after 100 iterations
## # weights: 198
## initial value 305.245932
## iter 10 value 248.646425
## iter 20 value 172.435467
## iter 30 value 147.808680
## iter 40 value 146.412785
## iter 50 value 145.051497
## iter 60 value 142.818391
## iter 70 value 141.298834
## iter 80 value 139.852099
## iter 90 value 138.449543
## iter 100 value 137.842092
## final value 137.842092
## stopped after 100 iterations
## # weights: 214
## initial value 359.376349
## iter 10 value 254.907404
## final value 254.906261
## converged
## # weights: 230
## initial value 404.790434
## iter 10 value 254.906284
## final value 254.906085
## converged
## # weights: 246
## initial value 559.492908
## iter 10 value 219.625364
## iter 20 value 151.498620
## iter 30 value 134.944052
## iter 40 value 132.396781
## iter 50 value 130.884668
## iter 60 value 130.057038
## iter 70 value 125.059245
## iter 80 value 115.091917
## iter 90 value 107.612228
## iter 100 value 105.167452
## final value 105.167452
## stopped after 100 iterations
## # weights: 102
## initial value 325.190741
## iter 10 value 255.060177
```

```
## iter 20 value 242.343826
## iter 30 value 182.536689
## iter 40 value 173.005456
## iter 50 value 167.427268
## iter 60 value 161.128649
## iter 70 value 146.743661
## iter 80 value 146.020799
## iter 90 value 145.908840
## iter 100 value 136.326496
## final value 136.326496
## stopped after 100 iterations
## # weights: 118
## initial value 303.085118
## iter 10 value 254.932527
## iter 20 value 210.606018
## iter 30 value 170.300921
## iter 40 value 140.787357
## iter 50 value 134.165648
## iter 60 value 125.261711
## iter 70 value 115.813343
## iter 80 value 112.640926
## iter 90 value 111.445235
## iter 100 value 109.987653
## final value 109.987653
## stopped after 100 iterations
## # weights: 134
## initial value 391.673740
## iter 10 value 253.742187
## iter 20 value 219.133588
## iter 30 value 203.137878
## iter 40 value 165.922483
## iter 50 value 153.958467
## iter 60 value 119.907801
## iter 70 value 103.732475
## iter 80 value 98.728309
## iter 90 value 88.853098
## iter 100 value 79.773838
## final value 79.773838
## stopped after 100 iterations
## # weights: 150
## initial value 357.478367
## iter 10 value 205.461849
## iter 20 value 176.552673
## iter 30 value 174.964245
## iter 40 value 158.170217
## iter 50 value 132.356577
## iter 60 value 122.010057
## iter 70 value 118.380011
## iter 80 value 113.538228
## iter 90 value 113.250881
## iter 100 value 113.120700
## final value 113.120700
## stopped after 100 iterations
## # weights: 166
```

```
## initial value 382.354274
## iter 10 value 256.717918
## iter 20 value 243.152715
## iter 30 value 182.000299
## iter 40 value 174.888307
## iter 50 value 169.586714
## iter 60 value 159.752275
## iter 70 value 140.451221
## iter 80 value 131.204803
## iter 90 value 128.481007
## iter 100 value 127.971023
## final value 127.971023
## stopped after 100 iterations
## # weights: 182
## initial value 337.587659
## iter 10 value 244.842735
## iter 20 value 176.954491
## iter 30 value 139.768038
## iter 40 value 131.653396
## iter 50 value 129.975317
## iter 60 value 122.081436
## iter 70 value 119.031683
## iter 80 value 116.130490
## iter 90 value 105.422810
## iter 100 value 97.108533
## final value 97.108533
## stopped after 100 iterations
## # weights: 198
## initial value 460.288239
## iter 10 value 256.964610
## iter 20 value 243.694372
## iter 30 value 183.870257
## iter 40 value 164.429535
## iter 50 value 162.771213
## iter 60 value 146.885977
## iter 70 value 110.148205
## iter 80 value 87.244973
## iter 90 value 77.617275
## iter 100 value 71.387975
## final value 71.387975
## stopped after 100 iterations
## # weights: 214
## initial value 320.555326
## iter 10 value 255.354077
## iter 20 value 253.154634
## iter 30 value 219.440911
## iter 40 value 163.382540
## iter 50 value 153.017966
## iter 60 value 149.748474
## iter 70 value 132.151171
## iter 80 value 115.081160
## iter 90 value 110.182962
## iter 100 value 106.574105
## final value 106.574105
```

```
## stopped after 100 iterations
## # weights: 230
## initial value 426.515322
## iter 10 value 260.796037
## iter 20 value 207.510109
## iter 30 value 174.396560
## iter 40 value 167.743273
## iter 50 value 139.215070
## iter 60 value 127.536073
## iter 70 value 123.057889
## iter 80 value 111.341058
## iter 90 value 107.267624
## iter 100 value 96.185175
## final value 96.185175
## stopped after 100 iterations
## # weights: 246
## initial value 388.855681
## iter 10 value 254.807137
## iter 20 value 166.430079
## iter 30 value 159.812591
## iter 40 value 142.957867
## iter 50 value 128.051885
## iter 60 value 125.069695
## iter 70 value 122.657000
## iter 80 value 101.691163
## iter 90 value 95.009852
## iter 100 value 88.595300
## final value 88.595300
## stopped after 100 iterations
## # weights: 102
## initial value 408.822875
## iter 10 value 261.039924
## iter 20 value 258.302013
## iter 30 value 203.418223
## iter 40 value 177.038014
## iter 50 value 174.102330
## iter 60 value 166.591521
## iter 70 value 158.509974
## iter 80 value 151.763428
## iter 90 value 148.404432
## iter 100 value 139.247549
## final value 139.247549
## stopped after 100 iterations
## # weights: 118
## initial value 272.316310
## iter 10 value 255.431874
## iter 20 value 229.230676
## iter 30 value 176.930981
## iter 40 value 169.159008
## iter 50 value 159.463326
## iter 60 value 156.042964
## iter 70 value 153.877574
## iter 80 value 139.802960
## iter 90 value 135.355520
```

```
## iter 100 value 129.609060
## final value 129.609060
## stopped after 100 iterations
## # weights: 134
## initial value 294.653863
## iter 10 value 255.121729
## iter 20 value 215.629941
## iter 30 value 188.234643
## iter 40 value 180.769674
## iter 50 value 169.944753
## iter 60 value 158.331531
## iter 70 value 150.112545
## iter 80 value 138.766448
## iter 90 value 121.855640
## iter 100 value 118.096862
## final value 118.096862
## stopped after 100 iterations
## # weights: 150
## initial value 550.099243
## iter 10 value 268.798122
## iter 20 value 257.722140
## iter 30 value 243.931996
## iter 40 value 195.567358
## iter 50 value 169.137008
## iter 60 value 151.726457
## iter 70 value 135.495850
## iter 80 value 126.026184
## iter 90 value 118.803338
## iter 100 value 113.899949
## final value 113.899949
## stopped after 100 iterations
## # weights: 166
## initial value 300.003657
## iter 10 value 257.584684
## iter 20 value 249.138093
## iter 30 value 202.687419
## iter 40 value 163.301550
## iter 50 value 152.848604
## iter 60 value 143.547978
## iter 70 value 133.921177
## iter 80 value 125.225313
## iter 90 value 115.622210
## iter 100 value 111.322905
## final value 111.322905
## stopped after 100 iterations
## # weights: 182
## initial value 293.447182
## iter 10 value 256.081442
## iter 20 value 251.529432
## iter 30 value 202.458552
## iter 40 value 176.280854
## iter 50 value 145.311336
## iter 60 value 131.732465
## iter 70 value 124.584812
```

```
## iter 80 value 122.690042
## iter 90 value 117.178438
## iter 100 value 114.926833
## final value 114.926833
## stopped after 100 iterations
## # weights: 198
## initial value 320.501256
## iter 10 value 200.679906
## iter 20 value 180.889536
## iter 30 value 165.714285
## iter 40 value 148.531873
## iter 50 value 141.634978
## iter 60 value 131.931518
## iter 70 value 122.762160
## iter 80 value 122.108480
## iter 90 value 119.124182
## iter 100 value 116.467425
## final value 116.467425
## stopped after 100 iterations
## # weights: 214
## initial value 409.741679
## iter 10 value 256.093001
## iter 20 value 254.673063
## iter 30 value 249.898357
## iter 40 value 224.765079
## iter 50 value 183.849323
## iter 60 value 152.653371
## iter 70 value 130.382650
## iter 80 value 123.217520
## iter 90 value 118.031428
## iter 100 value 113.198020
## final value 113.198020
## stopped after 100 iterations
## # weights: 230
## initial value 422.934946
## iter 10 value 257.481385
## iter 20 value 199.478606
## iter 30 value 171.208884
## iter 40 value 156.036657
## iter 50 value 143.571393
## iter 60 value 139.840672
## iter 70 value 119.506870
## iter 80 value 113.631040
## iter 90 value 110.764888
## iter 100 value 107.020095
## final value 107.020095
## stopped after 100 iterations
## # weights: 246
## initial value 276.986442
## iter 10 value 255.747353
## iter 20 value 237.525774
## iter 30 value 177.055186
## iter 40 value 170.555860
## iter 50 value 164.055279
```



```
## iter 60 value 158.331646
## iter 70 value 141.215115
## iter 80 value 127.947047
## iter 90 value 121.376050
## iter 100 value 120.087737
## final value 120.087737
## stopped after 100 iterations
## # weights: 102
## initial value 280.824874
## iter 10 value 256.508024
## iter 20 value 224.477841
## iter 30 value 201.288430
## iter 40 value 195.432156
## iter 50 value 193.913435
## iter 60 value 192.048542
## iter 70 value 190.937378
## iter 80 value 190.007770
## iter 90 value 188.333226
## iter 100 value 188.209621
## final value 188.209621
## stopped after 100 iterations
## # weights: 118
## initial value 374.467941
## iter 10 value 256.756568
## iter 20 value 251.378725
## iter 30 value 222.979634
## iter 40 value 197.130381
## iter 50 value 194.770308
## iter 60 value 193.876073
## iter 70 value 193.575679
## iter 80 value 192.640768
## iter 90 value 190.595179
## iter 100 value 189.850774
## final value 189.850774
## stopped after 100 iterations
## # weights: 134
## initial value 386.766073
## iter 10 value 257.952309
## iter 20 value 242.720593
## iter 30 value 207.031171
## iter 40 value 193.060387
## iter 50 value 189.679698
## iter 60 value 187.709899
## iter 70 value 186.865934
## iter 80 value 186.096029
## iter 90 value 184.816085
## iter 100 value 184.302565
## final value 184.302565
## stopped after 100 iterations
## # weights: 150
## initial value 481.455507
## iter 10 value 268.859295
## iter 20 value 259.369551
## iter 30 value 248.279630
```

```
## iter 40 value 210.807666
## iter 50 value 196.213417
## iter 60 value 191.102900
## iter 70 value 188.566647
## iter 80 value 186.627458
## iter 90 value 185.818212
## iter 100 value 185.342821
## final value 185.342821
## stopped after 100 iterations
## # weights: 166
## initial value 335.628905
## iter 10 value 260.491223
## iter 20 value 254.297124
## iter 30 value 237.926757
## iter 40 value 214.294951
## iter 50 value 195.545364
## iter 60 value 191.604574
## iter 70 value 188.906744
## iter 80 value 185.767776
## iter 90 value 185.238884
## iter 100 value 185.076324
## final value 185.076324
## stopped after 100 iterations
## # weights: 182
## initial value 462.771804
## iter 10 value 260.673095
## iter 20 value 246.939009
## iter 30 value 215.251606
## iter 40 value 202.961145
## iter 50 value 191.977239
## iter 60 value 185.756546
## iter 70 value 184.069721
## iter 80 value 183.844626
## iter 90 value 183.711022
## iter 100 value 183.630885
## final value 183.630885
## stopped after 100 iterations
## # weights: 198
## initial value 675.847549
## iter 10 value 301.870960
## iter 20 value 277.622072
## iter 30 value 216.992065
## iter 40 value 204.243935
## iter 50 value 199.001575
## iter 60 value 192.809517
## iter 70 value 188.086350
## iter 80 value 186.630764
## iter 90 value 185.833271
## iter 100 value 185.329503
## final value 185.329503
## stopped after 100 iterations
## # weights: 214
## initial value 510.939559
## iter 10 value 275.079564
```

```
## iter 20 value 266.568743
## iter 30 value 233.383244
## iter 40 value 214.154838
## iter 50 value 201.038940
## iter 60 value 193.034670
## iter 70 value 189.850141
## iter 80 value 187.468114
## iter 90 value 186.231540
## iter 100 value 184.959680
## final value 184.959680
## stopped after 100 iterations
## # weights: 230
## initial value 368.500971
## iter 10 value 263.604519
## iter 20 value 257.841782
## iter 30 value 250.542810
## iter 40 value 222.681605
## iter 50 value 209.444908
## iter 60 value 201.974682
## iter 70 value 197.666480
## iter 80 value 191.166716
## iter 90 value 188.542755
## iter 100 value 186.557008
## final value 186.557008
## stopped after 100 iterations
## # weights: 246
## initial value 403.416729
## iter 10 value 273.134887
## iter 20 value 264.250905
## iter 30 value 249.912444
## iter 40 value 212.000813
## iter 50 value 202.557372
## iter 60 value 195.835108
## iter 70 value 191.938039
## iter 80 value 189.043276
## iter 90 value 187.085407
## iter 100 value 185.912468
## final value 185.912468
## stopped after 100 iterations
## # weights: 102
## initial value 409.795879
## iter 10 value 246.470994
## iter 20 value 223.756836
## iter 30 value 164.431891
## iter 40 value 148.748801
## iter 50 value 147.963275
## iter 60 value 141.602667
## iter 70 value 139.861285
## iter 80 value 138.657169
## iter 90 value 138.102906
## iter 100 value 136.132299
## final value 136.132299
## stopped after 100 iterations
## # weights: 118
```

```
## initial value 412.516880
## iter 10 value 245.685406
## final value 245.680226
## converged
## # weights: 134
## initial value 476.523476
## iter 10 value 245.680517
## final value 245.680228
## converged
## # weights: 150
## initial value 444.624988
## iter 10 value 248.666585
## iter 20 value 245.680225
## final value 245.680223
## converged
## # weights: 166
## initial value 318.871958
## iter 10 value 245.680103
## iter 20 value 232.063826
## iter 30 value 174.625657
## iter 40 value 156.058770
## iter 50 value 148.871701
## iter 60 value 143.952247
## iter 70 value 142.060041
## iter 80 value 140.728929
## iter 90 value 136.398166
## iter 100 value 135.242322
## final value 135.242322
## stopped after 100 iterations
## # weights: 182
## initial value 387.938044
## iter 10 value 246.077624
## iter 20 value 245.680223
## final value 245.680215
## converged
## # weights: 198
## initial value 417.064908
## iter 10 value 245.680246
## iter 10 value 245.680243
## iter 10 value 245.680243
## final value 245.680243
## converged
## # weights: 214
## initial value 409.014839
## iter 10 value 247.969365
## iter 20 value 245.680228
## iter 20 value 245.680227
## iter 20 value 245.680227
## final value 245.680227
## converged
## # weights: 230
## initial value 431.873741
## iter 10 value 246.761207
## iter 20 value 237.011493
```

```
## iter 30 value 180.252837
## iter 40 value 161.636536
## iter 50 value 142.266973
## iter 60 value 139.385387
## iter 70 value 136.508625
## iter 80 value 134.896379
## iter 90 value 134.207437
## iter 100 value 132.377717
## final value 132.377717
## stopped after 100 iterations
## # weights: 246
## initial value 497.078101
## iter 10 value 245.781786
## final value 245.680225
## converged
## # weights: 102
## initial value 316.744944
## iter 10 value 245.982536
## iter 20 value 245.577574
## iter 30 value 238.123260
## iter 40 value 176.247838
## iter 50 value 141.730315
## iter 60 value 131.571609
## iter 70 value 129.456936
## iter 80 value 127.770296
## iter 90 value 119.331617
## iter 100 value 116.283265
## final value 116.283265
## stopped after 100 iterations
## # weights: 118
## initial value 295.553619
## iter 10 value 245.805392
## iter 20 value 244.410124
## iter 30 value 216.476643
## iter 40 value 159.543004
## iter 50 value 134.340186
## iter 60 value 123.975483
## iter 70 value 102.173103
## iter 80 value 95.480006
## iter 90 value 86.746130
## iter 100 value 76.161145
## final value 76.161145
## stopped after 100 iterations
## # weights: 134
## initial value 395.299183
## iter 10 value 241.227901
## iter 20 value 213.538949
## iter 30 value 171.585769
## iter 40 value 146.513400
## iter 50 value 122.528057
## iter 60 value 94.635194
## iter 70 value 81.269180
## iter 80 value 77.034674
## iter 90 value 74.080776
```

```
## iter 100 value 72.414628
## final value 72.414628
## stopped after 100 iterations
## # weights: 150
## initial value 274.221815
## iter 10 value 245.870505
## iter 20 value 227.236819
## iter 30 value 203.509497
## iter 40 value 202.204837
## iter 50 value 200.682777
## iter 60 value 184.031138
## iter 70 value 154.991814
## iter 80 value 111.581861
## iter 90 value 103.421463
## iter 100 value 101.618569
## final value 101.618569
## stopped after 100 iterations
## # weights: 166
## initial value 324.235597
## iter 10 value 222.670735
## iter 20 value 183.853308
## iter 30 value 163.519592
## iter 40 value 148.611986
## iter 50 value 129.182129
## iter 60 value 125.630128
## iter 70 value 119.757450
## iter 80 value 117.939241
## iter 90 value 112.515652
## iter 100 value 107.267719
## final value 107.267719
## stopped after 100 iterations
## # weights: 182
## initial value 572.122050
## iter 10 value 250.327002
## iter 20 value 241.577139
## iter 30 value 181.863785
## iter 40 value 168.844715
## iter 50 value 158.970545
## iter 60 value 136.265960
## iter 70 value 118.101277
## iter 80 value 106.008482
## iter 90 value 100.276613
## iter 100 value 95.091878
## final value 95.091878
## stopped after 100 iterations
## # weights: 198
## initial value 431.290257
## iter 10 value 218.904944
## iter 20 value 172.576411
## iter 30 value 167.966860
## iter 40 value 147.797449
## iter 50 value 133.955274
## iter 60 value 130.539639
## iter 70 value 124.682794
```

```
## iter 80 value 101.216640
## iter 90 value 88.686121
## iter 100 value 84.137227
## final value 84.137227
## stopped after 100 iterations
## # weights: 214
## initial value 331.436870
## iter 10 value 245.035121
## iter 20 value 231.289771
## iter 30 value 216.275522
## iter 40 value 213.759990
## iter 50 value 183.284283
## iter 60 value 162.187843
## iter 70 value 155.142794
## iter 80 value 124.780878
## iter 90 value 116.494285
## iter 100 value 96.040345
## final value 96.040345
## stopped after 100 iterations
## # weights: 230
## initial value 436.316725
## iter 10 value 251.445921
## iter 20 value 246.283367
## iter 30 value 245.008427
## iter 40 value 226.730099
## iter 50 value 160.418083
## iter 60 value 141.503880
## iter 70 value 140.256085
## iter 80 value 122.045895
## iter 90 value 109.862207
## iter 100 value 107.068839
## final value 107.068839
## stopped after 100 iterations
## # weights: 246
## initial value 463.339984
## iter 10 value 247.390642
## iter 20 value 183.054638
## iter 30 value 154.150411
## iter 40 value 147.331520
## iter 50 value 146.550554
## iter 60 value 144.992750
## iter 70 value 136.058363
## iter 80 value 114.948322
## iter 90 value 98.898721
## iter 100 value 92.667558
## final value 92.667558
## stopped after 100 iterations
## # weights: 102
## initial value 430.754157
## iter 10 value 246.764936
## iter 20 value 245.564483
## iter 30 value 241.713977
## iter 40 value 199.513115
## iter 50 value 172.906897
```

```
## iter 60 value 156.941932
## iter 70 value 144.854032
## iter 80 value 141.924008
## iter 90 value 137.055854
## iter 100 value 126.420291
## final value 126.420291
## stopped after 100 iterations
## # weights: 118
## initial value 384.254699
## iter 10 value 244.446977
## iter 20 value 230.024195
## iter 30 value 186.430566
## iter 40 value 163.615925
## iter 50 value 157.192275
## iter 60 value 143.879751
## iter 70 value 138.761433
## iter 80 value 136.311865
## iter 90 value 131.243649
## iter 100 value 119.937353
## final value 119.937353
## stopped after 100 iterations
## # weights: 134
## initial value 392.903332
## iter 10 value 246.792823
## iter 20 value 197.318769
## iter 30 value 177.672835
## iter 40 value 173.302405
## iter 50 value 167.158982
## iter 60 value 150.599634
## iter 70 value 137.545043
## iter 80 value 131.039504
## iter 90 value 130.171366
## iter 100 value 125.123596
## final value 125.123596
## stopped after 100 iterations
## # weights: 150
## initial value 338.898009
## iter 10 value 251.479123
## iter 20 value 248.917727
## iter 30 value 205.184589
## iter 40 value 185.134176
## iter 50 value 164.712815
## iter 60 value 149.271961
## iter 70 value 137.801054
## iter 80 value 132.629429
## iter 90 value 125.548087
## iter 100 value 121.384888
## final value 121.384888
## stopped after 100 iterations
## # weights: 166
## initial value 455.621050
## iter 10 value 246.384587
## iter 20 value 245.742102
## iter 30 value 231.803694
```



```
## iter 40 value 181.468135
## iter 50 value 167.568703
## iter 60 value 155.990965
## iter 70 value 140.990725
## iter 80 value 135.991577
## iter 90 value 129.707381
## iter 100 value 125.866834
## final value 125.866834
## stopped after 100 iterations
## # weights: 182
## initial value 408.783770
## iter 10 value 246.550307
## iter 20 value 243.904943
## iter 30 value 196.912647
## iter 40 value 188.734326
## iter 50 value 170.729949
## iter 60 value 154.081237
## iter 70 value 141.226929
## iter 80 value 130.617797
## iter 90 value 128.913424
## iter 100 value 123.539944
## final value 123.539944
## stopped after 100 iterations
## # weights: 198
## initial value 428.643060
## iter 10 value 227.437760
## iter 20 value 195.820900
## iter 30 value 181.667050
## iter 40 value 175.737616
## iter 50 value 147.281640
## iter 60 value 131.947372
## iter 70 value 128.892969
## iter 80 value 127.025791
## iter 90 value 124.369572
## iter 100 value 120.854243
## final value 120.854243
## stopped after 100 iterations
## # weights: 214
## initial value 367.037182
## iter 10 value 250.104482
## iter 20 value 246.322869
## iter 30 value 207.051651
## iter 40 value 188.227416
## iter 50 value 175.256595
## iter 60 value 161.671439
## iter 70 value 158.064683
## iter 80 value 148.653443
## iter 90 value 145.380479
## iter 100 value 136.808771
## final value 136.808771
## stopped after 100 iterations
## # weights: 230
## initial value 295.601920
## iter 10 value 248.869105
```

```
## iter 20 value 244.970912
## iter 30 value 234.072485
## iter 40 value 185.831592
## iter 50 value 161.688584
## iter 60 value 146.156533
## iter 70 value 143.414307
## iter 80 value 134.762292
## iter 90 value 130.580630
## iter 100 value 127.509223
## final value 127.509223
## stopped after 100 iterations
## # weights: 246
## initial value 351.677562
## iter 10 value 250.334887
## iter 20 value 209.546138
## iter 30 value 187.891980
## iter 40 value 176.552592
## iter 50 value 161.297143
## iter 60 value 154.058984
## iter 70 value 147.053717
## iter 80 value 137.034932
## iter 90 value 125.581608
## iter 100 value 118.088603
## final value 118.088603
## stopped after 100 iterations
## # weights: 102
## initial value 401.636548
## iter 10 value 247.545270
## iter 20 value 246.257810
## iter 30 value 239.477001
## iter 40 value 220.123553
## iter 50 value 210.682280
## iter 60 value 205.496106
## iter 70 value 200.051103
## iter 80 value 198.843468
## iter 90 value 198.137203
## iter 100 value 196.293112
## final value 196.293112
## stopped after 100 iterations
## # weights: 118
## initial value 388.295762
## iter 10 value 247.701571
## iter 20 value 239.555153
## iter 30 value 226.643994
## iter 40 value 216.561547
## iter 50 value 208.299376
## iter 60 value 204.935068
## iter 70 value 199.217363
## iter 80 value 197.532297
## iter 90 value 196.211438
## iter 100 value 195.935064
## final value 195.935064
## stopped after 100 iterations
## # weights: 134
```

```
## initial value 411.557814
## iter 10 value 259.231093
## iter 20 value 246.727437
## iter 30 value 214.190742
## iter 40 value 203.130883
## iter 50 value 197.664256
## iter 60 value 195.528377
## iter 70 value 194.636961
## iter 80 value 194.216901
## iter 90 value 193.992769
## iter 100 value 193.765885
## final value 193.765885
## stopped after 100 iterations
## # weights: 150
## initial value 316.333046
## iter 10 value 251.754300
## iter 20 value 246.947319
## iter 30 value 241.263108
## iter 40 value 220.845926
## iter 50 value 208.273532
## iter 60 value 202.825532
## iter 70 value 198.032084
## iter 80 value 194.814644
## iter 90 value 194.094565
## iter 100 value 193.741081
## final value 193.741081
## stopped after 100 iterations
## # weights: 166
## initial value 480.310448
## iter 10 value 262.507397
## iter 20 value 240.815483
## iter 30 value 224.228547
## iter 40 value 207.491220
## iter 50 value 201.643368
## iter 60 value 197.261798
## iter 70 value 194.358163
## iter 80 value 193.190166
## iter 90 value 193.010303
## iter 100 value 192.934706
## final value 192.934706
## stopped after 100 iterations
## # weights: 182
## initial value 344.652471
## iter 10 value 252.103322
## iter 20 value 234.813366
## iter 30 value 218.225231
## iter 40 value 211.078130
## iter 50 value 205.331248
## iter 60 value 200.169972
## iter 70 value 197.727366
## iter 80 value 194.858000
## iter 90 value 193.552721
## iter 100 value 192.472641
## final value 192.472641
```

```
## stopped after 100 iterations
## # weights: 198
## initial value 328.332485
## iter 10 value 254.129327
## iter 20 value 244.192646
## iter 30 value 232.459888
## iter 40 value 212.752149
## iter 50 value 206.758248
## iter 60 value 199.591821
## iter 70 value 195.609054
## iter 80 value 194.656113
## iter 90 value 193.368800
## iter 100 value 192.151410
## final value 192.151410
## stopped after 100 iterations
## # weights: 214
## initial value 354.959429
## iter 10 value 278.946584
## iter 20 value 254.735047
## iter 30 value 232.549789
## iter 40 value 213.776128
## iter 50 value 204.627415
## iter 60 value 198.769535
## iter 70 value 195.550135
## iter 80 value 192.982611
## iter 90 value 191.782724
## iter 100 value 191.367934
## final value 191.367934
## stopped after 100 iterations
## # weights: 230
## initial value 437.045984
## iter 10 value 253.776671
## iter 20 value 244.111896
## iter 30 value 217.445356
## iter 40 value 206.905082
## iter 50 value 200.998427
## iter 60 value 197.976169
## iter 70 value 194.740059
## iter 80 value 193.232139
## iter 90 value 192.512571
## iter 100 value 192.074500
## final value 192.074500
## stopped after 100 iterations
## # weights: 246
## initial value 364.242551
## iter 10 value 280.783520
## iter 20 value 250.006444
## iter 30 value 236.124710
## iter 40 value 219.270586
## iter 50 value 207.571467
## iter 60 value 199.280258
## iter 70 value 194.272721
## iter 80 value 191.978964
## iter 90 value 191.408872
```

```
## iter 100 value 191.207702
## final value 191.207702
## stopped after 100 iterations
## # weights: 102
## initial value 360.618778
## iter 10 value 249.129687
## iter 20 value 248.514600
## iter 30 value 235.723592
## iter 40 value 165.705694
## iter 50 value 153.887858
## iter 60 value 152.666384
## iter 70 value 150.376437
## iter 80 value 148.249812
## iter 90 value 143.240944
## iter 100 value 139.984724
## final value 139.984724
## stopped after 100 iterations
## # weights: 118
## initial value 451.197739
## iter 10 value 249.156034
## final value 249.129743
## converged
## # weights: 134
## initial value 324.278866
## iter 10 value 249.129529
## iter 20 value 239.587401
## iter 30 value 179.941068
## iter 40 value 155.734341
## iter 50 value 126.864795
## iter 60 value 116.959142
## iter 70 value 113.330975
## iter 80 value 111.055211
## iter 90 value 110.345327
## iter 100 value 109.997994
## final value 109.997994
## stopped after 100 iterations
## # weights: 150
## initial value 386.001341
## iter 10 value 232.007781
## iter 20 value 153.558922
## iter 30 value 137.978322
## iter 40 value 100.586834
## iter 50 value 86.530168
## iter 60 value 78.311907
## iter 70 value 75.247736
## iter 80 value 74.020928
## iter 90 value 73.384499
## iter 100 value 73.293474
## final value 73.293474
## stopped after 100 iterations
## # weights: 166
## initial value 291.425908
## iter 10 value 243.079489
## iter 20 value 168.144714
```

```
## iter 30 value 145.641325
## iter 40 value 139.743571
## iter 50 value 129.493883
## iter 60 value 124.964715
## iter 70 value 121.271399
## iter 80 value 118.995459
## iter 90 value 118.583661
## iter 100 value 117.871319
## final value 117.871319
## stopped after 100 iterations
## # weights: 182
## initial value 285.913941
## iter 10 value 204.085468
## iter 20 value 160.183743
## iter 30 value 135.699335
## iter 40 value 103.408787
## iter 50 value 97.301272
## iter 60 value 94.767810
## iter 70 value 92.973083
## iter 80 value 92.859790
## iter 90 value 92.854323
## iter 100 value 92.853599
## final value 92.853599
## stopped after 100 iterations
## # weights: 198
## initial value 344.843323
## iter 10 value 211.091638
## iter 20 value 156.926651
## iter 30 value 147.715954
## iter 40 value 142.434993
## iter 50 value 135.935114
## iter 60 value 129.740401
## iter 70 value 128.808017
## iter 80 value 120.881539
## iter 90 value 116.445446
## iter 100 value 114.661563
## final value 114.661563
## stopped after 100 iterations
## # weights: 214
## initial value 433.302570
## iter 10 value 249.186462
## final value 249.129743
## converged
## # weights: 230
## initial value 460.797453
## iter 10 value 250.617541
## iter 20 value 245.405394
## iter 30 value 198.036619
## iter 40 value 129.820576
## iter 50 value 115.178102
## iter 60 value 102.074587
## iter 70 value 94.038205
## iter 80 value 93.128673
## iter 90 value 93.099321
```

```
## iter 100 value 93.095232
## final value 93.095232
## stopped after 100 iterations
## # weights: 246
## initial value 600.320679
## iter 10 value 252.351277
## iter 20 value 247.771941
## iter 30 value 209.310594
## iter 40 value 172.025064
## iter 50 value 158.908007
## iter 60 value 155.269730
## iter 70 value 152.666747
## iter 80 value 152.416565
## iter 90 value 152.360561
## iter 100 value 152.026076
## final value 152.026076
## stopped after 100 iterations
## # weights: 102
## initial value 402.714737
## iter 10 value 233.015899
## iter 20 value 166.786876
## iter 30 value 160.222966
## iter 40 value 151.212989
## iter 50 value 147.735354
## iter 60 value 126.252499
## iter 70 value 102.676179
## iter 80 value 91.158112
## iter 90 value 77.228724
## iter 100 value 70.560950
## final value 70.560950
## stopped after 100 iterations
## # weights: 118
## initial value 271.161347
## iter 10 value 249.316800
## iter 20 value 246.807569
## iter 30 value 192.663016
## iter 40 value 167.815611
## iter 50 value 161.894334
## iter 60 value 145.041858
## iter 70 value 103.819870
## iter 80 value 90.515220
## iter 90 value 77.420994
## iter 100 value 70.391774
## final value 70.391774
## stopped after 100 iterations
## # weights: 134
## initial value 393.474427
## iter 10 value 249.326123
## iter 20 value 248.782833
## iter 30 value 193.237620
## iter 40 value 164.271611
## iter 50 value 161.843615
## iter 60 value 159.685927
## iter 70 value 140.943215
```

```
## iter 80 value 126.040436
## iter 90 value 121.724550
## iter 100 value 116.625157
## final value 116.625157
## stopped after 100 iterations
## # weights: 150
## initial value 303.195910
## iter 10 value 249.356102
## iter 20 value 247.419777
## iter 30 value 203.988906
## iter 40 value 156.036386
## iter 50 value 132.063558
## iter 60 value 125.904823
## iter 70 value 110.497348
## iter 80 value 94.300684
## iter 90 value 78.712595
## iter 100 value 67.334331
## final value 67.334331
## stopped after 100 iterations
## # weights: 166
## initial value 419.499086
## iter 10 value 245.935796
## iter 20 value 177.457174
## iter 30 value 169.895916
## iter 40 value 160.016777
## iter 50 value 137.423196
## iter 60 value 109.626307
## iter 70 value 103.594488
## iter 80 value 102.396165
## iter 90 value 93.093397
## iter 100 value 81.382635
## final value 81.382635
## stopped after 100 iterations
## # weights: 182
## initial value 287.564933
## iter 10 value 249.246341
## iter 20 value 246.720537
## iter 30 value 215.626658
## iter 40 value 181.581701
## iter 50 value 146.289007
## iter 60 value 122.863059
## iter 70 value 105.323802
## iter 80 value 97.260660
## iter 90 value 81.021547
## iter 100 value 58.594880
## final value 58.594880
## stopped after 100 iterations
## # weights: 198
## initial value 323.787710
## iter 10 value 248.672163
## iter 20 value 199.189599
## iter 30 value 162.476237
## iter 40 value 131.008021
## iter 50 value 121.719703
```



```
## iter 60 value 120.889593
## iter 70 value 120.460276
## iter 80 value 109.887355
## iter 90 value 99.665626
## iter 100 value 94.134058
## final value 94.134058
## stopped after 100 iterations
## # weights: 214
## initial value 520.757087
## iter 10 value 250.994725
## iter 20 value 249.331372
## iter 30 value 248.669681
## iter 40 value 221.264625
## iter 50 value 166.774935
## iter 60 value 142.071229
## iter 70 value 114.413375
## iter 80 value 97.310552
## iter 90 value 94.209099
## iter 100 value 89.579001
## final value 89.579001
## stopped after 100 iterations
## # weights: 230
## initial value 269.423521
## iter 10 value 249.232355
## iter 20 value 240.384528
## iter 30 value 170.527217
## iter 40 value 148.406080
## iter 50 value 130.533226
## iter 60 value 121.641523
## iter 70 value 117.165999
## iter 80 value 107.681891
## iter 90 value 105.234472
## iter 100 value 99.558521
## final value 99.558521
## stopped after 100 iterations
## # weights: 246
## initial value 359.097838
## iter 10 value 244.999780
## iter 20 value 159.179214
## iter 30 value 151.626852
## iter 40 value 140.305576
## iter 50 value 127.641613
## iter 60 value 104.400572
## iter 70 value 95.442370
## iter 80 value 93.599753
## iter 90 value 93.312594
## iter 100 value 90.617098
## final value 90.617098
## stopped after 100 iterations
## # weights: 102
## initial value 383.754479
## iter 10 value 250.967130
## iter 20 value 248.153411
## iter 30 value 202.705510
```

```
## iter 40 value 186.914301
## iter 50 value 177.207633
## iter 60 value 171.457613
## iter 70 value 164.305227
## iter 80 value 134.929954
## iter 90 value 117.530264
## iter 100 value 115.395408
## final value 115.395408
## stopped after 100 iterations
## # weights: 118
## initial value 332.975830
## iter 10 value 241.958106
## iter 20 value 182.575541
## iter 30 value 173.296054
## iter 40 value 171.033363
## iter 50 value 159.508454
## iter 60 value 133.926535
## iter 70 value 127.746347
## iter 80 value 126.933149
## iter 90 value 121.213027
## iter 100 value 115.553560
## final value 115.553560
## stopped after 100 iterations
## # weights: 134
## initial value 391.499988
## iter 10 value 249.322947
## iter 20 value 249.019362
## iter 30 value 233.439318
## iter 40 value 163.284710
## iter 50 value 150.603075
## iter 60 value 135.074048
## iter 70 value 127.087395
## iter 80 value 125.761873
## iter 90 value 125.235924
## iter 100 value 122.699322
## final value 122.699322
## stopped after 100 iterations
## # weights: 150
## initial value 355.257481
## iter 10 value 250.928529
## iter 20 value 188.972361
## iter 30 value 170.065928
## iter 40 value 156.037368
## iter 50 value 135.027169
## iter 60 value 124.419754
## iter 70 value 123.731986
## iter 80 value 123.374725
## iter 90 value 120.471922
## iter 100 value 116.201561
## final value 116.201561
## stopped after 100 iterations
## # weights: 166
## initial value 323.458923
## iter 10 value 245.234806
```

```
## iter 20 value 210.990111
## iter 30 value 182.952438
## iter 40 value 154.194533
## iter 50 value 125.632342
## iter 60 value 122.451250
## iter 70 value 114.903781
## iter 80 value 112.979427
## iter 90 value 109.929686
## iter 100 value 107.014276
## final value 107.014276
## stopped after 100 iterations
## # weights: 182
## initial value 383.975838
## iter 10 value 250.911817
## iter 20 value 230.150945
## iter 30 value 174.966501
## iter 40 value 170.693340
## iter 50 value 169.760028
## iter 60 value 164.658706
## iter 70 value 156.255638
## iter 80 value 142.475714
## iter 90 value 126.551771
## iter 100 value 114.697699
## final value 114.697699
## stopped after 100 iterations
## # weights: 198
## initial value 300.988430
## iter 10 value 249.727767
## iter 20 value 240.621431
## iter 30 value 173.517958
## iter 40 value 159.086739
## iter 50 value 148.457732
## iter 60 value 132.187766
## iter 70 value 126.661064
## iter 80 value 119.648176
## iter 90 value 113.569344
## iter 100 value 109.895613
## final value 109.895613
## stopped after 100 iterations
## # weights: 214
## initial value 360.917201
## iter 10 value 250.674243
## iter 20 value 248.190918
## iter 30 value 208.445978
## iter 40 value 169.928184
## iter 50 value 161.470005
## iter 60 value 156.065592
## iter 70 value 140.661336
## iter 80 value 131.819921
## iter 90 value 122.065262
## iter 100 value 115.274473
## final value 115.274473
## stopped after 100 iterations
## # weights: 230
```

```
## initial value 326.131619
## iter 10 value 228.038297
## iter 20 value 184.564157
## iter 30 value 172.816542
## iter 40 value 163.424416
## iter 50 value 144.106424
## iter 60 value 135.279244
## iter 70 value 121.725831
## iter 80 value 115.664589
## iter 90 value 112.541980
## iter 100 value 109.691732
## final value 109.691732
## stopped after 100 iterations
## # weights: 246
## initial value 306.170125
## iter 10 value 254.693463
## iter 20 value 239.539395
## iter 30 value 200.179665
## iter 40 value 174.644217
## iter 50 value 150.467870
## iter 60 value 129.927411
## iter 70 value 117.715620
## iter 80 value 115.869265
## iter 90 value 108.807490
## iter 100 value 107.143463
## final value 107.143463
## stopped after 100 iterations
## # weights: 102
## initial value 393.292715
## iter 10 value 282.689500
## iter 20 value 258.939631
## iter 30 value 227.502613
## iter 40 value 206.789434
## iter 50 value 196.029657
## iter 60 value 190.190102
## iter 70 value 188.521998
## iter 80 value 188.409835
## iter 90 value 188.379922
## iter 100 value 188.262963
## final value 188.262963
## stopped after 100 iterations
## # weights: 118
## initial value 316.732615
## iter 10 value 253.432665
## iter 20 value 233.472830
## iter 30 value 213.875770
## iter 40 value 208.706245
## iter 50 value 203.563715
## iter 60 value 196.467112
## iter 70 value 187.992533
## iter 80 value 185.511129
## iter 90 value 184.290139
## iter 100 value 183.720179
## final value 183.720179
```

```
## stopped after 100 iterations
## # weights: 134
## initial value 410.888074
## iter 10 value 251.855944
## iter 20 value 250.232544
## iter 30 value 233.949699
## iter 40 value 207.300187
## iter 50 value 199.836973
## iter 60 value 192.686270
## iter 70 value 191.085303
## iter 80 value 186.312717
## iter 90 value 184.135930
## iter 100 value 183.928761
## final value 183.928761
## stopped after 100 iterations
## # weights: 150
## initial value 519.331839
## iter 10 value 261.099475
## iter 20 value 252.389129
## iter 30 value 221.404509
## iter 40 value 207.008106
## iter 50 value 197.600372
## iter 60 value 188.363591
## iter 70 value 184.706905
## iter 80 value 183.630927
## iter 90 value 182.439058
## iter 100 value 180.930165
## final value 180.930165
## stopped after 100 iterations
## # weights: 166
## initial value 479.479947
## iter 10 value 264.402476
## iter 20 value 235.415415
## iter 30 value 209.854902
## iter 40 value 198.085577
## iter 50 value 193.682836
## iter 60 value 190.606716
## iter 70 value 185.543017
## iter 80 value 183.288806
## iter 90 value 182.801603
## iter 100 value 182.535166
## final value 182.535166
## stopped after 100 iterations
## # weights: 182
## initial value 534.797663
## iter 10 value 275.362601
## iter 20 value 258.229673
## iter 30 value 216.555628
## iter 40 value 204.516292
## iter 50 value 198.933186
## iter 60 value 193.201947
## iter 70 value 187.823813
## iter 80 value 184.012137
## iter 90 value 182.814191
```

```
## iter 100 value 182.094077
## final value 182.094077
## stopped after 100 iterations
## # weights: 198
## initial value 460.669505
## iter 10 value 255.553484
## iter 20 value 242.569784
## iter 30 value 223.007533
## iter 40 value 196.148543
## iter 50 value 185.305766
## iter 60 value 183.067958
## iter 70 value 180.574814
## iter 80 value 179.482456
## iter 90 value 179.221520
## iter 100 value 179.152116
## final value 179.152116
## stopped after 100 iterations
## # weights: 214
## initial value 369.129302
## iter 10 value 270.121816
## iter 20 value 253.349221
## iter 30 value 238.668839
## iter 40 value 215.013752
## iter 50 value 199.881709
## iter 60 value 193.169528
## iter 70 value 187.315163
## iter 80 value 184.572022
## iter 90 value 181.880737
## iter 100 value 180.186541
## final value 180.186541
## stopped after 100 iterations
## # weights: 230
## initial value 483.754261
## iter 10 value 260.553399
## iter 20 value 252.783939
## iter 30 value 228.693967
## iter 40 value 207.492446
## iter 50 value 192.877676
## iter 60 value 188.098363
## iter 70 value 184.653884
## iter 80 value 183.069157
## iter 90 value 181.760972
## iter 100 value 181.169145
## final value 181.169145
## stopped after 100 iterations
## # weights: 246
## initial value 661.894372
## iter 10 value 305.949460
## iter 20 value 266.238058
## iter 30 value 253.059232
## iter 40 value 232.939951
## iter 50 value 214.408176
## iter 60 value 203.610561
## iter 70 value 198.693369
```

```
## iter 80 value 187.640384
## iter 90 value 183.452062
## iter 100 value 181.061233
## final value 181.061233
## stopped after 100 iterations
## # weights: 102
## initial value 271.730555
## iter 10 value 245.898392
## iter 20 value 231.512314
## iter 30 value 223.258337
## iter 40 value 220.322097
## iter 50 value 218.723604
## iter 60 value 218.619914
## iter 70 value 218.530649
## iter 80 value 216.407016
## iter 90 value 204.700694
## iter 100 value 195.822840
## final value 195.822840
## stopped after 100 iterations
## # weights: 118
## initial value 325.381283
## iter 10 value 245.908284
## final value 245.900518
## converged
## # weights: 134
## initial value 313.242684
## iter 10 value 239.703507
## iter 20 value 180.475562
## iter 30 value 167.898220
## iter 40 value 163.565402
## iter 50 value 134.117544
## iter 60 value 127.290039
## iter 70 value 124.930996
## iter 80 value 113.974388
## iter 90 value 112.493815
## iter 100 value 107.994854
## final value 107.994854
## stopped after 100 iterations
## # weights: 150
## initial value 457.518550
## iter 10 value 245.908385
## final value 245.900521
## converged
## # weights: 166
## initial value 324.982326
## iter 10 value 246.480639
## final value 245.900518
## converged
## # weights: 182
## initial value 517.332830
## iter 10 value 245.801763
## iter 20 value 242.123360
## iter 30 value 182.373821
## iter 40 value 181.917263
```

```
## final value 181.916522
## converged
## # weights: 198
## initial value 387.250452
## iter 10 value 244.027809
## iter 20 value 177.207713
## iter 30 value 145.084329
## iter 40 value 141.467363
## iter 50 value 139.047788
## iter 60 value 138.467716
## iter 70 value 137.415293
## iter 80 value 136.857258
## iter 90 value 136.169010
## iter 100 value 136.080750
## final value 136.080750
## stopped after 100 iterations
## # weights: 214
## initial value 431.880114
## iter 10 value 231.989929
## iter 20 value 174.448663
## iter 30 value 165.397969
## iter 40 value 143.659432
## iter 50 value 140.806076
## iter 60 value 129.622967
## iter 70 value 114.973928
## iter 80 value 110.253748
## iter 90 value 108.288174
## iter 100 value 107.605336
## final value 107.605336
## stopped after 100 iterations
## # weights: 230
## initial value 321.041297
## iter 10 value 245.900548
## final value 245.900511
## converged
## # weights: 246
## initial value 411.057258
## iter 10 value 245.071432
## iter 20 value 226.692441
## iter 30 value 222.218341
## iter 40 value 219.661949
## iter 50 value 184.713318
## iter 60 value 134.203000
## iter 70 value 132.268221
## iter 80 value 129.288233
## iter 90 value 128.041064
## iter 100 value 126.579174
## final value 126.579174
## stopped after 100 iterations
## # weights: 102
## initial value 484.558204
## iter 10 value 245.597385
## iter 20 value 190.519353
## iter 30 value 173.602619
```



```
## iter 40 value 171.339207
## iter 50 value 164.670013
## iter 60 value 154.904981
## iter 70 value 135.694655
## iter 80 value 122.931585
## iter 90 value 119.994063
## iter 100 value 103.034944
## final value 103.034944
## stopped after 100 iterations
## # weights: 118
## initial value 334.725611
## iter 10 value 246.145049
## iter 20 value 245.623487
## iter 30 value 223.936196
## iter 40 value 205.406729
## iter 50 value 173.687777
## iter 60 value 127.521003
## iter 70 value 100.808258
## iter 80 value 92.532925
## iter 90 value 91.013436
## iter 100 value 88.528484
## final value 88.528484
## stopped after 100 iterations
## # weights: 134
## initial value 368.069003
## iter 10 value 246.107734
## iter 20 value 245.703929
## iter 30 value 226.849251
## iter 40 value 174.731788
## iter 50 value 159.634466
## iter 60 value 145.504360
## iter 70 value 142.298933
## iter 80 value 136.871740
## iter 90 value 134.345345
## iter 100 value 134.202126
## final value 134.202126
## stopped after 100 iterations
## # weights: 150
## initial value 391.448920
## iter 10 value 246.274417
## iter 20 value 245.849037
## iter 30 value 238.036578
## iter 40 value 162.997759
## iter 50 value 149.491873
## iter 60 value 144.018505
## iter 70 value 140.860699
## iter 80 value 137.557721
## iter 90 value 128.489660
## iter 100 value 116.944733
## final value 116.944733
## stopped after 100 iterations
## # weights: 166
## initial value 355.949666
## iter 10 value 228.832524
```

```
## iter 20 value 182.253413
## iter 30 value 180.730291
## iter 40 value 164.302589
## iter 50 value 138.610317
## iter 60 value 127.737668
## iter 70 value 117.319401
## iter 80 value 115.503408
## iter 90 value 106.535497
## iter 100 value 92.256503
## final value 92.256503
## stopped after 100 iterations
## # weights: 182
## initial value 445.351350
## iter 10 value 251.317837
## iter 20 value 182.598701
## iter 30 value 159.686867
## iter 40 value 136.627302
## iter 50 value 122.621269
## iter 60 value 119.624398
## iter 70 value 118.026062
## iter 80 value 108.315879
## iter 90 value 98.643346
## iter 100 value 94.546263
## final value 94.546263
## stopped after 100 iterations
## # weights: 198
## initial value 324.417868
## iter 10 value 245.959460
## iter 20 value 235.482115
## iter 30 value 226.157583
## iter 40 value 211.157081
## iter 50 value 158.235467
## iter 60 value 119.018493
## iter 70 value 106.687006
## iter 80 value 100.052436
## iter 90 value 89.101868
## iter 100 value 84.650816
## final value 84.650816
## stopped after 100 iterations
## # weights: 214
## initial value 266.072609
## iter 10 value 246.251079
## iter 20 value 245.354678
## iter 30 value 239.372056
## iter 40 value 204.654860
## iter 50 value 169.527446
## iter 60 value 140.113454
## iter 70 value 134.206413
## iter 80 value 124.335851
## iter 90 value 115.525165
## iter 100 value 111.681093
## final value 111.681093
## stopped after 100 iterations
## # weights: 230
```

```
## initial value 433.958360
## iter 10 value 246.579238
## iter 20 value 180.309228
## iter 30 value 155.002291
## iter 40 value 149.264785
## iter 50 value 141.233588
## iter 60 value 132.223367
## iter 70 value 129.387034
## iter 80 value 121.025331
## iter 90 value 108.707188
## iter 100 value 102.378739
## final value 102.378739
## stopped after 100 iterations
## # weights: 246
## initial value 506.574231
## iter 10 value 250.315984
## iter 20 value 246.129594
## iter 30 value 244.180336
## iter 40 value 192.527271
## iter 50 value 164.033148
## iter 60 value 150.386008
## iter 70 value 139.894031
## iter 80 value 123.108155
## iter 90 value 111.770135
## iter 100 value 105.076960
## final value 105.076960
## stopped after 100 iterations
## # weights: 102
## initial value 329.555686
## iter 10 value 242.199454
## iter 20 value 209.593756
## iter 30 value 170.456246
## iter 40 value 159.292962
## iter 50 value 147.849012
## iter 60 value 140.709944
## iter 70 value 134.846558
## iter 80 value 128.017376
## iter 90 value 125.719205
## iter 100 value 124.209825
## final value 124.209825
## stopped after 100 iterations
## # weights: 118
## initial value 326.097475
## iter 10 value 251.501606
## iter 20 value 246.322604
## iter 30 value 220.781348
## iter 40 value 182.228321
## iter 50 value 165.184204
## iter 60 value 151.645747
## iter 70 value 138.869701
## iter 80 value 135.373647
## iter 90 value 132.091229
## iter 100 value 130.898076
## final value 130.898076
```

```
## stopped after 100 iterations
## # weights: 134
## initial value 290.576599
## iter 10 value 243.902284
## iter 20 value 195.614826
## iter 30 value 168.993046
## iter 40 value 165.742007
## iter 50 value 164.859055
## iter 60 value 155.847287
## iter 70 value 137.030755
## iter 80 value 128.364225
## iter 90 value 126.342620
## iter 100 value 123.738179
## final value 123.738179
## stopped after 100 iterations
## # weights: 150
## initial value 362.243614
## iter 10 value 248.800136
## iter 20 value 247.867775
## iter 30 value 226.402950
## iter 40 value 192.580944
## iter 50 value 166.133851
## iter 60 value 150.466946
## iter 70 value 144.111391
## iter 80 value 140.771772
## iter 90 value 139.475619
## iter 100 value 135.175462
## final value 135.175462
## stopped after 100 iterations
## # weights: 166
## initial value 431.445145
## iter 10 value 244.088865
## iter 20 value 237.305151
## iter 30 value 199.622861
## iter 40 value 174.055568
## iter 50 value 156.847502
## iter 60 value 150.032826
## iter 70 value 141.391183
## iter 80 value 132.211618
## iter 90 value 127.072493
## iter 100 value 123.961605
## final value 123.961605
## stopped after 100 iterations
## # weights: 182
## initial value 431.013137
## iter 10 value 247.670835
## iter 20 value 243.842071
## iter 30 value 212.646846
## iter 40 value 179.649678
## iter 50 value 147.363737
## iter 60 value 143.165238
## iter 70 value 136.691716
## iter 80 value 133.893401
## iter 90 value 132.183288
```

```
## iter 100 value 126.157355
## final value 126.157355
## stopped after 100 iterations
## # weights: 198
## initial value 345.539624
## iter 10 value 249.396157
## iter 20 value 246.035505
## iter 30 value 233.620758
## iter 40 value 191.138490
## iter 50 value 175.228766
## iter 60 value 156.473812
## iter 70 value 138.419385
## iter 80 value 132.261201
## iter 90 value 126.614591
## iter 100 value 124.381130
## final value 124.381130
## stopped after 100 iterations
## # weights: 214
## initial value 439.349461
## iter 10 value 230.979635
## iter 20 value 195.180775
## iter 30 value 172.298219
## iter 40 value 166.093709
## iter 50 value 149.106036
## iter 60 value 147.382414
## iter 70 value 141.142214
## iter 80 value 139.691870
## iter 90 value 130.280119
## iter 100 value 128.896495
## final value 128.896495
## stopped after 100 iterations
## # weights: 230
## initial value 431.542016
## iter 10 value 250.505338
## iter 20 value 221.451062
## iter 30 value 192.148115
## iter 40 value 165.467494
## iter 50 value 147.113013
## iter 60 value 137.977878
## iter 70 value 134.414130
## iter 80 value 130.681302
## iter 90 value 125.517590
## iter 100 value 120.625414
## final value 120.625414
## stopped after 100 iterations
## # weights: 246
## initial value 355.477381
## iter 10 value 246.413697
## iter 20 value 239.648300
## iter 30 value 211.996282
## iter 40 value 172.272325
## iter 50 value 158.316780
## iter 60 value 146.046128
## iter 70 value 142.146647
```

```
## iter 80 value 129.929467
## iter 90 value 121.474338
## iter 100 value 118.847833
## final value 118.847833
## stopped after 100 iterations
## # weights: 102
## initial value 386.323333
## iter 10 value 249.580312
## iter 20 value 245.243501
## iter 30 value 231.788329
## iter 40 value 209.197670
## iter 50 value 205.718133
## iter 60 value 199.202602
## iter 70 value 193.937843
## iter 80 value 193.336895
## iter 90 value 192.818717
## iter 100 value 190.706833
## final value 190.706833
## stopped after 100 iterations
## # weights: 118
## initial value 319.510473
## iter 10 value 247.676709
## iter 20 value 228.207807
## iter 30 value 208.464614
## iter 40 value 205.077318
## iter 50 value 202.312356
## iter 60 value 195.676161
## iter 70 value 193.957560
## iter 80 value 192.210018
## iter 90 value 191.458744
## iter 100 value 190.495781
## final value 190.495781
## stopped after 100 iterations
## # weights: 134
## initial value 336.713457
## iter 10 value 231.522549
## iter 20 value 222.884959
## iter 30 value 203.242716
## iter 40 value 199.378530
## iter 50 value 194.884916
## iter 60 value 191.034901
## iter 70 value 189.179407
## iter 80 value 188.759770
## iter 90 value 188.679643
## iter 100 value 188.656819
## final value 188.656819
## stopped after 100 iterations
## # weights: 150
## initial value 413.648519
## iter 10 value 261.582428
## iter 20 value 251.103409
## iter 30 value 210.023093
## iter 40 value 203.284234
## iter 50 value 197.434211
```

```
## iter 60 value 193.894555
## iter 70 value 191.039713
## iter 80 value 190.442136
## iter 90 value 190.016994
## iter 100 value 188.735842
## final value 188.735842
## stopped after 100 iterations
## # weights: 166
## initial value 450.864528
## iter 10 value 286.441250
## iter 20 value 272.888609
## iter 30 value 213.351470
## iter 40 value 206.025232
## iter 50 value 205.104695
## iter 60 value 197.773999
## iter 70 value 191.537537
## iter 80 value 190.539727
## iter 90 value 189.520838
## iter 100 value 188.723010
## final value 188.723010
## stopped after 100 iterations
## # weights: 182
## initial value 349.102951
## iter 10 value 254.388756
## iter 20 value 222.312875
## iter 30 value 214.937049
## iter 40 value 202.309634
## iter 50 value 193.916833
## iter 60 value 191.131679
## iter 70 value 188.944947
## iter 80 value 187.792984
## iter 90 value 187.536921
## iter 100 value 187.190186
## final value 187.190186
## stopped after 100 iterations
## # weights: 198
## initial value 339.480259
## iter 10 value 255.260122
## iter 20 value 241.576549
## iter 30 value 209.564787
## iter 40 value 201.060949
## iter 50 value 196.167560
## iter 60 value 191.931049
## iter 70 value 189.679940
## iter 80 value 187.881060
## iter 90 value 187.013298
## iter 100 value 186.666639
## final value 186.666639
## stopped after 100 iterations
## # weights: 214
## initial value 449.796032
## iter 10 value 269.430999
## iter 20 value 264.220517
## iter 30 value 249.655084
```

```
## iter 40 value 229.886131
## iter 50 value 209.736041
## iter 60 value 205.854444
## iter 70 value 194.651336
## iter 80 value 192.263047
## iter 90 value 189.514793
## iter 100 value 187.900150
## final value 187.900150
## stopped after 100 iterations
## # weights: 230
## initial value 520.108211
## iter 10 value 293.440836
## iter 20 value 274.469000
## iter 30 value 254.106591
## iter 40 value 221.344013
## iter 50 value 207.698738
## iter 60 value 201.050938
## iter 70 value 197.648612
## iter 80 value 192.222274
## iter 90 value 187.996765
## iter 100 value 186.928814
## final value 186.928814
## stopped after 100 iterations
## # weights: 246
## initial value 509.026489
## iter 10 value 251.143306
## iter 20 value 246.586067
## iter 30 value 232.428624
## iter 40 value 208.816885
## iter 50 value 201.222636
## iter 60 value 194.609687
## iter 70 value 192.278893
## iter 80 value 188.732895
## iter 90 value 186.948688
## iter 100 value 186.389041
## final value 186.389041
## stopped after 100 iterations
## # weights: 102
## initial value 404.686013
## iter 10 value 253.739917
## final value 253.739872
## converged
## # weights: 118
## initial value 354.763748
## iter 10 value 253.779920
## iter 20 value 253.738153
## iter 30 value 253.666134
## iter 40 value 251.186307
## iter 50 value 192.584634
## iter 60 value 190.444098
## iter 70 value 186.553115
## iter 80 value 185.342381
## iter 90 value 185.234209
## iter 100 value 183.432361
```



```
## final value 183.432361
## stopped after 100 iterations
## # weights: 134
## initial value 307.152244
## iter 10 value 254.334309
## iter 20 value 251.374370
## iter 30 value 218.081685
## iter 40 value 163.152913
## iter 50 value 155.065561
## iter 60 value 138.772889
## iter 70 value 135.592449
## iter 80 value 130.682695
## iter 90 value 116.737802
## iter 100 value 114.370306
## final value 114.370306
## stopped after 100 iterations
## # weights: 150
## initial value 377.843327
## iter 10 value 253.740048
## final value 253.739891
## converged
## # weights: 166
## initial value 492.168501
## iter 10 value 253.740269
## final value 253.739895
## converged
## # weights: 182
## initial value 339.662471
## iter 10 value 236.495329
## iter 20 value 193.541925
## iter 30 value 154.098827
## iter 40 value 152.315462
## iter 50 value 149.731657
## iter 60 value 120.672816
## iter 70 value 97.799096
## iter 80 value 87.932285
## iter 90 value 86.479599
## iter 100 value 84.841382
## final value 84.841382
## stopped after 100 iterations
## # weights: 198
## initial value 369.992266
## iter 10 value 231.687883
## iter 20 value 176.536249
## iter 30 value 175.077087
## iter 40 value 170.913916
## iter 50 value 150.989023
## iter 60 value 122.389862
## iter 70 value 117.524975
## iter 80 value 113.835426
## iter 90 value 112.902746
## iter 100 value 111.615048
## final value 111.615048
## stopped after 100 iterations
```

```
## # weights: 214
## initial value 383.342050
## iter 10 value 253.812995
## final value 253.739887
## converged
## # weights: 230
## initial value 404.433226
## iter 10 value 253.741209
## final value 253.739891
## converged
## # weights: 246
## initial value 407.288521
## iter 10 value 253.854343
## final value 253.739862
## converged
## # weights: 102
## initial value 486.631056
## iter 10 value 253.892224
## iter 20 value 253.554241
## iter 30 value 247.100944
## iter 40 value 166.429911
## iter 50 value 132.754282
## iter 60 value 121.855789
## iter 70 value 112.694023
## iter 80 value 98.486318
## iter 90 value 93.966013
## iter 100 value 93.663941
## final value 93.663941
## stopped after 100 iterations
## # weights: 118
## initial value 481.641046
## iter 10 value 253.901117
## iter 20 value 253.448001
## iter 30 value 189.630946
## iter 40 value 139.821590
## iter 50 value 113.924640
## iter 60 value 97.118745
## iter 70 value 94.263534
## iter 80 value 77.123898
## iter 90 value 63.145940
## iter 100 value 59.387337
## final value 59.387337
## stopped after 100 iterations
## # weights: 134
## initial value 440.474412
## iter 10 value 203.139510
## iter 20 value 155.275064
## iter 30 value 140.851706
## iter 40 value 137.159977
## iter 50 value 119.034827
## iter 60 value 100.648648
## iter 70 value 93.855881
## iter 80 value 91.409028
## iter 90 value 90.835886
```

```
## iter 100 value 83.015323
## final value 83.015323
## stopped after 100 iterations
## # weights: 150
## initial value 350.720494
## iter 10 value 254.403032
## iter 20 value 247.386053
## iter 30 value 202.690446
## iter 40 value 195.016887
## iter 50 value 192.116571
## iter 60 value 172.698522
## iter 70 value 111.233322
## iter 80 value 80.480845
## iter 90 value 69.778565
## iter 100 value 62.309607
## final value 62.309607
## stopped after 100 iterations
## # weights: 166
## initial value 367.377556
## iter 10 value 251.799375
## iter 20 value 188.362166
## iter 30 value 174.337818
## iter 40 value 144.725608
## iter 50 value 128.908465
## iter 60 value 110.868657
## iter 70 value 86.291706
## iter 80 value 80.465199
## iter 90 value 69.241949
## iter 100 value 59.737694
## final value 59.737694
## stopped after 100 iterations
## # weights: 182
## initial value 453.048709
## iter 10 value 260.663979
## iter 20 value 254.069700
## iter 30 value 243.862564
## iter 40 value 181.587036
## iter 50 value 168.824786
## iter 60 value 147.937005
## iter 70 value 113.197467
## iter 80 value 105.149272
## iter 90 value 95.145409
## iter 100 value 91.171418
## final value 91.171418
## stopped after 100 iterations
## # weights: 198
## initial value 349.854654
## iter 10 value 253.021779
## iter 20 value 224.841665
## iter 30 value 143.913806
## iter 40 value 114.979509
## iter 50 value 111.104384
## iter 60 value 110.235616
## iter 70 value 108.278996
```

```
## iter 80 value 99.480317
## iter 90 value 74.085147
## iter 100 value 61.274174
## final value 61.274174
## stopped after 100 iterations
## # weights: 214
## initial value 490.784445
## iter 10 value 250.992024
## iter 20 value 183.702011
## iter 30 value 170.382592
## iter 40 value 153.390982
## iter 50 value 123.131559
## iter 60 value 100.439729
## iter 70 value 98.488477
## iter 80 value 94.770253
## iter 90 value 83.972563
## iter 100 value 70.095183
## final value 70.095183
## stopped after 100 iterations
## # weights: 230
## initial value 398.242877
## iter 10 value 265.953579
## iter 20 value 183.005759
## iter 30 value 165.518100
## iter 40 value 139.941978
## iter 50 value 117.235136
## iter 60 value 104.387424
## iter 70 value 101.531439
## iter 80 value 96.229280
## iter 90 value 82.559800
## iter 100 value 67.865187
## final value 67.865187
## stopped after 100 iterations
## # weights: 246
## initial value 280.454598
## iter 10 value 254.112177
## iter 20 value 252.985308
## iter 30 value 218.261628
## iter 40 value 151.130261
## iter 50 value 105.302163
## iter 60 value 99.648981
## iter 70 value 95.829163
## iter 80 value 76.973623
## iter 90 value 74.160112
## iter 100 value 64.261460
## final value 64.261460
## stopped after 100 iterations
## # weights: 102
## initial value 347.318964
## iter 10 value 253.995703
## iter 20 value 249.309484
## iter 30 value 191.058577
## iter 40 value 157.930413
## iter 50 value 143.416267
```

```
## iter 60 value 128.261035
## iter 70 value 116.975131
## iter 80 value 110.212016
## iter 90 value 106.248306
## iter 100 value 100.156934
## final value 100.156934
## stopped after 100 iterations
## # weights: 118
## initial value 273.649531
## iter 10 value 254.646895
## iter 20 value 241.971666
## iter 30 value 184.837477
## iter 40 value 165.499811
## iter 50 value 159.594792
## iter 60 value 136.120800
## iter 70 value 125.788759
## iter 80 value 112.795071
## iter 90 value 105.030884
## iter 100 value 100.162133
## final value 100.162133
## stopped after 100 iterations
## # weights: 134
## initial value 395.125813
## iter 10 value 250.823727
## iter 20 value 175.717917
## iter 30 value 165.431417
## iter 40 value 155.890513
## iter 50 value 132.138648
## iter 60 value 112.886179
## iter 70 value 106.194827
## iter 80 value 99.654348
## iter 90 value 94.459346
## iter 100 value 89.578491
## final value 89.578491
## stopped after 100 iterations
## # weights: 150
## initial value 387.207039
## iter 10 value 256.910114
## iter 20 value 211.913083
## iter 30 value 177.761007
## iter 40 value 173.470077
## iter 50 value 166.071305
## iter 60 value 152.144610
## iter 70 value 140.639820
## iter 80 value 117.874125
## iter 90 value 102.311690
## iter 100 value 97.182468
## final value 97.182468
## stopped after 100 iterations
## # weights: 166
## initial value 300.458520
## iter 10 value 257.544282
## iter 20 value 216.748081
## iter 30 value 170.655529
```

```
## iter 40 value 166.318071
## iter 50 value 145.483715
## iter 60 value 135.445644
## iter 70 value 131.510264
## iter 80 value 129.746582
## iter 90 value 122.875964
## iter 100 value 103.200490
## final value 103.200490
## stopped after 100 iterations
## # weights: 182
## initial value 448.721271
## iter 10 value 254.635161
## iter 20 value 237.070639
## iter 30 value 199.291171
## iter 40 value 166.026714
## iter 50 value 136.254662
## iter 60 value 117.697965
## iter 70 value 110.107417
## iter 80 value 96.564666
## iter 90 value 91.723444
## iter 100 value 91.130678
## final value 91.130678
## stopped after 100 iterations
## # weights: 198
## initial value 526.006068
## iter 10 value 264.072054
## iter 20 value 211.269134
## iter 30 value 179.369316
## iter 40 value 160.070380
## iter 50 value 153.503138
## iter 60 value 136.267147
## iter 70 value 126.476066
## iter 80 value 111.136152
## iter 90 value 102.443839
## iter 100 value 99.630437
## final value 99.630437
## stopped after 100 iterations
## # weights: 214
## initial value 361.195515
## iter 10 value 256.403368
## iter 20 value 254.518734
## iter 30 value 246.027369
## iter 40 value 181.907527
## iter 50 value 138.030152
## iter 60 value 116.640991
## iter 70 value 113.605931
## iter 80 value 101.136079
## iter 90 value 95.021161
## iter 100 value 93.379028
## final value 93.379028
## stopped after 100 iterations
## # weights: 230
## initial value 411.214232
## iter 10 value 259.841632
```

```
## iter 20 value 228.722996
## iter 30 value 187.505020
## iter 40 value 148.161700
## iter 50 value 131.977156
## iter 60 value 125.408132
## iter 70 value 118.623076
## iter 80 value 114.245138
## iter 90 value 112.012185
## iter 100 value 106.567610
## final value 106.567610
## stopped after 100 iterations
## # weights: 246
## initial value 496.698567
## iter 10 value 281.331690
## iter 20 value 258.870948
## iter 30 value 211.027960
## iter 40 value 184.256039
## iter 50 value 154.195012
## iter 60 value 137.132791
## iter 70 value 131.268152
## iter 80 value 118.539175
## iter 90 value 102.563904
## iter 100 value 95.371585
## final value 95.371585
## stopped after 100 iterations
## # weights: 102
## initial value 363.375591
## iter 10 value 263.553759
## iter 20 value 235.776411
## iter 30 value 201.457957
## iter 40 value 187.662056
## iter 50 value 181.210079
## iter 60 value 177.790343
## iter 70 value 176.404686
## iter 80 value 174.871785
## iter 90 value 173.956762
## iter 100 value 173.655270
## final value 173.655270
## stopped after 100 iterations
## # weights: 118
## initial value 416.166801
## iter 10 value 295.338063
## iter 20 value 281.699922
## iter 30 value 236.667776
## iter 40 value 203.382877
## iter 50 value 191.690453
## iter 60 value 184.781341
## iter 70 value 181.185475
## iter 80 value 180.523588
## iter 90 value 180.322561
## iter 100 value 180.178442
## final value 180.178442
## stopped after 100 iterations
## # weights: 134
```

```
## initial value 391.036462
## iter 10 value 262.528709
## iter 20 value 240.614893
## iter 30 value 210.378961
## iter 40 value 198.403552
## iter 50 value 190.186126
## iter 60 value 182.934739
## iter 70 value 178.493988
## iter 80 value 175.699395
## iter 90 value 174.837975
## iter 100 value 174.718771
## final value 174.718771
## stopped after 100 iterations
## # weights: 150
## initial value 534.792927
## iter 10 value 257.848267
## iter 20 value 235.439801
## iter 30 value 211.710719
## iter 40 value 196.468374
## iter 50 value 188.658800
## iter 60 value 186.803937
## iter 70 value 185.238024
## iter 80 value 181.829409
## iter 90 value 180.572331
## iter 100 value 180.267343
## final value 180.267343
## stopped after 100 iterations
## # weights: 166
## initial value 401.626970
## iter 10 value 305.566264
## iter 20 value 289.784654
## iter 30 value 261.503687
## iter 40 value 238.478424
## iter 50 value 216.436693
## iter 60 value 198.426045
## iter 70 value 179.961207
## iter 80 value 177.033770
## iter 90 value 176.114999
## iter 100 value 175.263530
## final value 175.263530
## stopped after 100 iterations
## # weights: 182
## initial value 348.271897
## iter 10 value 257.477477
## iter 20 value 253.506160
## iter 30 value 219.090237
## iter 40 value 203.426948
## iter 50 value 186.084420
## iter 60 value 182.394991
## iter 70 value 178.866300
## iter 80 value 176.681416
## iter 90 value 173.839201
## iter 100 value 171.719315
## final value 171.719315
```



```
## stopped after 100 iterations
## # weights: 198
## initial value 493.709734
## iter 10 value 260.083162
## iter 20 value 242.465842
## iter 30 value 207.015305
## iter 40 value 197.673224
## iter 50 value 182.726181
## iter 60 value 177.944753
## iter 70 value 175.395080
## iter 80 value 172.856677
## iter 90 value 172.153183
## iter 100 value 170.759615
## final value 170.759615
## stopped after 100 iterations
## # weights: 214
## initial value 346.873213
## iter 10 value 256.719069
## iter 20 value 240.321716
## iter 30 value 212.535916
## iter 40 value 202.423987
## iter 50 value 192.721339
## iter 60 value 184.260455
## iter 70 value 177.260277
## iter 80 value 174.447311
## iter 90 value 173.086274
## iter 100 value 172.579228
## final value 172.579228
## stopped after 100 iterations
## # weights: 230
## initial value 388.784286
## iter 10 value 256.695301
## iter 20 value 252.407389
## iter 30 value 247.001166
## iter 40 value 204.634485
## iter 50 value 196.025452
## iter 60 value 188.825456
## iter 70 value 179.067503
## iter 80 value 173.526030
## iter 90 value 170.468216
## iter 100 value 168.833503
## final value 168.833503
## stopped after 100 iterations
## # weights: 246
## initial value 400.399868
## iter 10 value 273.965543
## iter 20 value 259.765729
## iter 30 value 251.058537
## iter 40 value 234.450227
## iter 50 value 199.875002
## iter 60 value 184.655892
## iter 70 value 175.630525
## iter 80 value 171.754895
## iter 90 value 168.941507
```

```
## iter 100 value 167.250392
## final value 167.250392
## stopped after 100 iterations
## # weights: 102
## initial value 326.010579
## iter 10 value 239.833478
## final value 239.832553
## converged
## # weights: 118
## initial value 414.388036
## iter 10 value 239.844387
## final value 239.832572
## converged
## # weights: 134
## initial value 337.732401
## iter 10 value 239.832558
## iter 10 value 239.832557
## iter 10 value 239.832557
## final value 239.832557
## converged
## # weights: 150
## initial value 335.769909
## iter 10 value 239.833161
## final value 239.832511
## converged
## # weights: 166
## initial value 345.568043
## iter 10 value 239.979914
## final value 239.832572
## converged
## # weights: 182
## initial value 415.488538
## iter 10 value 240.003525
## iter 20 value 234.277606
## iter 30 value 194.471141
## iter 40 value 185.518925
## iter 50 value 178.769731
## iter 60 value 178.420960
## iter 70 value 176.830542
## iter 80 value 176.782845
## iter 90 value 176.775274
## iter 100 value 176.765426
## final value 176.765426
## stopped after 100 iterations
## # weights: 198
## initial value 398.913433
## iter 10 value 227.324849
## iter 20 value 156.371508
## iter 30 value 152.625673
## iter 40 value 131.422393
## iter 50 value 129.838327
## iter 60 value 118.317986
## iter 70 value 98.715616
## iter 80 value 91.740894
```

```
## iter 90 value 87.936789
## iter 100 value 86.760407
## final value 86.760407
## stopped after 100 iterations
## # weights: 214
## initial value 322.196601
## iter 10 value 241.302235
## iter 20 value 219.746369
## iter 30 value 158.697997
## iter 40 value 158.412229
## iter 50 value 158.411249
## iter 50 value 158.411248
## iter 50 value 158.411248
## final value 158.411248
## converged
## # weights: 230
## initial value 286.842600
## iter 10 value 217.437336
## iter 20 value 161.208150
## iter 30 value 155.530232
## iter 40 value 136.725260
## iter 50 value 108.705602
## iter 60 value 103.247415
## iter 70 value 101.378469
## iter 80 value 99.152676
## iter 90 value 98.393962
## iter 100 value 97.335623
## final value 97.335623
## stopped after 100 iterations
## # weights: 246
## initial value 465.812856
## iter 10 value 240.942871
## final value 239.832572
## converged
## # weights: 102
## initial value 408.934673
## iter 10 value 239.709800
## iter 20 value 207.460861
## iter 30 value 140.988364
## iter 40 value 133.581192
## iter 50 value 125.422552
## iter 60 value 102.293438
## iter 70 value 96.704522
## iter 80 value 95.513938
## iter 90 value 95.172157
## iter 100 value 95.037727
## final value 95.037727
## stopped after 100 iterations
## # weights: 118
## initial value 275.002842
## iter 10 value 240.017417
## iter 20 value 237.809434
## iter 30 value 214.713383
## iter 40 value 187.564677
```

```
## iter 50 value 162.151271
## iter 60 value 157.742572
## iter 70 value 157.342806
## iter 80 value 156.234986
## iter 90 value 147.200256
## iter 100 value 124.315155
## final value 124.315155
## stopped after 100 iterations
## # weights: 134
## initial value 365.964879
## iter 10 value 240.850844
## iter 20 value 239.910891
## iter 30 value 233.600329
## iter 40 value 202.592727
## iter 50 value 189.174570
## iter 60 value 184.599147
## iter 70 value 167.661867
## iter 80 value 159.892255
## iter 90 value 142.252793
## iter 100 value 129.304805
## final value 129.304805
## stopped after 100 iterations
## # weights: 150
## initial value 313.257302
## iter 10 value 240.160125
## iter 20 value 239.549214
## iter 30 value 220.831733
## iter 40 value 167.789144
## iter 50 value 132.042788
## iter 60 value 116.033605
## iter 70 value 115.037507
## iter 80 value 109.915502
## iter 90 value 103.162285
## iter 100 value 97.416965
## final value 97.416965
## stopped after 100 iterations
## # weights: 166
## initial value 306.422455
## iter 10 value 240.642591
## iter 20 value 238.719758
## iter 30 value 221.716536
## iter 40 value 181.863494
## iter 50 value 130.175929
## iter 60 value 108.988820
## iter 70 value 103.136907
## iter 80 value 99.799543
## iter 90 value 97.511045
## iter 100 value 93.949177
## final value 93.949177
## stopped after 100 iterations
## # weights: 182
## initial value 449.551037
## iter 10 value 240.201583
## iter 20 value 160.326723
```

```
## iter 30 value 153.033297
## iter 40 value 152.343964
## iter 50 value 149.091047
## iter 60 value 132.116775
## iter 70 value 111.575545
## iter 80 value 105.010922
## iter 90 value 101.416859
## iter 100 value 94.278055
## final value 94.278055
## stopped after 100 iterations
## # weights: 198
## initial value 514.602210
## iter 10 value 246.947526
## iter 20 value 187.608541
## iter 30 value 171.642683
## iter 40 value 164.037043
## iter 50 value 157.936943
## iter 60 value 138.542488
## iter 70 value 119.326073
## iter 80 value 112.645014
## iter 90 value 109.594043
## iter 100 value 96.840611
## final value 96.840611
## stopped after 100 iterations
## # weights: 214
## initial value 451.090202
## iter 10 value 239.951884
## iter 20 value 228.628735
## iter 30 value 162.781589
## iter 40 value 145.778288
## iter 50 value 122.824025
## iter 60 value 105.167402
## iter 70 value 91.013608
## iter 80 value 80.357902
## iter 90 value 72.237534
## iter 100 value 69.196096
## final value 69.196096
## stopped after 100 iterations
## # weights: 230
## initial value 446.033862
## iter 10 value 240.363368
## iter 20 value 239.671060
## iter 30 value 234.777179
## iter 40 value 192.156742
## iter 50 value 169.291679
## iter 60 value 149.553479
## iter 70 value 142.494134
## iter 80 value 120.604897
## iter 90 value 115.348387
## iter 100 value 113.197674
## final value 113.197674
## stopped after 100 iterations
## # weights: 246
## initial value 360.070929
```

```
## iter 10 value 240.973645
## iter 20 value 239.013920
## iter 30 value 182.281228
## iter 40 value 168.210051
## iter 50 value 160.713476
## iter 60 value 144.552711
## iter 70 value 118.458029
## iter 80 value 109.244699
## iter 90 value 102.900992
## iter 100 value 92.338533
## final value 92.338533
## stopped after 100 iterations
## # weights: 102
## initial value 458.682338
## iter 10 value 244.106056
## iter 20 value 200.897526
## iter 30 value 170.574645
## iter 40 value 143.877123
## iter 50 value 133.340864
## iter 60 value 128.196626
## iter 70 value 124.611371
## iter 80 value 123.171310
## iter 90 value 122.522706
## iter 100 value 121.854902
## final value 121.854902
## stopped after 100 iterations
## # weights: 118
## initial value 396.422865
## iter 10 value 241.075142
## iter 20 value 207.722143
## iter 30 value 165.034184
## iter 40 value 161.061035
## iter 50 value 160.085825
## iter 60 value 152.291543
## iter 70 value 138.018409
## iter 80 value 133.256291
## iter 90 value 124.569091
## iter 100 value 119.092568
## final value 119.092568
## stopped after 100 iterations
## # weights: 134
## initial value 259.507955
## iter 10 value 239.763856
## iter 20 value 184.867787
## iter 30 value 162.798972
## iter 40 value 161.415939
## iter 50 value 160.915745
## iter 60 value 147.922646
## iter 70 value 131.360259
## iter 80 value 125.043275
## iter 90 value 120.849755
## iter 100 value 117.870939
## final value 117.870939
## stopped after 100 iterations
```

```
## # weights: 150
## initial value 444.312575
## iter 10 value 245.185929
## iter 20 value 240.761796
## iter 30 value 221.322845
## iter 40 value 177.887983
## iter 50 value 156.222733
## iter 60 value 146.784058
## iter 70 value 126.571283
## iter 80 value 120.922714
## iter 90 value 120.398965
## iter 100 value 119.889451
## final value 119.889451
## stopped after 100 iterations
## # weights: 166
## initial value 389.017264
## iter 10 value 241.845283
## iter 20 value 231.060454
## iter 30 value 197.290342
## iter 40 value 178.705223
## iter 50 value 154.550847
## iter 60 value 149.626781
## iter 70 value 143.954919
## iter 80 value 132.264865
## iter 90 value 125.610864
## iter 100 value 120.105258
## final value 120.105258
## stopped after 100 iterations
## # weights: 182
## initial value 370.051182
## iter 10 value 231.899269
## iter 20 value 186.224624
## iter 30 value 175.734260
## iter 40 value 152.650201
## iter 50 value 143.941918
## iter 60 value 131.796080
## iter 70 value 125.246332
## iter 80 value 121.710505
## iter 90 value 118.198542
## iter 100 value 114.276113
## final value 114.276113
## stopped after 100 iterations
## # weights: 198
## initial value 375.651882
## iter 10 value 236.670863
## iter 20 value 188.467881
## iter 30 value 164.086926
## iter 40 value 146.327631
## iter 50 value 138.015767
## iter 60 value 134.556667
## iter 70 value 126.093545
## iter 80 value 120.744102
## iter 90 value 117.056817
## iter 100 value 115.270498
```

```
## final value 115.270498
## stopped after 100 iterations
## # weights: 214
## initial value 346.147957
## iter 10 value 241.545515
## iter 20 value 239.180327
## iter 30 value 217.252946
## iter 40 value 186.784327
## iter 50 value 152.388709
## iter 60 value 137.389335
## iter 70 value 127.259648
## iter 80 value 122.487271
## iter 90 value 119.084737
## iter 100 value 115.406201
## final value 115.406201
## stopped after 100 iterations
## # weights: 230
## initial value 462.373339
## iter 10 value 202.742686
## iter 20 value 168.676507
## iter 30 value 163.509198
## iter 40 value 162.142194
## iter 50 value 160.185968
## iter 60 value 152.341624
## iter 70 value 135.041834
## iter 80 value 121.057521
## iter 90 value 116.613949
## iter 100 value 115.153018
## final value 115.153018
## stopped after 100 iterations
## # weights: 246
## initial value 460.436399
## iter 10 value 249.799059
## iter 20 value 240.210160
## iter 30 value 234.943462
## iter 40 value 171.231847
## iter 50 value 161.816763
## iter 60 value 160.596313
## iter 70 value 155.267192
## iter 80 value 135.410489
## iter 90 value 123.389465
## iter 100 value 118.642286
## final value 118.642286
## stopped after 100 iterations
## # weights: 102
## initial value 302.832898
## iter 10 value 215.347257
## iter 20 value 197.704413
## iter 30 value 194.347667
## iter 40 value 183.960523
## iter 50 value 179.817041
## iter 60 value 176.622373
## iter 70 value 175.790840
## iter 80 value 175.681872
```



```
## iter 90 value 175.654119
## iter 100 value 175.594687
## final value 175.594687
## stopped after 100 iterations
## # weights: 118
## initial value 369.574062
## iter 10 value 244.502706
## iter 20 value 212.654773
## iter 30 value 194.198175
## iter 40 value 187.267006
## iter 50 value 182.523219
## iter 60 value 180.993608
## iter 70 value 177.269634
## iter 80 value 174.144849
## iter 90 value 173.274811
## iter 100 value 172.850215
## final value 172.850215
## stopped after 100 iterations
## # weights: 134
## initial value 499.961191
## iter 10 value 264.294072
## iter 20 value 234.837660
## iter 30 value 203.030722
## iter 40 value 185.270377
## iter 50 value 182.993375
## iter 60 value 178.562908
## iter 70 value 176.967935
## iter 80 value 175.334764
## iter 90 value 174.559606
## iter 100 value 174.366863
## final value 174.366863
## stopped after 100 iterations
## # weights: 150
## initial value 386.821494
## iter 10 value 240.518791
## iter 20 value 195.060262
## iter 30 value 191.452348
## iter 40 value 186.351450
## iter 50 value 179.977122
## iter 60 value 175.714103
## iter 70 value 173.783046
## iter 80 value 173.274922
## iter 90 value 172.975813
## iter 100 value 172.207262
## final value 172.207262
## stopped after 100 iterations
## # weights: 166
## initial value 309.052109
## iter 10 value 243.143925
## iter 20 value 230.612486
## iter 30 value 199.481530
## iter 40 value 184.722862
## iter 50 value 181.127270
## iter 60 value 178.229824
```

```
## iter 70 value 176.509715
## iter 80 value 175.588537
## iter 90 value 174.427018
## iter 100 value 173.063185
## final value 173.063185
## stopped after 100 iterations
## # weights: 182
## initial value 316.987340
## iter 10 value 245.557032
## iter 20 value 242.032774
## iter 30 value 228.304475
## iter 40 value 195.473689
## iter 50 value 183.675444
## iter 60 value 178.274027
## iter 70 value 174.761514
## iter 80 value 173.238161
## iter 90 value 172.987039
## iter 100 value 172.868659
## final value 172.868659
## stopped after 100 iterations
## # weights: 198
## initial value 344.801760
## iter 10 value 218.495723
## iter 20 value 196.562229
## iter 30 value 185.216534
## iter 40 value 178.495468
## iter 50 value 173.804321
## iter 60 value 171.505145
## iter 70 value 170.635083
## iter 80 value 170.396005
## iter 90 value 170.204920
## iter 100 value 170.138074
## final value 170.138074
## stopped after 100 iterations
## # weights: 214
## initial value 359.090534
## iter 10 value 252.090861
## iter 20 value 238.264435
## iter 30 value 197.480381
## iter 40 value 191.675656
## iter 50 value 187.576152
## iter 60 value 179.186010
## iter 70 value 174.242919
## iter 80 value 172.175453
## iter 90 value 170.615130
## iter 100 value 170.181549
## final value 170.181549
## stopped after 100 iterations
## # weights: 230
## initial value 513.388576
## iter 10 value 275.334135
## iter 20 value 261.414571
## iter 30 value 232.540148
## iter 40 value 190.569800
```

```
## iter 50 value 186.465856
## iter 60 value 182.482515
## iter 70 value 179.784836
## iter 80 value 176.580980
## iter 90 value 174.061309
## iter 100 value 172.590275
## final value 172.590275
## stopped after 100 iterations
## # weights: 246
## initial value 399.168265
## iter 10 value 249.774953
## iter 20 value 231.362818
## iter 30 value 195.836679
## iter 40 value 184.928160
## iter 50 value 180.188734
## iter 60 value 177.401493
## iter 70 value 174.661245
## iter 80 value 172.804900
## iter 90 value 171.157014
## iter 100 value 170.750217
## final value 170.750217
## stopped after 100 iterations
## # weights: 102
## initial value 338.077770
## iter 10 value 246.108355
## iter 20 value 240.165574
## iter 30 value 224.149890
## iter 40 value 223.776973
## iter 50 value 223.642549
## iter 60 value 199.106737
## iter 70 value 171.003263
## iter 80 value 166.967992
## iter 90 value 163.197657
## iter 100 value 161.669268
## final value 161.669268
## stopped after 100 iterations
## # weights: 118
## initial value 435.329644
## iter 10 value 244.452816
## iter 20 value 189.050617
## iter 30 value 170.718303
## iter 40 value 164.103149
## iter 50 value 137.129427
## iter 60 value 131.471394
## iter 70 value 129.018449
## iter 80 value 127.871665
## iter 90 value 126.637898
## iter 100 value 125.494841
## final value 125.494841
## stopped after 100 iterations
## # weights: 134
## initial value 323.189404
## iter 10 value 246.125323
## iter 20 value 242.574371
```

```
## iter 30 value 198.644489
## iter 40 value 194.801088
## iter 50 value 192.860544
## iter 60 value 168.868198
## iter 70 value 153.546041
## iter 80 value 152.320703
## iter 90 value 149.224646
## iter 100 value 148.645650
## final value 148.645650
## stopped after 100 iterations
## # weights: 150
## initial value 353.788653
## iter 10 value 246.619088
## final value 246.121940
## converged
## # weights: 166
## initial value 290.670251
## iter 10 value 246.122357
## final value 246.122056
## converged
## # weights: 182
## initial value 443.788947
## iter 10 value 246.247392
## iter 20 value 246.122005
## iter 20 value 246.122003
## final value 246.122003
## converged
## # weights: 198
## initial value 292.919125
## iter 10 value 228.055980
## iter 20 value 183.519177
## iter 30 value 159.383997
## iter 40 value 153.859905
## iter 50 value 152.543768
## iter 60 value 151.385629
## iter 70 value 147.762147
## iter 80 value 147.117843
## iter 90 value 145.736317
## iter 100 value 145.168571
## final value 145.168571
## stopped after 100 iterations
## # weights: 214
## initial value 447.833629
## iter 10 value 246.382419
## final value 246.122057
## converged
## # weights: 230
## initial value 305.604975
## iter 10 value 246.148893
## iter 20 value 219.632551
## iter 30 value 192.065915
## iter 40 value 191.923626
## iter 50 value 191.911937
## final value 191.911627
```

```
## converged
## # weights: 246
## initial value 474.850886
## iter 10 value 251.099214
## final value 246.122071
## converged
## # weights: 102
## initial value 294.422864
## iter 10 value 246.365051
## iter 20 value 245.960101
## iter 30 value 209.874810
## iter 40 value 178.925384
## iter 50 value 137.723066
## iter 60 value 120.793454
## iter 70 value 113.398448
## iter 80 value 110.316593
## iter 90 value 105.477863
## iter 100 value 104.096886
## final value 104.096886
## stopped after 100 iterations
## # weights: 118
## initial value 284.337923
## iter 10 value 246.024888
## iter 20 value 216.025394
## iter 30 value 194.408922
## iter 40 value 165.872676
## iter 50 value 159.725082
## iter 60 value 134.891204
## iter 70 value 124.325211
## iter 80 value 113.031791
## iter 90 value 108.921138
## iter 100 value 95.310270
## final value 95.310270
## stopped after 100 iterations
## # weights: 134
## initial value 301.259453
## iter 10 value 245.469034
## iter 20 value 201.030147
## iter 30 value 180.033838
## iter 40 value 175.633503
## iter 50 value 163.550580
## iter 60 value 151.915144
## iter 70 value 147.941394
## iter 80 value 145.271650
## iter 90 value 144.192069
## iter 100 value 143.754948
## final value 143.754948
## stopped after 100 iterations
## # weights: 150
## initial value 416.759742
## iter 10 value 246.310693
## iter 20 value 245.320089
## iter 30 value 199.462273
## iter 40 value 184.349883
```

```
## iter 50 value 171.414943
## iter 60 value 132.572713
## iter 70 value 127.444969
## iter 80 value 119.552954
## iter 90 value 116.628387
## iter 100 value 89.973715
## final value 89.973715
## stopped after 100 iterations
## # weights: 166
## initial value 405.376429
## iter 10 value 246.500260
## iter 20 value 223.969834
## iter 30 value 204.468823
## iter 40 value 202.263216
## iter 50 value 180.366889
## iter 60 value 170.784055
## iter 70 value 168.781370
## iter 80 value 165.367652
## iter 90 value 146.328590
## iter 100 value 120.221540
## final value 120.221540
## stopped after 100 iterations
## # weights: 182
## initial value 447.837909
## iter 10 value 246.395983
## iter 20 value 246.197123
## iter 30 value 197.646199
## iter 40 value 170.478958
## iter 50 value 166.203027
## iter 60 value 155.056004
## iter 70 value 147.650096
## iter 80 value 143.379348
## iter 90 value 138.038597
## iter 100 value 116.664900
## final value 116.664900
## stopped after 100 iterations
## # weights: 198
## initial value 535.828326
## iter 10 value 246.581923
## iter 20 value 245.744611
## iter 30 value 193.331049
## iter 40 value 163.841308
## iter 50 value 153.547739
## iter 60 value 130.312438
## iter 70 value 120.461435
## iter 80 value 113.591150
## iter 90 value 87.190792
## iter 100 value 71.370393
## final value 71.370393
## stopped after 100 iterations
## # weights: 214
## initial value 431.758642
## iter 10 value 249.144644
## iter 20 value 210.414180
```

```
## iter 30 value 188.037572
## iter 40 value 186.338126
## iter 50 value 182.492939
## iter 60 value 155.845685
## iter 70 value 137.856186
## iter 80 value 118.438279
## iter 90 value 103.618450
## iter 100 value 93.875874
## final value 93.875874
## stopped after 100 iterations
## # weights: 230
## initial value 407.537706
## iter 10 value 267.107295
## iter 20 value 245.599973
## iter 30 value 209.002173
## iter 40 value 194.480526
## iter 50 value 186.874869
## iter 60 value 156.983536
## iter 70 value 131.385517
## iter 80 value 112.475013
## iter 90 value 91.680184
## iter 100 value 76.749663
## final value 76.749663
## stopped after 100 iterations
## # weights: 246
## initial value 276.717489
## iter 10 value 221.050862
## iter 20 value 179.343586
## iter 30 value 171.533728
## iter 40 value 161.490966
## iter 50 value 155.781136
## iter 60 value 138.368118
## iter 70 value 136.514383
## iter 80 value 125.301846
## iter 90 value 114.295819
## iter 100 value 105.585819
## final value 105.585819
## stopped after 100 iterations
## # weights: 102
## initial value 329.459176
## iter 10 value 246.352205
## iter 20 value 240.385108
## iter 30 value 212.517613
## iter 40 value 189.190476
## iter 50 value 169.365666
## iter 60 value 158.406502
## iter 70 value 146.731348
## iter 80 value 138.813073
## iter 90 value 134.472469
## iter 100 value 132.750941
## final value 132.750941
## stopped after 100 iterations
## # weights: 118
## initial value 362.280900
```

```
## iter 10 value 246.645162
## iter 20 value 236.582910
## iter 30 value 206.819684
## iter 40 value 201.268908
## iter 50 value 197.433088
## iter 60 value 165.983686
## iter 70 value 156.504736
## iter 80 value 146.014861
## iter 90 value 135.553602
## iter 100 value 132.502626
## final value 132.502626
## stopped after 100 iterations
## # weights: 134
## initial value 319.889687
## iter 10 value 243.595235
## iter 20 value 197.184750
## iter 30 value 188.432229
## iter 40 value 180.089317
## iter 50 value 174.338946
## iter 60 value 163.558971
## iter 70 value 146.565649
## iter 80 value 142.616702
## iter 90 value 141.852380
## iter 100 value 140.184654
## final value 140.184654
## stopped after 100 iterations
## # weights: 150
## initial value 343.839879
## iter 10 value 239.012284
## iter 20 value 212.632722
## iter 30 value 200.767811
## iter 40 value 166.102029
## iter 50 value 145.808923
## iter 60 value 138.933864
## iter 70 value 136.694757
## iter 80 value 129.359652
## iter 90 value 125.784330
## iter 100 value 124.218884
## final value 124.218884
## stopped after 100 iterations
## # weights: 166
## initial value 360.347598
## iter 10 value 256.601260
## iter 20 value 226.188453
## iter 30 value 212.212532
## iter 40 value 197.297209
## iter 50 value 177.617574
## iter 60 value 166.820115
## iter 70 value 157.146496
## iter 80 value 142.504720
## iter 90 value 138.550431
## iter 100 value 137.663514
## final value 137.663514
## stopped after 100 iterations
```



```
## # weights: 182
## initial value 302.267653
## iter 10 value 247.800983
## iter 20 value 231.506295
## iter 30 value 194.998873
## iter 40 value 185.065230
## iter 50 value 184.220277
## iter 60 value 181.708768
## iter 70 value 168.732739
## iter 80 value 146.831991
## iter 90 value 134.301492
## iter 100 value 116.688547
## final value 116.688547
## stopped after 100 iterations
## # weights: 198
## initial value 541.871587
## iter 10 value 246.425481
## iter 20 value 232.249983
## iter 30 value 202.780035
## iter 40 value 171.125870
## iter 50 value 154.993692
## iter 60 value 138.994116
## iter 70 value 127.889293
## iter 80 value 123.378136
## iter 90 value 115.182938
## iter 100 value 109.582906
## final value 109.582906
## stopped after 100 iterations
## # weights: 214
## initial value 339.396086
## iter 10 value 247.880404
## iter 20 value 215.697204
## iter 30 value 193.856004
## iter 40 value 173.779724
## iter 50 value 169.515991
## iter 60 value 166.896222
## iter 70 value 164.284390
## iter 80 value 155.348874
## iter 90 value 150.135895
## iter 100 value 137.189628
## final value 137.189628
## stopped after 100 iterations
## # weights: 230
## initial value 294.304708
## iter 10 value 234.737700
## iter 20 value 192.367515
## iter 30 value 172.292961
## iter 40 value 161.890762
## iter 50 value 152.120645
## iter 60 value 148.702023
## iter 70 value 146.794018
## iter 80 value 143.148095
## iter 90 value 136.493159
## iter 100 value 125.737155
```

```
## final value 125.737155
## stopped after 100 iterations
## # weights: 246
## initial value 321.383643
## iter 10 value 251.434164
## iter 20 value 224.087778
## iter 30 value 189.599229
## iter 40 value 170.028268
## iter 50 value 160.964234
## iter 60 value 137.316810
## iter 70 value 133.804040
## iter 80 value 122.369981
## iter 90 value 118.095754
## iter 100 value 116.230478
## final value 116.230478
## stopped after 100 iterations
## # weights: 102
## initial value 379.581144
## iter 10 value 249.271373
## iter 20 value 232.710133
## iter 30 value 214.898275
## iter 40 value 207.784573
## iter 50 value 204.246114
## iter 60 value 202.815235
## iter 70 value 202.140814
## iter 80 value 200.451120
## iter 90 value 199.833654
## iter 100 value 199.751640
## final value 199.751640
## stopped after 100 iterations
## # weights: 118
## initial value 317.552586
## iter 10 value 247.351619
## iter 20 value 231.056490
## iter 30 value 211.958011
## iter 40 value 206.064942
## iter 50 value 203.887180
## iter 60 value 201.820053
## iter 70 value 201.277472
## iter 80 value 200.285489
## iter 90 value 200.087250
## iter 100 value 200.009791
## final value 200.009791
## stopped after 100 iterations
## # weights: 134
## initial value 376.096427
## iter 10 value 243.807590
## iter 20 value 217.223921
## iter 30 value 215.737470
## iter 40 value 212.920215
## iter 50 value 208.412943
## iter 60 value 204.782370
## iter 70 value 200.894971
## iter 80 value 199.824789
```

```
## iter 90 value 199.349456
## iter 100 value 199.176946
## final value 199.176946
## stopped after 100 iterations
## # weights: 150
## initial value 339.794555
## iter 10 value 251.835458
## iter 20 value 243.588679
## iter 30 value 229.847349
## iter 40 value 210.195390
## iter 50 value 201.907175
## iter 60 value 199.667260
## iter 70 value 198.635510
## iter 80 value 197.849058
## iter 90 value 197.484112
## iter 100 value 197.255090
## final value 197.255090
## stopped after 100 iterations
## # weights: 166
## initial value 308.509644
## iter 10 value 254.242119
## iter 20 value 233.719062
## iter 30 value 212.070633
## iter 40 value 205.787820
## iter 50 value 203.603213
## iter 60 value 201.287158
## iter 70 value 200.428626
## iter 80 value 199.917585
## iter 90 value 199.442369
## iter 100 value 199.254618
## final value 199.254618
## stopped after 100 iterations
## # weights: 182
## initial value 443.227222
## iter 10 value 262.327211
## iter 20 value 225.236833
## iter 30 value 216.531404
## iter 40 value 212.576715
## iter 50 value 208.723424
## iter 60 value 203.933381
## iter 70 value 200.646509
## iter 80 value 199.712341
## iter 90 value 197.603460
## iter 100 value 196.506656
## final value 196.506656
## stopped after 100 iterations
## # weights: 198
## initial value 313.065652
## iter 10 value 256.827659
## iter 20 value 244.049304
## iter 30 value 216.204746
## iter 40 value 207.098240
## iter 50 value 203.429785
## iter 60 value 201.481379
```

```
## iter 70 value 198.934484
## iter 80 value 197.085680
## iter 90 value 196.550829
## iter 100 value 196.364840
## final value 196.364840
## stopped after 100 iterations
## # weights: 214
## initial value 363.510591
## iter 10 value 268.591894
## iter 20 value 239.957937
## iter 30 value 215.977396
## iter 40 value 208.517518
## iter 50 value 206.740084
## iter 60 value 203.967126
## iter 70 value 200.536506
## iter 80 value 197.861632
## iter 90 value 196.728779
## iter 100 value 196.404109
## final value 196.404109
## stopped after 100 iterations
## # weights: 230
## initial value 492.112181
## iter 10 value 275.038433
## iter 20 value 264.297509
## iter 30 value 247.992332
## iter 40 value 222.489070
## iter 50 value 210.930893
## iter 60 value 206.797894
## iter 70 value 204.948487
## iter 80 value 202.394525
## iter 90 value 199.398275
## iter 100 value 198.223974
## final value 198.223974
## stopped after 100 iterations
## # weights: 246
## initial value 372.746887
## iter 10 value 264.705710
## iter 20 value 247.431995
## iter 30 value 237.971713
## iter 40 value 221.144512
## iter 50 value 211.390792
## iter 60 value 205.316111
## iter 70 value 203.110208
## iter 80 value 200.397407
## iter 90 value 198.289411
## iter 100 value 197.059971
## final value 197.059971
## stopped after 100 iterations
## # weights: 102
## initial value 463.882694
## iter 10 value 221.466837
## iter 20 value 191.580115
## iter 30 value 183.720498
## iter 40 value 180.467535
```

```
## iter 50 value 158.863874
## iter 60 value 138.245996
## iter 70 value 135.526729
## iter 80 value 134.121839
## iter 90 value 131.148977
## iter 100 value 128.983760
## final value 128.983760
## stopped after 100 iterations
## # weights: 118
## initial value 319.421669
## iter 10 value 265.045460
## final value 265.045414
## converged
## # weights: 134
## initial value 406.574200
## iter 10 value 265.335116
## iter 20 value 251.141152
## iter 30 value 162.447591
## iter 40 value 138.048490
## iter 50 value 134.420395
## iter 60 value 133.872603
## iter 70 value 133.613099
## iter 80 value 131.355712
## iter 90 value 129.468610
## iter 100 value 129.306660
## final value 129.306660
## stopped after 100 iterations
## # weights: 150
## initial value 333.565230
## iter 10 value 265.046850
## final value 265.045407
## converged
## # weights: 166
## initial value 413.019692
## iter 10 value 265.045672
## final value 265.045412
## converged
## # weights: 182
## initial value 351.128688
## iter 10 value 265.564830
## iter 20 value 203.013575
## iter 30 value 186.650619
## iter 40 value 186.081331
## iter 50 value 185.619489
## iter 60 value 185.549584
## iter 70 value 185.540058
## iter 80 value 185.538699
## iter 90 value 185.538505
## iter 90 value 185.538505
## iter 90 value 185.538504
## final value 185.538504
## converged
## # weights: 198
## initial value 396.618058
```

```
## iter 10 value 265.051647
## iter 20 value 264.511532
## iter 30 value 251.955919
## iter 40 value 216.732119
## iter 50 value 213.041026
## iter 60 value 209.623941
## iter 70 value 202.175212
## iter 80 value 191.190740
## iter 90 value 190.892569
## iter 100 value 188.300982
## final value 188.300982
## stopped after 100 iterations
## # weights: 214
## initial value 345.108584
## iter 10 value 262.525018
## iter 20 value 221.166924
## iter 30 value 196.034805
## iter 40 value 177.345818
## iter 50 value 174.770818
## iter 60 value 173.410190
## iter 70 value 171.806153
## iter 80 value 171.682362
## iter 90 value 171.659033
## iter 100 value 171.639163
## final value 171.639163
## stopped after 100 iterations
## # weights: 230
## initial value 488.237668
## iter 10 value 258.925217
## iter 20 value 234.783136
## iter 30 value 228.368406
## iter 40 value 226.870188
## iter 50 value 226.584024
## iter 60 value 226.533345
## iter 70 value 226.521200
## iter 80 value 226.515256
## iter 90 value 226.512919
## iter 100 value 226.511834
## final value 226.511834
## stopped after 100 iterations
## # weights: 246
## initial value 437.593909
## iter 10 value 265.152004
## final value 265.045356
## converged
## # weights: 102
## initial value 304.023327
## iter 10 value 245.414404
## iter 20 value 196.079102
## iter 30 value 191.121538
## iter 40 value 189.401569
## iter 50 value 173.651444
## iter 60 value 135.080101
## iter 70 value 114.960473
```

```
## iter 80 value 108.790693
## iter 90 value 104.441470
## iter 100 value 92.354100
## final value 92.354100
## stopped after 100 iterations
## # weights: 118
## initial value 332.220972
## iter 10 value 265.246015
## iter 20 value 263.802518
## iter 30 value 251.055797
## iter 40 value 215.031449
## iter 50 value 177.778900
## iter 60 value 173.628990
## iter 70 value 170.849218
## iter 80 value 146.033505
## iter 90 value 130.468371
## iter 100 value 110.478369
## final value 110.478369
## stopped after 100 iterations
## # weights: 134
## initial value 324.881394
## iter 10 value 262.556683
## iter 20 value 231.596942
## iter 30 value 194.261678
## iter 40 value 183.066746
## iter 50 value 177.689433
## iter 60 value 171.785928
## iter 70 value 155.573312
## iter 80 value 133.727941
## iter 90 value 115.272335
## iter 100 value 106.912355
## final value 106.912355
## stopped after 100 iterations
## # weights: 150
## initial value 413.957951
## iter 10 value 263.449898
## iter 20 value 207.084873
## iter 30 value 160.325204
## iter 40 value 153.442616
## iter 50 value 131.185494
## iter 60 value 116.336108
## iter 70 value 109.259709
## iter 80 value 106.347299
## iter 90 value 101.017005
## iter 100 value 91.304319
## final value 91.304319
## stopped after 100 iterations
## # weights: 166
## initial value 297.776666
## iter 10 value 266.570178
## iter 20 value 217.392885
## iter 30 value 178.950769
## iter 40 value 171.657394
## iter 50 value 170.842174
```

```
## iter 60 value 165.543289
## iter 70 value 147.475585
## iter 80 value 135.937482
## iter 90 value 125.262248
## iter 100 value 111.132929
## final value 111.132929
## stopped after 100 iterations
## # weights: 182
## initial value 349.993497
## iter 10 value 261.489847
## iter 20 value 217.600723
## iter 30 value 196.633328
## iter 40 value 193.661861
## iter 50 value 186.841350
## iter 60 value 159.386375
## iter 70 value 142.687243
## iter 80 value 134.880621
## iter 90 value 129.901299
## iter 100 value 112.139769
## final value 112.139769
## stopped after 100 iterations
## # weights: 198
## initial value 377.185154
## iter 10 value 265.142562
## iter 20 value 224.070954
## iter 30 value 204.146503
## iter 40 value 174.160057
## iter 50 value 162.582982
## iter 60 value 154.482030
## iter 70 value 120.988639
## iter 80 value 105.896650
## iter 90 value 102.227081
## iter 100 value 98.965040
## final value 98.965040
## stopped after 100 iterations
## # weights: 214
## initial value 372.233814
## iter 10 value 265.359871
## iter 20 value 256.850213
## iter 30 value 195.162194
## iter 40 value 191.687558
## iter 50 value 166.646182
## iter 60 value 143.366335
## iter 70 value 122.191238
## iter 80 value 106.741360
## iter 90 value 104.116336
## iter 100 value 100.790987
## final value 100.790987
## stopped after 100 iterations
## # weights: 230
## initial value 658.383498
## iter 10 value 264.018049
## iter 20 value 203.100503
## iter 30 value 196.187506
```



```
## iter 40 value 191.999915
## iter 50 value 160.209123
## iter 60 value 137.385303
## iter 70 value 122.210635
## iter 80 value 115.353833
## iter 90 value 103.862468
## iter 100 value 95.561630
## final value 95.561630
## stopped after 100 iterations
## # weights: 246
## initial value 369.137672
## iter 10 value 265.494781
## iter 20 value 264.432867
## iter 30 value 237.525516
## iter 40 value 187.670011
## iter 50 value 166.649344
## iter 60 value 134.885465
## iter 70 value 114.958332
## iter 80 value 112.306832
## iter 90 value 108.742432
## iter 100 value 108.015966
## final value 108.015966
## stopped after 100 iterations
## # weights: 102
## initial value 294.269824
## iter 10 value 265.322449
## iter 20 value 263.655319
## iter 30 value 196.935468
## iter 40 value 180.950938
## iter 50 value 172.186966
## iter 60 value 152.577191
## iter 70 value 136.822631
## iter 80 value 130.550796
## iter 90 value 126.674056
## iter 100 value 120.718711
## final value 120.718711
## stopped after 100 iterations
## # weights: 118
## initial value 306.133740
## iter 10 value 263.811672
## iter 20 value 237.720208
## iter 30 value 216.111442
## iter 40 value 188.598688
## iter 50 value 164.081455
## iter 60 value 151.785736
## iter 70 value 141.950315
## iter 80 value 133.569350
## iter 90 value 126.688777
## iter 100 value 121.040381
## final value 121.040381
## stopped after 100 iterations
## # weights: 134
## initial value 337.385706
## iter 10 value 266.698850
```

```
## iter 20 value 264.671407
## iter 30 value 229.739442
## iter 40 value 191.585389
## iter 50 value 164.899513
## iter 60 value 151.851721
## iter 70 value 149.502303
## iter 80 value 143.360518
## iter 90 value 132.695566
## iter 100 value 124.020380
## final value 124.020380
## stopped after 100 iterations
## # weights: 150
## initial value 331.328657
## iter 10 value 265.465455
## iter 20 value 242.527977
## iter 30 value 198.052937
## iter 40 value 193.573027
## iter 50 value 185.905894
## iter 60 value 177.277893
## iter 70 value 152.865257
## iter 80 value 146.782931
## iter 90 value 142.762454
## iter 100 value 131.556297
## final value 131.556297
## stopped after 100 iterations
## # weights: 166
## initial value 321.258083
## iter 10 value 265.455211
## iter 20 value 241.889611
## iter 30 value 218.902031
## iter 40 value 188.315645
## iter 50 value 164.744126
## iter 60 value 154.982270
## iter 70 value 153.063360
## iter 80 value 144.564813
## iter 90 value 142.258811
## iter 100 value 128.840779
## final value 128.840779
## stopped after 100 iterations
## # weights: 182
## initial value 322.645408
## iter 10 value 266.166147
## iter 20 value 232.050222
## iter 30 value 198.747329
## iter 40 value 187.134787
## iter 50 value 166.670129
## iter 60 value 152.860825
## iter 70 value 142.990383
## iter 80 value 137.689375
## iter 90 value 131.527189
## iter 100 value 130.305707
## final value 130.305707
## stopped after 100 iterations
## # weights: 198
```

```
## initial value 376.744172
## iter 10 value 280.524952
## iter 20 value 266.588118
## iter 30 value 256.020013
## iter 40 value 208.414283
## iter 50 value 197.396684
## iter 60 value 188.465599
## iter 70 value 172.858044
## iter 80 value 143.713690
## iter 90 value 126.980591
## iter 100 value 117.412780
## final value 117.412780
## stopped after 100 iterations
## # weights: 214
## initial value 336.444040
## iter 10 value 283.395095
## iter 20 value 217.094018
## iter 30 value 185.968858
## iter 40 value 177.880663
## iter 50 value 174.316242
## iter 60 value 160.534588
## iter 70 value 149.066998
## iter 80 value 141.643182
## iter 90 value 133.584308
## iter 100 value 129.124488
## final value 129.124488
## stopped after 100 iterations
## # weights: 230
## initial value 348.658852
## iter 10 value 263.346726
## iter 20 value 205.570854
## iter 30 value 195.067674
## iter 40 value 189.503558
## iter 50 value 173.082283
## iter 60 value 164.346722
## iter 70 value 155.245478
## iter 80 value 134.607577
## iter 90 value 122.869070
## iter 100 value 115.574437
## final value 115.574437
## stopped after 100 iterations
## # weights: 246
## initial value 464.528113
## iter 10 value 266.628691
## iter 20 value 232.912500
## iter 30 value 195.786851
## iter 40 value 192.810971
## iter 50 value 182.297223
## iter 60 value 153.961699
## iter 70 value 136.438709
## iter 80 value 121.294076
## iter 90 value 116.217120
## iter 100 value 113.258072
## final value 113.258072
```

```
## stopped after 100 iterations
## # weights: 102
## initial value 408.009799
## iter 10 value 261.090219
## iter 20 value 234.444483
## iter 30 value 226.266276
## iter 40 value 217.010354
## iter 50 value 210.919538
## iter 60 value 209.492523
## iter 70 value 207.122358
## iter 80 value 204.962162
## iter 90 value 204.632062
## iter 100 value 204.609064
## final value 204.609064
## stopped after 100 iterations
## # weights: 118
## initial value 383.848320
## iter 10 value 266.952402
## iter 20 value 262.567962
## iter 30 value 250.354367
## iter 40 value 223.804565
## iter 50 value 215.951754
## iter 60 value 210.561792
## iter 70 value 209.031517
## iter 80 value 207.333028
## iter 90 value 205.781985
## iter 100 value 205.448207
## final value 205.448207
## stopped after 100 iterations
## # weights: 134
## initial value 519.726782
## iter 10 value 275.806847
## iter 20 value 248.897903
## iter 30 value 233.576444
## iter 40 value 224.860235
## iter 50 value 222.790888
## iter 60 value 211.002383
## iter 70 value 206.242896
## iter 80 value 204.700581
## iter 90 value 204.178180
## iter 100 value 203.717445
## final value 203.717445
## stopped after 100 iterations
## # weights: 150
## initial value 414.721026
## iter 10 value 274.582861
## iter 20 value 267.264997
## iter 30 value 253.200259
## iter 40 value 222.984043
## iter 50 value 213.021421
## iter 60 value 210.669081
## iter 70 value 207.295309
## iter 80 value 206.131927
## iter 90 value 205.428646
```

```
## iter 100 value 205.073999
## final value 205.073999
## stopped after 100 iterations
## # weights: 166
## initial value 433.787399
## iter 10 value 358.639064
## iter 20 value 270.237442
## iter 30 value 259.581825
## iter 40 value 243.540531
## iter 50 value 228.400789
## iter 60 value 224.994877
## iter 70 value 215.649493
## iter 80 value 213.268604
## iter 90 value 208.814154
## iter 100 value 205.308653
## final value 205.308653
## stopped after 100 iterations
## # weights: 182
## initial value 387.617129
## iter 10 value 334.362218
## iter 20 value 319.134860
## iter 30 value 309.402388
## iter 40 value 280.362202
## iter 50 value 213.620498
## iter 60 value 210.486194
## iter 70 value 208.290247
## iter 80 value 205.034595
## iter 90 value 203.322815
## iter 100 value 202.175670
## final value 202.175670
## stopped after 100 iterations
## # weights: 198
## initial value 363.991770
## iter 10 value 277.516102
## iter 20 value 248.553421
## iter 30 value 234.535463
## iter 40 value 218.739610
## iter 50 value 209.361337
## iter 60 value 204.101363
## iter 70 value 202.849023
## iter 80 value 201.685050
## iter 90 value 200.962972
## iter 100 value 200.820609
## final value 200.820609
## stopped after 100 iterations
## # weights: 214
## initial value 346.258084
## iter 10 value 288.749299
## iter 20 value 249.233783
## iter 30 value 235.033726
## iter 40 value 217.777723
## iter 50 value 207.121754
## iter 60 value 203.436993
## iter 70 value 202.404950
```

```
## iter 80 value 201.855241
## iter 90 value 201.451068
## iter 100 value 201.054677
## final value 201.054677
## stopped after 100 iterations
## # weights: 230
## initial value 447.528996
## iter 10 value 264.218672
## iter 20 value 247.484402
## iter 30 value 230.579373
## iter 40 value 220.510069
## iter 50 value 212.838989
## iter 60 value 207.378143
## iter 70 value 204.862891
## iter 80 value 202.371206
## iter 90 value 201.266401
## iter 100 value 200.473480
## final value 200.473480
## stopped after 100 iterations
## # weights: 246
## initial value 455.569400
## iter 10 value 288.303877
## iter 20 value 251.672625
## iter 30 value 235.341897
## iter 40 value 220.246737
## iter 50 value 214.481526
## iter 60 value 206.835250
## iter 70 value 203.570974
## iter 80 value 202.500776
## iter 90 value 201.253770
## iter 100 value 200.042756
## final value 200.042756
## stopped after 100 iterations
## # weights: 102
## initial value 394.643046
## iter 10 value 247.196179
## final value 246.684722
## converged
## # weights: 118
## initial value 465.814709
## iter 10 value 246.686800
## final value 246.684685
## converged
## # weights: 134
## initial value 352.539214
## iter 10 value 246.684873
## iter 20 value 245.379726
## iter 30 value 212.740478
## iter 40 value 187.950095
## iter 50 value 181.723270
## iter 60 value 181.058674
## iter 70 value 180.929310
## iter 80 value 180.908271
## iter 90 value 180.906915
```

```
## iter 100 value 180.903276
## final value 180.903276
## stopped after 100 iterations
## # weights: 150
## initial value 436.221361
## iter 10 value 248.054196
## iter 20 value 246.492425
## iter 30 value 229.270416
## iter 40 value 182.457019
## iter 50 value 180.017031
## iter 60 value 179.943866
## iter 70 value 179.120521
## iter 80 value 178.933304
## iter 90 value 178.767688
## iter 100 value 178.752845
## final value 178.752845
## stopped after 100 iterations
## # weights: 166
## initial value 299.883961
## iter 10 value 262.097182
## iter 20 value 190.625665
## iter 30 value 180.950879
## iter 40 value 179.035327
## iter 50 value 176.515329
## iter 60 value 163.690670
## iter 70 value 131.449913
## iter 80 value 108.344190
## iter 90 value 101.848501
## iter 100 value 97.703206
## final value 97.703206
## stopped after 100 iterations
## # weights: 182
## initial value 295.302792
## iter 10 value 246.698398
## iter 20 value 244.826336
## iter 30 value 212.611879
## iter 40 value 206.226774
## iter 50 value 202.145263
## iter 60 value 197.444703
## iter 70 value 191.220810
## iter 80 value 188.324941
## iter 90 value 186.934393
## iter 100 value 186.710135
## final value 186.710135
## stopped after 100 iterations
## # weights: 198
## initial value 421.892658
## iter 10 value 256.090392
## iter 20 value 213.525813
## iter 30 value 196.718139
## iter 40 value 192.217556
## iter 50 value 192.168281
## iter 60 value 189.749334
## iter 70 value 189.667566
```

```
## iter 80 value 189.160569
## iter 90 value 166.881485
## iter 100 value 161.166404
## final value 161.166404
## stopped after 100 iterations
## # weights: 214
## initial value 341.235708
## iter 10 value 249.385096
## iter 20 value 246.470471
## iter 30 value 241.129530
## iter 40 value 211.121664
## iter 50 value 156.906138
## iter 60 value 129.639515
## iter 70 value 126.008079
## iter 80 value 125.164069
## iter 90 value 124.443058
## iter 100 value 123.746192
## final value 123.746192
## stopped after 100 iterations
## # weights: 230
## initial value 395.519025
## iter 10 value 246.707700
## final value 246.684660
## converged
## # weights: 246
## initial value 364.204763
## iter 10 value 246.685885
## final value 246.684725
## converged
## # weights: 102
## initial value 384.710165
## iter 10 value 240.903066
## iter 20 value 212.908578
## iter 30 value 168.307843
## iter 40 value 156.181706
## iter 50 value 153.015724
## iter 60 value 152.747241
## iter 70 value 141.242849
## iter 80 value 130.185756
## iter 90 value 114.185649
## iter 100 value 101.458897
## final value 101.458897
## stopped after 100 iterations
## # weights: 118
## initial value 337.093346
## iter 10 value 247.007654
## iter 20 value 232.816588
## iter 30 value 200.382414
## iter 40 value 180.534932
## iter 50 value 166.519945
## iter 60 value 153.250904
## iter 70 value 121.499523
## iter 80 value 98.227148
## iter 90 value 89.431269
```



```
## iter 100 value 87.457910
## final value 87.457910
## stopped after 100 iterations
## # weights: 134
## initial value 357.700564
## iter 10 value 232.655552
## iter 20 value 189.570380
## iter 30 value 175.433933
## iter 40 value 152.829250
## iter 50 value 144.455006
## iter 60 value 143.606881
## iter 70 value 141.748184
## iter 80 value 123.908845
## iter 90 value 113.738169
## iter 100 value 107.370324
## final value 107.370324
## stopped after 100 iterations
## # weights: 150
## initial value 529.676936
## iter 10 value 239.081624
## iter 20 value 208.786582
## iter 30 value 167.730485
## iter 40 value 144.327511
## iter 50 value 128.885772
## iter 60 value 125.470091
## iter 70 value 125.389800
## iter 80 value 123.940357
## iter 90 value 116.717120
## iter 100 value 106.587780
## final value 106.587780
## stopped after 100 iterations
## # weights: 166
## initial value 314.028903
## iter 10 value 246.906450
## iter 20 value 246.418785
## iter 30 value 203.691348
## iter 40 value 179.148049
## iter 50 value 152.098283
## iter 60 value 138.377471
## iter 70 value 110.446035
## iter 80 value 102.619900
## iter 90 value 102.171350
## iter 100 value 92.810163
## final value 92.810163
## stopped after 100 iterations
## # weights: 182
## initial value 461.827498
## iter 10 value 227.414245
## iter 20 value 180.042141
## iter 30 value 157.661686
## iter 40 value 146.388477
## iter 50 value 130.515298
## iter 60 value 109.748760
## iter 70 value 97.633326
```

```
## iter 80 value 91.006617
## iter 90 value 89.413720
## iter 100 value 89.150236
## final value 89.150236
## stopped after 100 iterations
## # weights: 198
## initial value 389.497247
## iter 10 value 247.109479
## iter 20 value 245.728235
## iter 30 value 188.097733
## iter 40 value 163.961330
## iter 50 value 140.167686
## iter 60 value 129.655030
## iter 70 value 128.011161
## iter 80 value 124.273438
## iter 90 value 114.191321
## iter 100 value 105.165510
## final value 105.165510
## stopped after 100 iterations
## # weights: 214
## initial value 332.228717
## iter 10 value 243.301885
## iter 20 value 209.013858
## iter 30 value 187.862645
## iter 40 value 186.748072
## iter 50 value 169.305570
## iter 60 value 152.704776
## iter 70 value 131.469589
## iter 80 value 128.560537
## iter 90 value 122.353468
## iter 100 value 113.782767
## final value 113.782767
## stopped after 100 iterations
## # weights: 230
## initial value 504.948951
## iter 10 value 247.165426
## iter 20 value 240.382859
## iter 30 value 205.855990
## iter 40 value 201.640317
## iter 50 value 180.655991
## iter 60 value 178.436844
## iter 70 value 177.078976
## iter 80 value 171.532866
## iter 90 value 141.108685
## iter 100 value 124.882197
## final value 124.882197
## stopped after 100 iterations
## # weights: 246
## initial value 303.276682
## iter 10 value 247.113013
## iter 20 value 246.481003
## iter 30 value 223.892025
## iter 40 value 194.268940
## iter 50 value 159.732669
```

```
## iter 60 value 141.061585
## iter 70 value 135.771655
## iter 80 value 134.900361
## iter 90 value 122.627130
## iter 100 value 101.690201
## final value 101.690201
## stopped after 100 iterations
## # weights: 102
## initial value 395.297511
## iter 10 value 246.923466
## iter 20 value 246.077264
## iter 30 value 235.459186
## iter 40 value 198.183556
## iter 50 value 161.336688
## iter 60 value 149.410439
## iter 70 value 141.987645
## iter 80 value 135.096171
## iter 90 value 129.193687
## iter 100 value 128.216861
## final value 128.216861
## stopped after 100 iterations
## # weights: 118
## initial value 403.182457
## iter 10 value 245.879463
## iter 20 value 236.558749
## iter 30 value 218.770691
## iter 40 value 201.319333
## iter 50 value 193.960054
## iter 60 value 173.673690
## iter 70 value 165.558955
## iter 80 value 159.646727
## iter 90 value 149.330878
## iter 100 value 142.320688
## final value 142.320688
## stopped after 100 iterations
## # weights: 134
## initial value 343.645912
## iter 10 value 249.423241
## iter 20 value 243.265245
## iter 30 value 216.340960
## iter 40 value 173.265773
## iter 50 value 151.200823
## iter 60 value 148.081604
## iter 70 value 144.197876
## iter 80 value 139.865485
## iter 90 value 138.942796
## iter 100 value 138.017516
## final value 138.017516
## stopped after 100 iterations
## # weights: 150
## initial value 310.252355
## iter 10 value 240.006445
## iter 20 value 217.626836
## iter 30 value 179.888037
```

```
## iter 40 value 168.095776
## iter 50 value 149.233297
## iter 60 value 142.676468
## iter 70 value 139.669757
## iter 80 value 136.826114
## iter 90 value 130.840843
## iter 100 value 126.345466
## final value 126.345466
## stopped after 100 iterations
## # weights: 166
## initial value 448.588946
## iter 10 value 247.953561
## iter 20 value 245.612495
## iter 30 value 229.373345
## iter 40 value 189.601025
## iter 50 value 166.852023
## iter 60 value 156.817842
## iter 70 value 147.415593
## iter 80 value 137.039701
## iter 90 value 125.812351
## iter 100 value 119.865217
## final value 119.865217
## stopped after 100 iterations
## # weights: 182
## initial value 309.867962
## iter 10 value 248.694089
## iter 20 value 236.942366
## iter 30 value 229.396516
## iter 40 value 218.436475
## iter 50 value 182.888524
## iter 60 value 173.185766
## iter 70 value 162.584908
## iter 80 value 153.121870
## iter 90 value 149.136336
## iter 100 value 142.589799
## final value 142.589799
## stopped after 100 iterations
## # weights: 198
## initial value 517.492419
## iter 10 value 247.379683
## iter 20 value 246.154518
## iter 30 value 234.675605
## iter 40 value 209.238982
## iter 50 value 182.824558
## iter 60 value 151.535242
## iter 70 value 137.935261
## iter 80 value 132.115698
## iter 90 value 125.964172
## iter 100 value 120.502211
## final value 120.502211
## stopped after 100 iterations
## # weights: 214
## initial value 303.679104
## iter 10 value 240.391773
```

```
## iter 20 value 193.079053
## iter 30 value 177.312562
## iter 40 value 175.035935
## iter 50 value 168.093277
## iter 60 value 162.522020
## iter 70 value 149.307094
## iter 80 value 144.736562
## iter 90 value 143.673161
## iter 100 value 138.179027
## final value 138.179027
## stopped after 100 iterations
## # weights: 230
## initial value 371.511661
## iter 10 value 248.418022
## iter 20 value 201.870269
## iter 30 value 186.360643
## iter 40 value 174.972693
## iter 50 value 158.017615
## iter 60 value 139.540603
## iter 70 value 130.361564
## iter 80 value 125.809448
## iter 90 value 122.091142
## iter 100 value 118.784673
## final value 118.784673
## stopped after 100 iterations
## # weights: 246
## initial value 582.167778
## iter 10 value 248.898309
## iter 20 value 246.893654
## iter 30 value 231.916380
## iter 40 value 181.450636
## iter 50 value 168.798239
## iter 60 value 164.834666
## iter 70 value 153.602793
## iter 80 value 150.257859
## iter 90 value 148.652340
## iter 100 value 146.620658
## final value 146.620658
## stopped after 100 iterations
## # weights: 102
## initial value 371.264344
## iter 10 value 251.443883
## iter 20 value 224.628080
## iter 30 value 214.417333
## iter 40 value 204.935411
## iter 50 value 199.288193
## iter 60 value 196.727135
## iter 70 value 196.309665
## iter 80 value 196.115231
## iter 90 value 196.007168
## iter 100 value 195.979931
## final value 195.979931
## stopped after 100 iterations
## # weights: 118
```

```
## initial value 398.946153
## iter 10 value 250.692438
## iter 20 value 242.932686
## iter 30 value 216.251565
## iter 40 value 207.435912
## iter 50 value 203.131778
## iter 60 value 201.004328
## iter 70 value 199.990234
## iter 80 value 198.565282
## iter 90 value 198.099447
## iter 100 value 197.422721
## final value 197.422721
## stopped after 100 iterations
## # weights: 134
## initial value 352.786420
## iter 10 value 255.289913
## iter 20 value 227.146503
## iter 30 value 213.783796
## iter 40 value 204.896698
## iter 50 value 202.247027
## iter 60 value 199.978687
## iter 70 value 198.253657
## iter 80 value 196.843300
## iter 90 value 196.411268
## iter 100 value 196.157246
## final value 196.157246
## stopped after 100 iterations
## # weights: 150
## initial value 420.526352
## iter 10 value 252.828934
## iter 20 value 250.480776
## iter 30 value 238.411899
## iter 40 value 214.877864
## iter 50 value 205.535389
## iter 60 value 199.587103
## iter 70 value 196.607540
## iter 80 value 195.134467
## iter 90 value 194.623998
## iter 100 value 194.265679
## final value 194.265679
## stopped after 100 iterations
## # weights: 166
## initial value 419.030966
## iter 10 value 252.273506
## iter 20 value 244.356387
## iter 30 value 220.143789
## iter 40 value 216.097846
## iter 50 value 212.441781
## iter 60 value 204.187052
## iter 70 value 198.409454
## iter 80 value 196.607571
## iter 90 value 194.845615
## iter 100 value 194.255299
## final value 194.255299
```

```
## stopped after 100 iterations
## # weights: 182
## initial value 508.819466
## iter 10 value 253.570903
## iter 20 value 249.939037
## iter 30 value 228.419868
## iter 40 value 216.964738
## iter 50 value 207.987892
## iter 60 value 200.546080
## iter 70 value 197.773461
## iter 80 value 196.279760
## iter 90 value 195.211903
## iter 100 value 194.173413
## final value 194.173413
## stopped after 100 iterations
## # weights: 198
## initial value 462.540485
## iter 10 value 263.615351
## iter 20 value 248.253828
## iter 30 value 238.699560
## iter 40 value 217.465064
## iter 50 value 206.178695
## iter 60 value 199.066070
## iter 70 value 196.562618
## iter 80 value 195.742457
## iter 90 value 194.486180
## iter 100 value 193.643448
## final value 193.643448
## stopped after 100 iterations
## # weights: 214
## initial value 497.114303
## iter 10 value 315.076131
## iter 20 value 282.128401
## iter 30 value 269.078037
## iter 40 value 223.258066
## iter 50 value 210.324421
## iter 60 value 202.301732
## iter 70 value 199.116313
## iter 80 value 197.055919
## iter 90 value 195.127163
## iter 100 value 193.315175
## final value 193.315175
## stopped after 100 iterations
## # weights: 230
## initial value 386.873622
## iter 10 value 256.828041
## iter 20 value 248.311919
## iter 30 value 234.719170
## iter 40 value 224.035537
## iter 50 value 204.284273
## iter 60 value 199.037550
## iter 70 value 196.949474
## iter 80 value 195.206442
## iter 90 value 194.185029
```

```
## iter 100 value 193.789120
## final value 193.789120
## stopped after 100 iterations
## # weights: 246
## initial value 320.458391
## iter 10 value 251.077149
## iter 20 value 246.512468
## iter 30 value 238.003590
## iter 40 value 217.417106
## iter 50 value 202.180238
## iter 60 value 197.348660
## iter 70 value 194.203139
## iter 80 value 193.308434
## iter 90 value 192.595660
## iter 100 value 192.138288
## final value 192.138288
## stopped after 100 iterations
## # weights: 102
## initial value 430.975649
## iter 10 value 241.870339
## final value 241.783000
## converged
## # weights: 118
## initial value 405.755111
## iter 10 value 248.050961
## final value 241.783011
## converged
## # weights: 134
## initial value 423.879668
## iter 10 value 241.783179
## final value 241.783024
## converged
## # weights: 150
## initial value 390.179426
## iter 10 value 238.457644
## iter 20 value 189.532325
## iter 30 value 155.782766
## iter 40 value 148.532073
## iter 50 value 145.972417
## iter 60 value 133.171587
## iter 70 value 131.381932
## iter 80 value 130.093893
## iter 90 value 129.708126
## iter 100 value 129.573905
## final value 129.573905
## stopped after 100 iterations
## # weights: 166
## initial value 308.935818
## iter 10 value 238.878602
## iter 20 value 210.982407
## iter 30 value 159.994275
## iter 40 value 146.629942
## iter 50 value 143.435744
## iter 60 value 143.268914
```



```
## iter 70 value 143.203136
## iter 80 value 143.185944
## iter 90 value 143.179419
## iter 100 value 143.173458
## final value 143.173458
## stopped after 100 iterations
## # weights: 182
## initial value 430.744217
## iter 10 value 241.788618
## iter 20 value 234.164427
## iter 30 value 205.227268
## iter 40 value 155.805273
## iter 50 value 139.830489
## iter 60 value 137.444254
## iter 70 value 135.318674
## iter 80 value 132.662405
## iter 90 value 131.928412
## iter 100 value 130.182993
## final value 130.182993
## stopped after 100 iterations
## # weights: 198
## initial value 405.859729
## iter 10 value 241.783421
## final value 241.783012
## converged
## # weights: 214
## initial value 438.228573
## iter 10 value 242.987465
## iter 20 value 240.718867
## iter 30 value 209.572349
## iter 40 value 201.248051
## iter 50 value 198.700721
## iter 60 value 197.694761
## iter 70 value 197.473459
## iter 80 value 197.437798
## iter 90 value 197.431477
## iter 100 value 197.429945
## final value 197.429945
## stopped after 100 iterations
## # weights: 230
## initial value 338.638912
## iter 10 value 241.493772
## iter 20 value 223.178661
## iter 30 value 198.061820
## iter 40 value 188.018795
## iter 50 value 186.769085
## iter 60 value 184.705470
## iter 70 value 177.300015
## iter 80 value 169.069498
## iter 90 value 157.951152
## iter 100 value 129.789092
## final value 129.789092
## stopped after 100 iterations
## # weights: 246
```

```
## initial value 327.834439
## iter 10 value 242.847087
## iter 20 value 228.745934
## iter 30 value 173.377551
## iter 40 value 162.899354
## iter 50 value 138.030925
## iter 60 value 126.481447
## iter 70 value 122.101819
## iter 80 value 120.479622
## iter 90 value 120.375775
## iter 100 value 120.262813
## final value 120.262813
## stopped after 100 iterations
## # weights: 102
## initial value 390.456903
## iter 10 value 212.730467
## iter 20 value 168.787671
## iter 30 value 163.122229
## iter 40 value 157.878412
## iter 50 value 154.469558
## iter 60 value 153.555894
## iter 70 value 144.965473
## iter 80 value 137.857532
## iter 90 value 120.800476
## iter 100 value 117.716410
## final value 117.716410
## stopped after 100 iterations
## # weights: 118
## initial value 331.213650
## iter 10 value 242.003024
## iter 20 value 241.256355
## iter 30 value 200.569014
## iter 40 value 182.949005
## iter 50 value 177.821813
## iter 60 value 166.615864
## iter 70 value 152.553237
## iter 80 value 149.573121
## iter 90 value 148.193929
## iter 100 value 147.114747
## final value 147.114747
## stopped after 100 iterations
## # weights: 134
## initial value 327.364322
## iter 10 value 242.071338
## iter 20 value 240.679940
## iter 30 value 212.604585
## iter 40 value 205.538344
## iter 50 value 191.336453
## iter 60 value 176.942010
## iter 70 value 148.674031
## iter 80 value 131.405020
## iter 90 value 128.658376
## iter 100 value 125.276665
## final value 125.276665
```

```
## stopped after 100 iterations
## # weights: 150
## initial value 432.649828
## iter 10 value 241.956616
## iter 20 value 189.748924
## iter 30 value 162.681469
## iter 40 value 137.894847
## iter 50 value 132.882980
## iter 60 value 132.379744
## iter 70 value 131.752554
## iter 80 value 118.760010
## iter 90 value 114.951491
## iter 100 value 111.499156
## final value 111.499156
## stopped after 100 iterations
## # weights: 166
## initial value 562.593927
## iter 10 value 243.205058
## iter 20 value 181.039691
## iter 30 value 177.570327
## iter 40 value 157.636865
## iter 50 value 156.280596
## iter 60 value 142.152822
## iter 70 value 135.481145
## iter 80 value 124.550468
## iter 90 value 118.093646
## iter 100 value 115.071173
## final value 115.071173
## stopped after 100 iterations
## # weights: 182
## initial value 433.147817
## iter 10 value 242.055347
## iter 20 value 241.787207
## iter 30 value 207.724403
## iter 40 value 178.494455
## iter 50 value 164.254668
## iter 60 value 142.502180
## iter 70 value 138.188022
## iter 80 value 136.581242
## iter 90 value 134.591206
## iter 100 value 125.084158
## final value 125.084158
## stopped after 100 iterations
## # weights: 198
## initial value 482.361609
## iter 10 value 270.312553
## iter 20 value 170.702679
## iter 30 value 151.737204
## iter 40 value 136.182314
## iter 50 value 131.779571
## iter 60 value 125.644622
## iter 70 value 111.793740
## iter 80 value 95.472469
## iter 90 value 85.190118
```

```
## iter 100 value 81.396071
## final value 81.396071
## stopped after 100 iterations
## # weights: 214
## initial value 347.143877
## iter 10 value 241.860230
## iter 20 value 203.061277
## iter 30 value 189.220228
## iter 40 value 185.218022
## iter 50 value 156.973974
## iter 60 value 138.148426
## iter 70 value 122.335854
## iter 80 value 107.196459
## iter 90 value 95.496572
## iter 100 value 84.630948
## final value 84.630948
## stopped after 100 iterations
## # weights: 230
## initial value 279.934300
## iter 10 value 213.308638
## iter 20 value 189.341886
## iter 30 value 170.687886
## iter 40 value 143.595171
## iter 50 value 126.151685
## iter 60 value 119.727603
## iter 70 value 117.867242
## iter 80 value 114.124009
## iter 90 value 101.406606
## iter 100 value 89.935007
## final value 89.935007
## stopped after 100 iterations
## # weights: 246
## initial value 353.486842
## iter 10 value 243.331164
## iter 20 value 241.699489
## iter 30 value 220.302832
## iter 40 value 169.894520
## iter 50 value 154.168809
## iter 60 value 146.892768
## iter 70 value 142.655139
## iter 80 value 120.743783
## iter 90 value 110.470326
## iter 100 value 107.276491
## final value 107.276491
## stopped after 100 iterations
## # weights: 102
## initial value 302.535041
## iter 10 value 242.402472
## iter 20 value 229.748554
## iter 30 value 205.919573
## iter 40 value 168.656155
## iter 50 value 160.114098
## iter 60 value 158.869827
## iter 70 value 154.064792
```

```
## iter 80 value 144.811751
## iter 90 value 138.184937
## iter 100 value 134.566192
## final value 134.566192
## stopped after 100 iterations
## # weights: 118
## initial value 326.910593
## iter 10 value 242.327254
## iter 20 value 233.463674
## iter 30 value 200.326294
## iter 40 value 187.730756
## iter 50 value 172.733289
## iter 60 value 152.757558
## iter 70 value 147.427453
## iter 80 value 142.498326
## iter 90 value 138.669637
## iter 100 value 133.874792
## final value 133.874792
## stopped after 100 iterations
## # weights: 134
## initial value 342.929080
## iter 10 value 248.306046
## iter 20 value 246.431614
## iter 30 value 229.066190
## iter 40 value 195.795069
## iter 50 value 169.990760
## iter 60 value 163.960575
## iter 70 value 149.414903
## iter 80 value 141.346098
## iter 90 value 137.397814
## iter 100 value 135.040774
## final value 135.040774
## stopped after 100 iterations
## # weights: 150
## initial value 420.735949
## iter 10 value 242.699256
## iter 20 value 237.952462
## iter 30 value 225.838869
## iter 40 value 177.419272
## iter 50 value 160.659350
## iter 60 value 157.655783
## iter 70 value 152.989229
## iter 80 value 148.698907
## iter 90 value 140.584426
## iter 100 value 134.632980
## final value 134.632980
## stopped after 100 iterations
## # weights: 166
## initial value 349.541171
## iter 10 value 222.045808
## iter 20 value 198.851390
## iter 30 value 174.453731
## iter 40 value 155.639855
## iter 50 value 151.907624
```

```
## iter 60 value 139.219397
## iter 70 value 135.266848
## iter 80 value 134.568457
## iter 90 value 131.674316
## iter 100 value 130.785636
## final value 130.785636
## stopped after 100 iterations
## # weights: 182
## initial value 349.353822
## iter 10 value 243.252395
## iter 20 value 213.688064
## iter 30 value 209.878078
## iter 40 value 188.847812
## iter 50 value 171.405023
## iter 60 value 161.822613
## iter 70 value 155.447848
## iter 80 value 149.655045
## iter 90 value 145.295840
## iter 100 value 137.184319
## final value 137.184319
## stopped after 100 iterations
## # weights: 198
## initial value 388.750673
## iter 10 value 251.354821
## iter 20 value 243.054067
## iter 30 value 240.085286
## iter 40 value 217.884111
## iter 50 value 180.030268
## iter 60 value 164.695310
## iter 70 value 160.158573
## iter 80 value 159.090976
## iter 90 value 157.674011
## iter 100 value 149.125377
## final value 149.125377
## stopped after 100 iterations
## # weights: 214
## initial value 496.040719
## iter 10 value 243.264227
## iter 20 value 240.375982
## iter 30 value 210.400623
## iter 40 value 187.123229
## iter 50 value 168.789158
## iter 60 value 161.869027
## iter 70 value 150.135444
## iter 80 value 140.948400
## iter 90 value 134.393852
## iter 100 value 133.073348
## final value 133.073348
## stopped after 100 iterations
## # weights: 230
## initial value 473.870048
## iter 10 value 256.489140
## iter 20 value 240.721410
## iter 30 value 196.410457
```

```
## iter 40 value 184.949067
## iter 50 value 178.629483
## iter 60 value 174.958703
## iter 70 value 167.786206
## iter 80 value 157.663816
## iter 90 value 152.872799
## iter 100 value 151.082330
## final value 151.082330
## stopped after 100 iterations
## # weights: 246
## initial value 411.384545
## iter 10 value 247.754764
## iter 20 value 241.862317
## iter 30 value 212.782611
## iter 40 value 190.814490
## iter 50 value 176.764883
## iter 60 value 164.023146
## iter 70 value 161.730386
## iter 80 value 150.953503
## iter 90 value 143.554522
## iter 100 value 137.256703
## final value 137.256703
## stopped after 100 iterations
## # weights: 102
## initial value 304.767395
## iter 10 value 246.560583
## iter 20 value 243.133137
## iter 30 value 225.143781
## iter 40 value 207.811432
## iter 50 value 202.476913
## iter 60 value 200.736502
## iter 70 value 200.478482
## iter 80 value 200.038925
## iter 90 value 198.630806
## iter 100 value 198.000605
## final value 198.000605
## stopped after 100 iterations
## # weights: 118
## initial value 352.618194
## iter 10 value 252.121515
## iter 20 value 242.689087
## iter 30 value 217.541182
## iter 40 value 207.525501
## iter 50 value 202.988196
## iter 60 value 202.225889
## iter 70 value 201.433602
## iter 80 value 199.482859
## iter 90 value 198.853123
## iter 100 value 198.666042
## final value 198.666042
## stopped after 100 iterations
## # weights: 134
## initial value 308.280091
## iter 10 value 244.911068
```

```
## iter 20 value 238.303275
## iter 30 value 212.822114
## iter 40 value 208.253166
## iter 50 value 202.459311
## iter 60 value 199.643225
## iter 70 value 197.486980
## iter 80 value 196.957102
## iter 90 value 196.820928
## iter 100 value 196.749656
## final value 196.749656
## stopped after 100 iterations
## # weights: 150
## initial value 294.668086
## iter 10 value 247.544615
## iter 20 value 221.582202
## iter 30 value 215.420096
## iter 40 value 206.892296
## iter 50 value 201.742115
## iter 60 value 200.544339
## iter 70 value 198.686828
## iter 80 value 197.089891
## iter 90 value 196.391088
## iter 100 value 196.093120
## final value 196.093120
## stopped after 100 iterations
## # weights: 166
## initial value 487.704407
## iter 10 value 243.228249
## iter 20 value 240.708482
## iter 30 value 234.344839
## iter 40 value 214.656626
## iter 50 value 208.472842
## iter 60 value 202.734576
## iter 70 value 199.820489
## iter 80 value 197.954948
## iter 90 value 197.323696
## iter 100 value 196.573931
## final value 196.573931
## stopped after 100 iterations
## # weights: 182
## initial value 289.181329
## iter 10 value 256.783059
## iter 20 value 237.832222
## iter 30 value 224.708606
## iter 40 value 217.445097
## iter 50 value 210.546169
## iter 60 value 203.664788
## iter 70 value 200.258211
## iter 80 value 199.732567
## iter 90 value 197.912343
## iter 100 value 196.908749
## final value 196.908749
## stopped after 100 iterations
## # weights: 198
```



```
## initial value 469.050532
## iter 10 value 257.316089
## iter 20 value 248.378093
## iter 30 value 233.390896
## iter 40 value 207.210738
## iter 50 value 202.157243
## iter 60 value 199.500629
## iter 70 value 196.596661
## iter 80 value 195.651121
## iter 90 value 195.352589
## iter 100 value 195.086767
## final value 195.086767
## stopped after 100 iterations
## # weights: 214
## initial value 316.140692
## iter 10 value 244.452613
## iter 20 value 237.484028
## iter 30 value 210.979894
## iter 40 value 207.779071
## iter 50 value 202.454660
## iter 60 value 199.101832
## iter 70 value 197.619206
## iter 80 value 196.650502
## iter 90 value 195.910830
## iter 100 value 194.749690
## final value 194.749690
## stopped after 100 iterations
## # weights: 230
## initial value 481.185461
## iter 10 value 288.347156
## iter 20 value 243.338026
## iter 30 value 229.396103
## iter 40 value 219.339778
## iter 50 value 211.726848
## iter 60 value 206.385923
## iter 70 value 202.075922
## iter 80 value 197.479420
## iter 90 value 195.715941
## iter 100 value 195.032449
## final value 195.032449
## stopped after 100 iterations
## # weights: 246
## initial value 369.876016
## iter 10 value 248.876068
## iter 20 value 241.156114
## iter 30 value 218.628841
## iter 40 value 208.415874
## iter 50 value 201.893469
## iter 60 value 198.892356
## iter 70 value 197.145492
## iter 80 value 196.534495
## iter 90 value 195.974879
## iter 100 value 195.480670
## final value 195.480670
```

```
## stopped after 100 iterations
## # weights: 102
## initial value 366.824011
## iter 10 value 258.983606
## iter 20 value 212.524241
## iter 30 value 188.499751
## iter 40 value 184.687981
## iter 50 value 182.355363
## iter 60 value 161.400383
## iter 70 value 146.404683
## iter 80 value 140.891094
## iter 90 value 136.707146
## iter 100 value 134.399265
## final value 134.399265
## stopped after 100 iterations
## # weights: 118
## initial value 335.909663
## iter 10 value 262.290372
## final value 262.290330
## converged
## # weights: 134
## initial value 301.583250
## iter 10 value 261.167732
## iter 20 value 245.266368
## iter 30 value 237.055632
## iter 40 value 192.858254
## iter 50 value 165.385178
## iter 60 value 162.540210
## iter 70 value 159.806064
## iter 80 value 159.627035
## iter 90 value 159.401581
## iter 100 value 159.326917
## final value 159.326917
## stopped after 100 iterations
## # weights: 150
## initial value 276.656221
## iter 10 value 262.290331
## final value 262.290314
## converged
## # weights: 166
## initial value 323.719300
## iter 10 value 262.290311
## iter 10 value 262.290311
## iter 10 value 262.290311
## final value 262.290311
## converged
## # weights: 182
## initial value 587.023311
## iter 10 value 262.290315
## iter 10 value 262.290314
## iter 10 value 262.290314
## final value 262.290314
## converged
## # weights: 198
```

```
## initial value 304.655883
## iter 10 value 224.547106
## iter 20 value 189.471490
## iter 30 value 186.405552
## iter 40 value 184.983656
## iter 50 value 184.620261
## iter 60 value 164.137905
## iter 70 value 148.947936
## iter 80 value 142.335778
## iter 90 value 140.538886
## iter 100 value 139.504380
## final value 139.504380
## stopped after 100 iterations
## # weights: 214
## initial value 454.149590
## iter 10 value 262.319083
## final value 262.290306
## converged
## # weights: 230
## initial value 299.793829
## iter 10 value 263.270418
## iter 20 value 212.218936
## iter 30 value 162.833840
## iter 40 value 143.879340
## iter 50 value 139.012316
## iter 60 value 133.752212
## iter 70 value 131.661128
## iter 80 value 124.821001
## iter 90 value 102.381882
## iter 100 value 98.488656
## final value 98.488656
## stopped after 100 iterations
## # weights: 246
## initial value 653.872414
## iter 10 value 263.875715
## iter 20 value 188.608452
## iter 30 value 184.660012
## iter 40 value 183.257462
## iter 50 value 182.910523
## iter 60 value 180.340998
## iter 70 value 160.481742
## iter 80 value 153.843496
## iter 90 value 148.979781
## iter 100 value 138.741480
## final value 138.741480
## stopped after 100 iterations
## # weights: 102
## initial value 391.767968
## iter 10 value 262.435675
## iter 20 value 261.326122
## iter 30 value 213.746209
## iter 40 value 194.564673
## iter 50 value 165.777997
## iter 60 value 162.158409
```

```
## iter 70 value 159.053086
## iter 80 value 157.846161
## iter 90 value 155.695935
## iter 100 value 153.562907
## final value 153.562907
## stopped after 100 iterations
## # weights: 118
## initial value 316.264406
## iter 10 value 262.487133
## iter 20 value 262.257297
## iter 30 value 234.643465
## iter 40 value 185.857714
## iter 50 value 158.427470
## iter 60 value 156.300772
## iter 70 value 154.686692
## iter 80 value 151.842801
## iter 90 value 148.114781
## iter 100 value 146.439891
## final value 146.439891
## stopped after 100 iterations
## # weights: 134
## initial value 362.341617
## iter 10 value 263.050546
## iter 20 value 262.322456
## iter 30 value 249.249603
## iter 40 value 195.268304
## iter 50 value 191.361893
## iter 60 value 171.574842
## iter 70 value 143.817630
## iter 80 value 140.377121
## iter 90 value 127.412102
## iter 100 value 120.622499
## final value 120.622499
## stopped after 100 iterations
## # weights: 150
## initial value 317.301688
## iter 10 value 262.631839
## iter 20 value 250.442382
## iter 30 value 238.413042
## iter 40 value 237.948158
## iter 50 value 224.354263
## iter 60 value 192.938102
## iter 70 value 187.523960
## iter 80 value 184.905541
## iter 90 value 159.811637
## iter 100 value 152.869195
## final value 152.869195
## stopped after 100 iterations
## # weights: 166
## initial value 434.776943
## iter 10 value 262.566213
## iter 20 value 260.049432
## iter 30 value 222.647418
## iter 40 value 187.227341
```

```
## iter 50 value 174.538848
## iter 60 value 153.009285
## iter 70 value 144.370660
## iter 80 value 141.538120
## iter 90 value 135.394904
## iter 100 value 133.007701
## final value 133.007701
## stopped after 100 iterations
## # weights: 182
## initial value 404.983944
## iter 10 value 264.293988
## iter 20 value 262.441901
## iter 30 value 261.178623
## iter 40 value 252.792522
## iter 50 value 215.828729
## iter 60 value 173.456230
## iter 70 value 148.685777
## iter 80 value 127.745969
## iter 90 value 120.553483
## iter 100 value 117.260826
## final value 117.260826
## stopped after 100 iterations
## # weights: 198
## initial value 419.452724
## iter 10 value 265.977806
## iter 20 value 256.961150
## iter 30 value 214.776577
## iter 40 value 191.212302
## iter 50 value 190.547738
## iter 60 value 176.643550
## iter 70 value 149.293623
## iter 80 value 134.315651
## iter 90 value 120.058961
## iter 100 value 107.503169
## final value 107.503169
## stopped after 100 iterations
## # weights: 214
## initial value 497.581518
## iter 10 value 268.452702
## iter 20 value 261.050148
## iter 30 value 242.130841
## iter 40 value 200.246962
## iter 50 value 169.952142
## iter 60 value 152.001410
## iter 70 value 149.453330
## iter 80 value 146.983093
## iter 90 value 132.151109
## iter 100 value 121.524922
## final value 121.524922
## stopped after 100 iterations
## # weights: 230
## initial value 354.475193
## iter 10 value 263.262823
## iter 20 value 262.013721
```

```
## iter 30 value 255.027602
## iter 40 value 197.330484
## iter 50 value 154.869876
## iter 60 value 137.073325
## iter 70 value 127.523667
## iter 80 value 125.026919
## iter 90 value 121.475466
## iter 100 value 119.616615
## final value 119.616615
## stopped after 100 iterations
## # weights: 246
## initial value 393.038776
## iter 10 value 262.714973
## iter 20 value 246.857435
## iter 30 value 201.190634
## iter 40 value 191.230094
## iter 50 value 185.786801
## iter 60 value 168.765029
## iter 70 value 137.743313
## iter 80 value 117.858381
## iter 90 value 110.726020
## iter 100 value 105.537168
## final value 105.537168
## stopped after 100 iterations
## # weights: 102
## initial value 287.298592
## iter 10 value 262.499440
## iter 20 value 247.464650
## iter 30 value 210.607574
## iter 40 value 204.420429
## iter 50 value 181.740564
## iter 60 value 170.110732
## iter 70 value 168.017865
## iter 80 value 162.649028
## iter 90 value 155.171015
## iter 100 value 150.767556
## final value 150.767556
## stopped after 100 iterations
## # weights: 118
## initial value 347.727524
## iter 10 value 262.882330
## iter 20 value 261.333126
## iter 30 value 226.269318
## iter 40 value 203.698765
## iter 50 value 188.396402
## iter 60 value 171.644964
## iter 70 value 160.842440
## iter 80 value 157.893500
## iter 90 value 151.656411
## iter 100 value 147.376425
## final value 147.376425
## stopped after 100 iterations
## # weights: 134
## initial value 395.276406
```

```
## iter 10 value 262.779890
## iter 20 value 253.657286
## iter 30 value 223.632136
## iter 40 value 204.468128
## iter 50 value 198.956046
## iter 60 value 180.408354
## iter 70 value 170.037243
## iter 80 value 168.168196
## iter 90 value 165.950736
## iter 100 value 162.459872
## final value 162.459872
## stopped after 100 iterations
## # weights: 150
## initial value 405.534377
## iter 10 value 267.410077
## iter 20 value 254.268459
## iter 30 value 211.682715
## iter 40 value 198.153504
## iter 50 value 182.042105
## iter 60 value 167.669730
## iter 70 value 152.870616
## iter 80 value 143.115505
## iter 90 value 138.961301
## iter 100 value 135.481607
## final value 135.481607
## stopped after 100 iterations
## # weights: 166
## initial value 414.527318
## iter 10 value 267.921592
## iter 20 value 223.202311
## iter 30 value 195.703739
## iter 40 value 175.302448
## iter 50 value 168.939486
## iter 60 value 165.897407
## iter 70 value 158.987746
## iter 80 value 153.535255
## iter 90 value 141.194529
## iter 100 value 127.023446
## final value 127.023446
## stopped after 100 iterations
## # weights: 182
## initial value 327.733825
## iter 10 value 264.677594
## iter 20 value 247.814701
## iter 30 value 226.802958
## iter 40 value 208.956763
## iter 50 value 177.697590
## iter 60 value 172.571294
## iter 70 value 165.610437
## iter 80 value 162.955116
## iter 90 value 154.862204
## iter 100 value 150.459360
## final value 150.459360
## stopped after 100 iterations
```

```
## # weights: 198
## initial value 359.556314
## iter 10 value 263.901707
## iter 20 value 261.006759
## iter 30 value 240.960519
## iter 40 value 231.453964
## iter 50 value 199.653869
## iter 60 value 175.204681
## iter 70 value 156.998236
## iter 80 value 154.671842
## iter 90 value 149.400962
## iter 100 value 137.142025
## final value 137.142025
## stopped after 100 iterations
## # weights: 214
## initial value 487.903498
## iter 10 value 264.514916
## iter 20 value 235.218159
## iter 30 value 200.201080
## iter 40 value 164.620479
## iter 50 value 156.799116
## iter 60 value 137.724521
## iter 70 value 130.748753
## iter 80 value 127.198794
## iter 90 value 126.831891
## iter 100 value 124.386545
## final value 124.386545
## stopped after 100 iterations
## # weights: 230
## initial value 379.398591
## iter 10 value 266.837629
## iter 20 value 239.779638
## iter 30 value 217.303711
## iter 40 value 185.838320
## iter 50 value 166.539331
## iter 60 value 159.156345
## iter 70 value 152.729335
## iter 80 value 144.719510
## iter 90 value 133.666689
## iter 100 value 126.642547
## final value 126.642547
## stopped after 100 iterations
## # weights: 246
## initial value 306.846631
## iter 10 value 262.276692
## iter 20 value 236.329024
## iter 30 value 206.589863
## iter 40 value 174.537032
## iter 50 value 161.800245
## iter 60 value 152.180523
## iter 70 value 137.870525
## iter 80 value 131.074146
## iter 90 value 127.644095
## iter 100 value 125.268271
```



```
## final value 125.268271
## stopped after 100 iterations
## # weights: 102
## initial value 373.848250
## iter 10 value 268.237020
## iter 20 value 258.323731
## iter 30 value 233.388978
## iter 40 value 221.854530
## iter 50 value 214.306562
## iter 60 value 210.096510
## iter 70 value 206.717874
## iter 80 value 205.911564
## iter 90 value 205.500703
## iter 100 value 205.124676
## final value 205.124676
## stopped after 100 iterations
## # weights: 118
## initial value 365.033880
## iter 10 value 264.380088
## iter 20 value 249.307161
## iter 30 value 232.555932
## iter 40 value 212.447853
## iter 50 value 209.206499
## iter 60 value 208.189318
## iter 70 value 206.550988
## iter 80 value 205.850246
## iter 90 value 205.485039
## iter 100 value 205.381098
## final value 205.381098
## stopped after 100 iterations
## # weights: 134
## initial value 497.762892
## iter 10 value 280.576274
## iter 20 value 241.160825
## iter 30 value 230.029272
## iter 40 value 221.067570
## iter 50 value 212.270007
## iter 60 value 207.940961
## iter 70 value 205.631642
## iter 80 value 205.140507
## iter 90 value 204.697235
## iter 100 value 204.247144
## final value 204.247144
## stopped after 100 iterations
## # weights: 150
## initial value 384.377257
## iter 10 value 263.908878
## iter 20 value 257.102141
## iter 30 value 232.118791
## iter 40 value 226.715503
## iter 50 value 222.967515
## iter 60 value 213.977607
## iter 70 value 207.057914
## iter 80 value 205.322465
```

```
## iter 90 value 204.789007
## iter 100 value 204.399039
## final value 204.399039
## stopped after 100 iterations
## # weights: 166
## initial value 398.676281
## iter 10 value 289.499327
## iter 20 value 263.798998
## iter 30 value 248.568628
## iter 40 value 242.397971
## iter 50 value 220.238267
## iter 60 value 210.965059
## iter 70 value 206.667290
## iter 80 value 204.242339
## iter 90 value 203.836318
## iter 100 value 203.596337
## final value 203.596337
## stopped after 100 iterations
## # weights: 182
## initial value 319.597320
## iter 10 value 263.814932
## iter 20 value 260.329388
## iter 30 value 239.156315
## iter 40 value 221.970838
## iter 50 value 215.960095
## iter 60 value 209.693803
## iter 70 value 206.600202
## iter 80 value 205.102683
## iter 90 value 204.531998
## iter 100 value 204.203690
## final value 204.203690
## stopped after 100 iterations
## # weights: 198
## initial value 403.872126
## iter 10 value 290.304820
## iter 20 value 266.023027
## iter 30 value 258.883989
## iter 40 value 236.760337
## iter 50 value 223.647699
## iter 60 value 217.334836
## iter 70 value 212.163794
## iter 80 value 208.406476
## iter 90 value 206.774125
## iter 100 value 205.497614
## final value 205.497614
## stopped after 100 iterations
## # weights: 214
## initial value 354.513233
## iter 10 value 282.284832
## iter 20 value 258.848454
## iter 30 value 241.114019
## iter 40 value 232.491718
## iter 50 value 223.870128
## iter 60 value 216.754669
```

```
## iter 70 value 212.238501
## iter 80 value 207.862176
## iter 90 value 204.285715
## iter 100 value 202.952778
## final value 202.952778
## stopped after 100 iterations
## # weights: 230
## initial value 693.554808
## iter 10 value 371.366022
## iter 20 value 288.786363
## iter 30 value 251.824086
## iter 40 value 227.442410
## iter 50 value 219.462783
## iter 60 value 216.233318
## iter 70 value 212.182768
## iter 80 value 208.907072
## iter 90 value 205.190703
## iter 100 value 202.922667
## final value 202.922667
## stopped after 100 iterations
## # weights: 246
## initial value 481.869991
## iter 10 value 307.653005
## iter 20 value 285.547739
## iter 30 value 268.475862
## iter 40 value 242.005665
## iter 50 value 221.820495
## iter 60 value 213.279875
## iter 70 value 207.298908
## iter 80 value 204.218220
## iter 90 value 203.326219
## iter 100 value 202.282048
## final value 202.282048
## stopped after 100 iterations
## # weights: 102
## initial value 324.591298
## iter 10 value 252.664009
## final value 252.663866
## converged
## # weights: 118
## initial value 359.546431
## iter 10 value 262.021437
## final value 252.663865
## converged
## # weights: 134
## initial value 301.535784
## iter 10 value 252.663874
## final value 252.663863
## converged
## # weights: 150
## initial value 268.665944
## iter 10 value 187.563832
## iter 20 value 157.273166
## iter 30 value 153.148459
```

```
## iter 40 value 132.651238
## iter 50 value 110.738632
## iter 60 value 108.433010
## iter 70 value 107.247268
## iter 80 value 105.423309
## iter 90 value 104.882137
## iter 100 value 104.115746
## final value 104.115746
## stopped after 100 iterations
## # weights: 166
## initial value 419.471674
## iter 10 value 253.445238
## final value 252.663860
## converged
## # weights: 182
## initial value 400.144240
## iter 10 value 252.673719
## final value 252.663738
## converged
## # weights: 198
## initial value 305.387184
## iter 10 value 244.811088
## iter 20 value 196.100168
## iter 30 value 129.977330
## iter 40 value 104.403563
## iter 50 value 94.836725
## iter 60 value 91.604621
## iter 70 value 82.752208
## iter 80 value 75.321366
## iter 90 value 69.553945
## iter 100 value 65.227673
## final value 65.227673
## stopped after 100 iterations
## # weights: 214
## initial value 302.583165
## iter 10 value 248.067829
## iter 20 value 230.584602
## iter 30 value 215.494182
## iter 40 value 174.193816
## iter 50 value 159.143092
## iter 60 value 151.333108
## iter 70 value 149.772095
## iter 80 value 149.423350
## iter 90 value 148.556543
## iter 100 value 141.221935
## final value 141.221935
## stopped after 100 iterations
## # weights: 230
## initial value 374.745767
## iter 10 value 257.869235
## iter 20 value 252.663877
## final value 252.663862
## converged
## # weights: 246
```

```
## initial value 347.681201
## iter 10 value 260.069816
## iter 20 value 252.663871
## iter 20 value 252.663871
## iter 20 value 252.663871
## final value 252.663871
## converged
## # weights: 102
## initial value 353.364421
## iter 10 value 252.840647
## iter 20 value 252.339483
## iter 30 value 224.347563
## iter 40 value 184.490077
## iter 50 value 150.609894
## iter 60 value 126.380823
## iter 70 value 123.789415
## iter 80 value 112.033071
## iter 90 value 103.846063
## iter 100 value 92.033518
## final value 92.033518
## stopped after 100 iterations
## # weights: 118
## initial value 334.387687
## iter 10 value 253.550499
## iter 20 value 187.067668
## iter 30 value 175.535566
## iter 40 value 164.701259
## iter 50 value 162.319490
## iter 60 value 149.639678
## iter 70 value 136.086882
## iter 80 value 134.050848
## iter 90 value 128.474188
## iter 100 value 114.189587
## final value 114.189587
## stopped after 100 iterations
## # weights: 134
## initial value 278.027941
## iter 10 value 252.859065
## iter 20 value 180.341443
## iter 30 value 159.011214
## iter 40 value 149.101934
## iter 50 value 148.396663
## iter 60 value 139.722051
## iter 70 value 130.473093
## iter 80 value 125.704484
## iter 90 value 123.086605
## iter 100 value 114.370018
## final value 114.370018
## stopped after 100 iterations
## # weights: 150
## initial value 344.764103
## iter 10 value 252.975847
## iter 20 value 252.605192
## iter 30 value 246.092023
```

```
## iter 40 value 177.925063
## iter 50 value 156.010974
## iter 60 value 154.412648
## iter 70 value 144.888036
## iter 80 value 126.221564
## iter 90 value 111.678504
## iter 100 value 106.318867
## final value 106.318867
## stopped after 100 iterations
## # weights: 166
## initial value 432.128972
## iter 10 value 247.454078
## iter 20 value 218.386047
## iter 30 value 215.872330
## iter 40 value 196.784384
## iter 50 value 180.705616
## iter 60 value 151.180262
## iter 70 value 133.707505
## iter 80 value 126.456851
## iter 90 value 115.093317
## iter 100 value 107.628305
## final value 107.628305
## stopped after 100 iterations
## # weights: 182
## initial value 307.019285
## iter 10 value 252.926226
## iter 20 value 252.131593
## iter 30 value 193.337997
## iter 40 value 159.851264
## iter 50 value 145.270034
## iter 60 value 111.961383
## iter 70 value 98.830743
## iter 80 value 91.046071
## iter 90 value 87.851779
## iter 100 value 85.454219
## final value 85.454219
## stopped after 100 iterations
## # weights: 198
## initial value 462.802192
## iter 10 value 254.655912
## iter 20 value 252.746743
## iter 30 value 250.875197
## iter 40 value 206.731923
## iter 50 value 177.984939
## iter 60 value 142.894895
## iter 70 value 125.822389
## iter 80 value 119.206823
## iter 90 value 115.121063
## iter 100 value 106.510948
## final value 106.510948
## stopped after 100 iterations
## # weights: 214
## initial value 300.252746
## iter 10 value 250.876102
```

```
## iter 20 value 211.994454
## iter 30 value 206.079151
## iter 40 value 200.227330
## iter 50 value 187.241620
## iter 60 value 146.265010
## iter 70 value 128.966167
## iter 80 value 124.870191
## iter 90 value 121.799824
## iter 100 value 119.511090
## final value 119.511090
## stopped after 100 iterations
## # weights: 230
## initial value 307.004562
## iter 10 value 252.818160
## iter 20 value 246.062427
## iter 30 value 241.663599
## iter 40 value 193.613304
## iter 50 value 142.859460
## iter 60 value 137.386190
## iter 70 value 131.508110
## iter 80 value 125.577750
## iter 90 value 114.324751
## iter 100 value 108.109296
## final value 108.109296
## stopped after 100 iterations
## # weights: 246
## initial value 402.759376
## iter 10 value 253.364589
## iter 20 value 252.653765
## iter 30 value 248.168591
## iter 40 value 189.791085
## iter 50 value 166.795572
## iter 60 value 150.450336
## iter 70 value 144.174542
## iter 80 value 131.245567
## iter 90 value 119.851203
## iter 100 value 117.050315
## final value 117.050315
## stopped after 100 iterations
## # weights: 102
## initial value 494.339370
## iter 10 value 253.037116
## iter 20 value 252.519106
## iter 30 value 223.357595
## iter 40 value 168.097240
## iter 50 value 148.366324
## iter 60 value 135.744052
## iter 70 value 128.881864
## iter 80 value 126.400895
## iter 90 value 126.143252
## iter 100 value 125.919046
## final value 125.919046
## stopped after 100 iterations
## # weights: 118
```

```
## initial value 342.259272
## iter 10 value 255.676889
## iter 20 value 247.682878
## iter 30 value 192.062767
## iter 40 value 172.172463
## iter 50 value 152.537152
## iter 60 value 144.116732
## iter 70 value 143.453227
## iter 80 value 133.118694
## iter 90 value 120.085991
## iter 100 value 112.277478
## final value 112.277478
## stopped after 100 iterations
## # weights: 134
## initial value 323.750938
## iter 10 value 254.552019
## iter 20 value 247.823088
## iter 30 value 197.606018
## iter 40 value 172.835372
## iter 50 value 155.418455
## iter 60 value 133.332749
## iter 70 value 126.280195
## iter 80 value 124.367915
## iter 90 value 120.911966
## iter 100 value 116.766355
## final value 116.766355
## stopped after 100 iterations
## # weights: 150
## initial value 306.590261
## iter 10 value 249.189693
## iter 20 value 208.813959
## iter 30 value 186.107548
## iter 40 value 153.224281
## iter 50 value 133.431073
## iter 60 value 126.303292
## iter 70 value 122.773207
## iter 80 value 118.739549
## iter 90 value 116.158624
## iter 100 value 115.032194
## final value 115.032194
## stopped after 100 iterations
## # weights: 166
## initial value 342.330599
## iter 10 value 253.114845
## iter 20 value 251.562783
## iter 30 value 193.756430
## iter 40 value 164.287320
## iter 50 value 145.105704
## iter 60 value 135.772254
## iter 70 value 128.089750
## iter 80 value 122.576417
## iter 90 value 119.048616
## iter 100 value 114.972958
## final value 114.972958
```



```
## stopped after 100 iterations
## # weights: 182
## initial value 309.809761
## iter 10 value 252.860019
## iter 20 value 251.570805
## iter 30 value 244.889055
## iter 40 value 205.850887
## iter 50 value 180.146118
## iter 60 value 140.180501
## iter 70 value 129.936955
## iter 80 value 127.094533
## iter 90 value 122.385250
## iter 100 value 114.746090
## final value 114.746090
## stopped after 100 iterations
## # weights: 198
## initial value 313.793306
## iter 10 value 253.478296
## iter 20 value 237.823277
## iter 30 value 224.226271
## iter 40 value 185.992462
## iter 50 value 169.786229
## iter 60 value 151.423070
## iter 70 value 134.391663
## iter 80 value 123.963659
## iter 90 value 122.448518
## iter 100 value 116.020975
## final value 116.020975
## stopped after 100 iterations
## # weights: 214
## initial value 445.155243
## iter 10 value 237.469081
## iter 20 value 204.950424
## iter 30 value 177.085130
## iter 40 value 156.681178
## iter 50 value 138.040626
## iter 60 value 131.415103
## iter 70 value 127.930454
## iter 80 value 123.483708
## iter 90 value 116.671367
## iter 100 value 110.575697
## final value 110.575697
## stopped after 100 iterations
## # weights: 230
## initial value 345.135642
## iter 10 value 219.037885
## iter 20 value 197.504615
## iter 30 value 188.815485
## iter 40 value 167.349415
## iter 50 value 147.978514
## iter 60 value 135.042881
## iter 70 value 118.399778
## iter 80 value 112.899960
## iter 90 value 109.479999
```

```
## iter 100 value 106.253382
## final value 106.253382
## stopped after 100 iterations
## # weights: 246
## initial value 346.858693
## iter 10 value 253.953181
## iter 20 value 249.886106
## iter 30 value 215.146935
## iter 40 value 191.462634
## iter 50 value 159.950861
## iter 60 value 147.969030
## iter 70 value 142.711604
## iter 80 value 134.841344
## iter 90 value 125.804111
## iter 100 value 120.569029
## final value 120.569029
## stopped after 100 iterations
## # weights: 102
## initial value 328.936473
## iter 10 value 257.099204
## iter 20 value 247.871324
## iter 30 value 217.144045
## iter 40 value 195.223462
## iter 50 value 193.009032
## iter 60 value 186.551472
## iter 70 value 184.242103
## iter 80 value 182.857243
## iter 90 value 182.309799
## iter 100 value 182.036088
## final value 182.036088
## stopped after 100 iterations
## # weights: 118
## initial value 366.842603
## iter 10 value 295.772561
## iter 20 value 282.784968
## iter 30 value 237.921474
## iter 40 value 215.910515
## iter 50 value 203.976735
## iter 60 value 194.767140
## iter 70 value 186.395554
## iter 80 value 183.475659
## iter 90 value 181.909437
## iter 100 value 181.262668
## final value 181.262668
## stopped after 100 iterations
## # weights: 134
## initial value 409.141557
## iter 10 value 284.214829
## iter 20 value 252.267014
## iter 30 value 225.807980
## iter 40 value 196.467809
## iter 50 value 187.185371
## iter 60 value 184.399488
## iter 70 value 182.550135
```

```
## iter 80 value 181.280047
## iter 90 value 180.921074
## iter 100 value 180.667503
## final value 180.667503
## stopped after 100 iterations
## # weights: 150
## initial value 382.993212
## iter 10 value 274.010368
## iter 20 value 256.320470
## iter 30 value 214.486450
## iter 40 value 197.013639
## iter 50 value 187.511048
## iter 60 value 185.575970
## iter 70 value 183.423877
## iter 80 value 181.605064
## iter 90 value 179.557520
## iter 100 value 179.176644
## final value 179.176644
## stopped after 100 iterations
## # weights: 166
## initial value 330.842560
## iter 10 value 261.221644
## iter 20 value 250.137762
## iter 30 value 216.677216
## iter 40 value 203.233532
## iter 50 value 194.805895
## iter 60 value 188.834573
## iter 70 value 185.620196
## iter 80 value 181.544999
## iter 90 value 179.351744
## iter 100 value 178.722033
## final value 178.722033
## stopped after 100 iterations
## # weights: 182
## initial value 468.997888
## iter 10 value 254.730359
## iter 20 value 246.364078
## iter 30 value 231.655936
## iter 40 value 201.990564
## iter 50 value 191.529634
## iter 60 value 187.462721
## iter 70 value 183.829812
## iter 80 value 181.086124
## iter 90 value 180.662858
## iter 100 value 179.816633
## final value 179.816633
## stopped after 100 iterations
## # weights: 198
## initial value 640.714547
## iter 10 value 282.696366
## iter 20 value 265.061578
## iter 30 value 202.319834
## iter 40 value 192.099405
## iter 50 value 189.585124
```

```
## iter 60 value 186.613854
## iter 70 value 183.378034
## iter 80 value 181.909029
## iter 90 value 181.555822
## iter 100 value 180.014606
## final value 180.014606
## stopped after 100 iterations
## # weights: 214
## initial value 478.837413
## iter 10 value 294.833920
## iter 20 value 283.037793
## iter 30 value 204.095304
## iter 40 value 193.346174
## iter 50 value 185.409557
## iter 60 value 183.079507
## iter 70 value 181.266278
## iter 80 value 180.076786
## iter 90 value 179.424932
## iter 100 value 179.259322
## final value 179.259322
## stopped after 100 iterations
## # weights: 230
## initial value 349.443009
## iter 10 value 269.501300
## iter 20 value 234.554461
## iter 30 value 205.430434
## iter 40 value 195.851881
## iter 50 value 188.648065
## iter 60 value 186.053401
## iter 70 value 183.221903
## iter 80 value 181.173656
## iter 90 value 180.280182
## iter 100 value 179.675549
## final value 179.675549
## stopped after 100 iterations
## # weights: 246
## initial value 528.120364
## iter 10 value 278.392694
## iter 20 value 271.619676
## iter 30 value 253.267559
## iter 40 value 227.783382
## iter 50 value 204.076920
## iter 60 value 195.720856
## iter 70 value 187.034646
## iter 80 value 181.809910
## iter 90 value 180.534838
## iter 100 value 179.174483
## final value 179.174483
## stopped after 100 iterations
## # weights: 102
## initial value 379.470908
## iter 10 value 219.125081
## iter 20 value 197.575934
## iter 30 value 143.379366
```

```
## iter 40 value 128.697520
## iter 50 value 127.097908
## iter 60 value 125.991933
## iter 70 value 125.627256
## iter 80 value 124.867675
## iter 90 value 123.531592
## iter 100 value 122.558387
## final value 122.558387
## stopped after 100 iterations
## # weights: 118
## initial value 267.469417
## iter 10 value 259.479392
## final value 259.479346
## converged
## # weights: 134
## initial value 332.429256
## iter 10 value 259.480161
## iter 20 value 259.479193
## iter 30 value 258.250468
## iter 40 value 201.523461
## iter 50 value 159.740552
## iter 60 value 149.594976
## iter 70 value 149.133749
## iter 80 value 148.545448
## iter 90 value 148.101752
## iter 100 value 145.643382
## final value 145.643382
## stopped after 100 iterations
## # weights: 150
## initial value 417.468336
## iter 10 value 259.481417
## final value 259.479345
## converged
## # weights: 166
## initial value 374.156504
## iter 10 value 259.070733
## iter 20 value 242.955370
## iter 30 value 175.841380
## iter 40 value 155.360034
## iter 50 value 139.456998
## iter 60 value 126.237349
## iter 70 value 124.148475
## iter 80 value 124.140617
## iter 90 value 124.140395
## final value 124.140371
## converged
## # weights: 182
## initial value 385.312361
## iter 10 value 259.631839
## final value 259.479345
## converged
## # weights: 198
## initial value 321.925030
## iter 10 value 248.721851
```

```
## iter 20 value 194.580108
## iter 30 value 171.201870
## iter 40 value 168.860592
## iter 50 value 168.255396
## iter 60 value 157.976726
## iter 70 value 146.389857
## iter 80 value 132.421142
## iter 90 value 128.234299
## iter 100 value 127.953591
## final value 127.953591
## stopped after 100 iterations
## # weights: 214
## initial value 508.396997
## iter 10 value 282.510478
## iter 20 value 194.683785
## iter 30 value 165.543102
## iter 40 value 136.305208
## iter 50 value 117.366199
## iter 60 value 99.726450
## iter 70 value 96.436888
## iter 80 value 77.784586
## iter 90 value 66.372432
## iter 100 value 60.494277
## final value 60.494277
## stopped after 100 iterations
## # weights: 230
## initial value 290.343477
## iter 10 value 259.699952
## iter 20 value 249.814821
## iter 30 value 202.610368
## iter 40 value 180.985184
## iter 50 value 168.083424
## iter 60 value 166.641712
## iter 70 value 132.355295
## iter 80 value 97.989174
## iter 90 value 94.301880
## iter 100 value 92.247903
## final value 92.247903
## stopped after 100 iterations
## # weights: 246
## initial value 529.643196
## iter 10 value 265.247484
## final value 259.479313
## converged
## # weights: 102
## initial value 352.249017
## iter 10 value 257.060748
## iter 20 value 233.964681
## iter 30 value 179.643934
## iter 40 value 139.102896
## iter 50 value 128.351226
## iter 60 value 128.164709
## iter 70 value 123.970341
## iter 80 value 114.495787
```

```
## iter 90 value 111.158340
## iter 100 value 110.307410
## final value 110.307410
## stopped after 100 iterations
## # weights: 118
## initial value 377.318402
## iter 10 value 262.437912
## iter 20 value 259.516711
## iter 30 value 252.186060
## iter 40 value 217.372957
## iter 50 value 143.632152
## iter 60 value 129.875870
## iter 70 value 125.210317
## iter 80 value 123.997887
## iter 90 value 121.856887
## iter 100 value 106.345607
## final value 106.345607
## stopped after 100 iterations
## # weights: 134
## initial value 413.075696
## iter 10 value 263.602486
## iter 20 value 212.661617
## iter 30 value 173.274919
## iter 40 value 158.010618
## iter 50 value 154.122682
## iter 60 value 147.695244
## iter 70 value 134.658979
## iter 80 value 131.188874
## iter 90 value 128.107719
## iter 100 value 110.094104
## final value 110.094104
## stopped after 100 iterations
## # weights: 150
## initial value 338.499700
## iter 10 value 259.865944
## iter 20 value 259.401880
## iter 30 value 257.563425
## iter 40 value 178.082810
## iter 50 value 140.521669
## iter 60 value 134.556156
## iter 70 value 134.376238
## iter 80 value 128.920282
## iter 90 value 120.017791
## iter 100 value 105.331435
## final value 105.331435
## stopped after 100 iterations
## # weights: 166
## initial value 291.807189
## iter 10 value 259.660130
## iter 20 value 257.559943
## iter 30 value 209.452862
## iter 40 value 163.290401
## iter 50 value 127.035100
## iter 60 value 118.642604
```

```
## iter 70 value 112.115788
## iter 80 value 97.615196
## iter 90 value 88.787976
## iter 100 value 86.845096
## final value 86.845096
## stopped after 100 iterations
## # weights: 182
## initial value 399.732636
## iter 10 value 260.422128
## iter 20 value 259.923913
## iter 30 value 256.354718
## iter 40 value 195.639712
## iter 50 value 171.916888
## iter 60 value 168.370350
## iter 70 value 152.590596
## iter 80 value 140.364069
## iter 90 value 137.959907
## iter 100 value 137.377864
## final value 137.377864
## stopped after 100 iterations
## # weights: 198
## initial value 406.161745
## iter 10 value 271.794826
## iter 20 value 258.682711
## iter 30 value 216.338772
## iter 40 value 203.443579
## iter 50 value 186.906973
## iter 60 value 176.737078
## iter 70 value 158.164562
## iter 80 value 144.646003
## iter 90 value 111.732561
## iter 100 value 102.322547
## final value 102.322547
## stopped after 100 iterations
## # weights: 214
## initial value 411.388385
## iter 10 value 259.142027
## iter 20 value 218.873275
## iter 30 value 195.292423
## iter 40 value 130.866107
## iter 50 value 113.207052
## iter 60 value 106.289071
## iter 70 value 102.308839
## iter 80 value 101.663696
## iter 90 value 97.690839
## iter 100 value 94.342043
## final value 94.342043
## stopped after 100 iterations
## # weights: 230
## initial value 376.123784
## iter 10 value 259.645789
## iter 20 value 240.866549
## iter 30 value 202.125342
## iter 40 value 182.504879
```



```
## iter 50 value 144.756047
## iter 60 value 135.321261
## iter 70 value 129.909500
## iter 80 value 128.386304
## iter 90 value 126.628728
## iter 100 value 108.514316
## final value 108.514316
## stopped after 100 iterations
## # weights: 246
## initial value 345.433708
## iter 10 value 259.971342
## iter 20 value 258.663099
## iter 30 value 220.667692
## iter 40 value 178.715416
## iter 50 value 167.665053
## iter 60 value 164.565222
## iter 70 value 144.429362
## iter 80 value 139.403171
## iter 90 value 138.634704
## iter 100 value 135.029172
## final value 135.029172
## stopped after 100 iterations
## # weights: 102
## initial value 306.617490
## iter 10 value 257.175032
## iter 20 value 237.139007
## iter 30 value 219.653667
## iter 40 value 212.502056
## iter 50 value 185.209361
## iter 60 value 178.528030
## iter 70 value 173.004141
## iter 80 value 169.984997
## iter 90 value 163.539334
## iter 100 value 149.376922
## final value 149.376922
## stopped after 100 iterations
## # weights: 118
## initial value 394.880174
## iter 10 value 260.213166
## iter 20 value 243.117669
## iter 30 value 209.801789
## iter 40 value 166.769071
## iter 50 value 159.577407
## iter 60 value 153.533706
## iter 70 value 147.349724
## iter 80 value 137.155675
## iter 90 value 127.096301
## iter 100 value 125.839250
## final value 125.839250
## stopped after 100 iterations
## # weights: 134
## initial value 344.686679
## iter 10 value 261.661380
## iter 20 value 258.829703
```

```
## iter 30 value 246.591126
## iter 40 value 188.453392
## iter 50 value 139.900996
## iter 60 value 133.856781
## iter 70 value 126.793760
## iter 80 value 122.693927
## iter 90 value 119.989224
## iter 100 value 117.655556
## final value 117.655556
## stopped after 100 iterations
## # weights: 150
## initial value 384.668456
## iter 10 value 260.437191
## iter 20 value 254.738449
## iter 30 value 200.945959
## iter 40 value 193.802346
## iter 50 value 171.000500
## iter 60 value 156.112337
## iter 70 value 147.768026
## iter 80 value 144.001350
## iter 90 value 136.563859
## iter 100 value 128.125314
## final value 128.125314
## stopped after 100 iterations
## # weights: 166
## initial value 356.784175
## iter 10 value 256.338739
## iter 20 value 200.731067
## iter 30 value 186.647480
## iter 40 value 175.616697
## iter 50 value 161.109418
## iter 60 value 155.062590
## iter 70 value 143.503388
## iter 80 value 130.892818
## iter 90 value 122.008560
## iter 100 value 119.380930
## final value 119.380930
## stopped after 100 iterations
## # weights: 182
## initial value 300.575191
## iter 10 value 260.140804
## iter 20 value 257.997523
## iter 30 value 220.762286
## iter 40 value 188.058958
## iter 50 value 163.278357
## iter 60 value 142.062041
## iter 70 value 132.808983
## iter 80 value 127.545811
## iter 90 value 125.443947
## iter 100 value 124.474726
## final value 124.474726
## stopped after 100 iterations
## # weights: 198
## initial value 367.153392
```

```
## iter 10 value 261.441628
## iter 20 value 256.784616
## iter 30 value 242.130107
## iter 40 value 210.898485
## iter 50 value 196.870414
## iter 60 value 145.416715
## iter 70 value 138.181991
## iter 80 value 127.946391
## iter 90 value 121.848595
## iter 100 value 117.878908
## final value 117.878908
## stopped after 100 iterations
## # weights: 214
## initial value 354.167114
## iter 10 value 237.941909
## iter 20 value 204.786254
## iter 30 value 181.405956
## iter 40 value 160.658333
## iter 50 value 141.187280
## iter 60 value 137.517987
## iter 70 value 129.962675
## iter 80 value 125.439812
## iter 90 value 119.217375
## iter 100 value 115.184370
## final value 115.184370
## stopped after 100 iterations
## # weights: 230
## initial value 420.782513
## iter 10 value 271.144344
## iter 20 value 268.635432
## iter 30 value 265.941799
## iter 40 value 200.778064
## iter 50 value 172.822449
## iter 60 value 162.751134
## iter 70 value 149.410836
## iter 80 value 141.800483
## iter 90 value 136.219948
## iter 100 value 133.778731
## final value 133.778731
## stopped after 100 iterations
## # weights: 246
## initial value 486.352412
## iter 10 value 268.069169
## iter 20 value 259.622943
## iter 30 value 247.841563
## iter 40 value 200.136114
## iter 50 value 169.541778
## iter 60 value 156.223093
## iter 70 value 151.899600
## iter 80 value 145.753135
## iter 90 value 135.545496
## iter 100 value 125.696375
## final value 125.696375
## stopped after 100 iterations
```

```
## # weights: 102
## initial value 390.719862
## iter 10 value 279.882637
## iter 20 value 254.087908
## iter 30 value 230.785667
## iter 40 value 222.395249
## iter 50 value 217.148582
## iter 60 value 206.929059
## iter 70 value 203.803531
## iter 80 value 200.489200
## iter 90 value 199.389801
## iter 100 value 199.079701
## final value 199.079701
## stopped after 100 iterations
## # weights: 118
## initial value 317.125672
## iter 10 value 262.588649
## iter 20 value 251.706496
## iter 30 value 240.994435
## iter 40 value 221.744450
## iter 50 value 213.080585
## iter 60 value 207.532049
## iter 70 value 203.119507
## iter 80 value 201.351027
## iter 90 value 200.693011
## iter 100 value 200.533509
## final value 200.533509
## stopped after 100 iterations
## # weights: 134
## initial value 367.549939
## iter 10 value 265.293035
## iter 20 value 261.381746
## iter 30 value 255.724013
## iter 40 value 239.385967
## iter 50 value 219.648916
## iter 60 value 207.456923
## iter 70 value 202.223809
## iter 80 value 200.282957
## iter 90 value 198.958367
## iter 100 value 198.198560
## final value 198.198560
## stopped after 100 iterations
## # weights: 150
## initial value 380.516102
## iter 10 value 263.156043
## iter 20 value 258.768400
## iter 30 value 244.744309
## iter 40 value 223.335414
## iter 50 value 215.548065
## iter 60 value 207.346509
## iter 70 value 204.930878
## iter 80 value 202.126217
## iter 90 value 199.010207
## iter 100 value 196.735892
```

```
## final value 196.735892
## stopped after 100 iterations
## # weights: 166
## initial value 533.202194
## iter 10 value 268.783060
## iter 20 value 262.469916
## iter 30 value 238.817443
## iter 40 value 217.251789
## iter 50 value 207.799810
## iter 60 value 205.080867
## iter 70 value 202.625779
## iter 80 value 199.472561
## iter 90 value 198.196671
## iter 100 value 197.382994
## final value 197.382994
## stopped after 100 iterations
## # weights: 182
## initial value 460.451246
## iter 10 value 270.876054
## iter 20 value 259.681010
## iter 30 value 216.143082
## iter 40 value 208.678151
## iter 50 value 204.476714
## iter 60 value 201.979861
## iter 70 value 199.431725
## iter 80 value 197.479437
## iter 90 value 196.006217
## iter 100 value 195.239669
## final value 195.239669
## stopped after 100 iterations
## # weights: 198
## initial value 358.346264
## iter 10 value 262.950905
## iter 20 value 249.228958
## iter 30 value 229.649356
## iter 40 value 214.661870
## iter 50 value 206.218076
## iter 60 value 200.296330
## iter 70 value 197.215309
## iter 80 value 196.321838
## iter 90 value 196.062944
## iter 100 value 195.877606
## final value 195.877606
## stopped after 100 iterations
## # weights: 214
## initial value 465.480684
## iter 10 value 292.353055
## iter 20 value 260.650527
## iter 30 value 252.441423
## iter 40 value 221.225500
## iter 50 value 210.374299
## iter 60 value 206.919612
## iter 70 value 203.858770
## iter 80 value 200.775460
```

```
## iter 90 value 197.366496
## iter 100 value 195.175002
## final value 195.175002
## stopped after 100 iterations
## # weights: 230
## initial value 447.074544
## iter 10 value 270.180930
## iter 20 value 262.176623
## iter 30 value 236.596596
## iter 40 value 225.519165
## iter 50 value 211.664119
## iter 60 value 203.601674
## iter 70 value 200.237995
## iter 80 value 198.398794
## iter 90 value 197.265159
## iter 100 value 196.021341
## final value 196.021341
## stopped after 100 iterations
## # weights: 246
## initial value 576.951780
## iter 10 value 298.501610
## iter 20 value 275.892489
## iter 30 value 271.667736
## iter 40 value 248.597543
## iter 50 value 226.725029
## iter 60 value 217.171374
## iter 70 value 203.181564
## iter 80 value 199.718188
## iter 90 value 198.177414
## iter 100 value 196.470773
## final value 196.470773
## stopped after 100 iterations
## # weights: 102
## initial value 316.668374
## iter 10 value 251.900175
## final value 251.900168
## converged
## # weights: 118
## initial value 439.252804
## iter 10 value 251.900219
## final value 251.900167
## converged
## # weights: 134
## initial value 347.004153
## iter 10 value 261.641555
## iter 20 value 244.097615
## iter 30 value 176.008129
## iter 40 value 170.688402
## iter 50 value 158.015851
## iter 60 value 152.711800
## iter 70 value 151.089474
## iter 80 value 146.400234
## iter 90 value 145.381042
## iter 100 value 144.615850
```

```
## final value 144.615850
## stopped after 100 iterations
## # weights: 150
## initial value 377.225554
## iter 10 value 252.081127
## final value 251.900020
## converged
## # weights: 166
## initial value 343.966614
## iter 10 value 239.783323
## iter 20 value 182.846088
## iter 30 value 158.629021
## iter 40 value 126.637726
## iter 50 value 102.295666
## iter 60 value 72.030198
## iter 70 value 50.379568
## iter 80 value 46.482872
## iter 90 value 46.047563
## iter 100 value 45.784807
## final value 45.784807
## stopped after 100 iterations
## # weights: 182
## initial value 377.652146
## iter 10 value 251.901870
## final value 251.900176
## converged
## # weights: 198
## initial value 330.177907
## iter 10 value 250.228134
## iter 20 value 221.142357
## iter 30 value 174.285633
## iter 40 value 169.018422
## iter 50 value 167.078427
## iter 60 value 166.245655
## iter 70 value 165.589232
## iter 80 value 164.260185
## iter 90 value 162.335658
## iter 100 value 161.697616
## final value 161.697616
## stopped after 100 iterations
## # weights: 214
## initial value 400.357490
## iter 10 value 251.826258
## iter 20 value 188.681394
## iter 30 value 167.671143
## iter 40 value 163.189857
## iter 50 value 146.006473
## iter 60 value 128.230545
## iter 70 value 120.951324
## iter 80 value 117.978133
## iter 90 value 107.438092
## iter 100 value 97.399577
## final value 97.399577
## stopped after 100 iterations
```

```
## # weights: 230
## initial value 472.541612
## iter 10 value 250.719912
## iter 20 value 214.287251
## iter 30 value 178.258651
## iter 40 value 145.964407
## iter 50 value 122.418966
## iter 60 value 113.808363
## iter 70 value 110.475868
## iter 80 value 109.379496
## iter 90 value 108.980247
## iter 100 value 108.622460
## final value 108.622460
## stopped after 100 iterations
## # weights: 246
## initial value 455.059693
## iter 10 value 255.852508
## iter 20 value 178.740786
## iter 30 value 166.577795
## iter 40 value 163.144762
## iter 50 value 144.684870
## iter 60 value 138.611799
## iter 70 value 135.875780
## iter 80 value 130.500071
## iter 90 value 130.325828
## iter 100 value 130.315217
## final value 130.315217
## stopped after 100 iterations
## # weights: 102
## initial value 409.703702
## iter 10 value 251.340519
## iter 20 value 240.158706
## iter 30 value 172.638501
## iter 40 value 158.697659
## iter 50 value 151.394459
## iter 60 value 149.717293
## iter 70 value 149.620010
## iter 80 value 147.556763
## iter 90 value 135.559715
## iter 100 value 119.217021
## final value 119.217021
## stopped after 100 iterations
## # weights: 118
## initial value 330.023558
## iter 10 value 244.475290
## iter 20 value 193.930072
## iter 30 value 172.472517
## iter 40 value 157.353314
## iter 50 value 151.429762
## iter 60 value 136.973471
## iter 70 value 135.978532
## iter 80 value 135.779102
## iter 90 value 130.140554
## iter 100 value 116.786060
```



```
## final value 116.786060
## stopped after 100 iterations
## # weights: 134
## initial value 333.807066
## iter 10 value 252.089237
## iter 20 value 240.187251
## iter 30 value 175.617152
## iter 40 value 172.396090
## iter 50 value 157.034981
## iter 60 value 144.702888
## iter 70 value 134.636363
## iter 80 value 122.471598
## iter 90 value 110.866386
## iter 100 value 104.482643
## final value 104.482643
## stopped after 100 iterations
## # weights: 150
## initial value 258.731700
## iter 10 value 243.977335
## iter 20 value 182.116821
## iter 30 value 174.285029
## iter 40 value 170.485789
## iter 50 value 148.916263
## iter 60 value 116.286598
## iter 70 value 105.408504
## iter 80 value 98.512273
## iter 90 value 94.648451
## iter 100 value 92.190021
## final value 92.190021
## stopped after 100 iterations
## # weights: 166
## initial value 383.702442
## iter 10 value 252.347113
## iter 20 value 251.934680
## iter 30 value 241.391533
## iter 40 value 201.843414
## iter 50 value 171.932437
## iter 60 value 145.159778
## iter 70 value 123.171644
## iter 80 value 113.800155
## iter 90 value 107.826076
## iter 100 value 95.360774
## final value 95.360774
## stopped after 100 iterations
## # weights: 182
## initial value 337.959886
## iter 10 value 255.003094
## iter 20 value 247.625074
## iter 30 value 193.164438
## iter 40 value 176.170425
## iter 50 value 167.846594
## iter 60 value 128.414597
## iter 70 value 110.009562
## iter 80 value 98.625443
```

```
## iter 90 value 91.085452
## iter 100 value 84.526782
## final value 84.526782
## stopped after 100 iterations
## # weights: 198
## initial value 449.721032
## iter 10 value 252.507708
## iter 20 value 252.059979
## iter 30 value 224.821516
## iter 40 value 156.023562
## iter 50 value 141.174683
## iter 60 value 122.051798
## iter 70 value 111.445101
## iter 80 value 106.439411
## iter 90 value 104.211005
## iter 100 value 101.499467
## final value 101.499467
## stopped after 100 iterations
## # weights: 214
## initial value 277.885192
## iter 10 value 250.493571
## iter 20 value 185.315500
## iter 30 value 167.653364
## iter 40 value 159.482159
## iter 50 value 150.719389
## iter 60 value 149.809052
## iter 70 value 144.793687
## iter 80 value 140.401355
## iter 90 value 133.155617
## iter 100 value 125.055760
## final value 125.055760
## stopped after 100 iterations
## # weights: 230
## initial value 515.352013
## iter 10 value 249.656800
## iter 20 value 182.131719
## iter 30 value 175.599940
## iter 40 value 174.137408
## iter 50 value 163.727076
## iter 60 value 159.777294
## iter 70 value 132.690768
## iter 80 value 121.016951
## iter 90 value 118.590260
## iter 100 value 116.952875
## final value 116.952875
## stopped after 100 iterations
## # weights: 246
## initial value 334.362041
## iter 10 value 250.262945
## iter 20 value 190.825685
## iter 30 value 173.750968
## iter 40 value 172.308609
## iter 50 value 154.782397
## iter 60 value 130.279579
```

```
## iter 70 value 120.807744
## iter 80 value 119.360873
## iter 90 value 115.359678
## iter 100 value 108.864820
## final value 108.864820
## stopped after 100 iterations
## # weights: 102
## initial value 327.588888
## iter 10 value 252.217234
## iter 20 value 238.023274
## iter 30 value 201.727173
## iter 40 value 179.504459
## iter 50 value 173.965662
## iter 60 value 172.710995
## iter 70 value 160.663739
## iter 80 value 147.917562
## iter 90 value 138.458679
## iter 100 value 132.654766
## final value 132.654766
## stopped after 100 iterations
## # weights: 118
## initial value 335.901686
## iter 10 value 238.323427
## iter 20 value 190.731282
## iter 30 value 180.123094
## iter 40 value 159.925191
## iter 50 value 155.584533
## iter 60 value 151.159828
## iter 70 value 143.197821
## iter 80 value 138.148500
## iter 90 value 136.435770
## iter 100 value 126.893618
## final value 126.893618
## stopped after 100 iterations
## # weights: 134
## initial value 342.605215
## iter 10 value 251.333585
## iter 20 value 243.584411
## iter 30 value 200.466984
## iter 40 value 168.869184
## iter 50 value 147.655766
## iter 60 value 139.040371
## iter 70 value 132.440624
## iter 80 value 130.456663
## iter 90 value 122.686457
## iter 100 value 119.113121
## final value 119.113121
## stopped after 100 iterations
## # weights: 150
## initial value 283.227216
## iter 10 value 253.302844
## iter 20 value 247.980255
## iter 30 value 194.268878
## iter 40 value 184.196929
```

```
## iter 50 value 169.087742
## iter 60 value 147.681337
## iter 70 value 138.287765
## iter 80 value 133.538412
## iter 90 value 132.273513
## iter 100 value 130.469474
## final value 130.469474
## stopped after 100 iterations
## # weights: 166
## initial value 374.495962
## iter 10 value 255.608188
## iter 20 value 212.661529
## iter 30 value 197.324407
## iter 40 value 172.174688
## iter 50 value 161.370469
## iter 60 value 146.151740
## iter 70 value 139.339155
## iter 80 value 133.267628
## iter 90 value 127.667870
## iter 100 value 124.522839
## final value 124.522839
## stopped after 100 iterations
## # weights: 182
## initial value 336.896557
## iter 10 value 252.421146
## iter 20 value 212.237864
## iter 30 value 180.551110
## iter 40 value 174.731051
## iter 50 value 170.347524
## iter 60 value 157.731679
## iter 70 value 142.033968
## iter 80 value 134.031553
## iter 90 value 126.570131
## iter 100 value 121.466661
## final value 121.466661
## stopped after 100 iterations
## # weights: 198
## initial value 337.909147
## iter 10 value 256.646631
## iter 20 value 204.284360
## iter 30 value 185.908581
## iter 40 value 159.626595
## iter 50 value 148.065676
## iter 60 value 139.689278
## iter 70 value 130.144290
## iter 80 value 129.139400
## iter 90 value 126.894122
## iter 100 value 126.190890
## final value 126.190890
## stopped after 100 iterations
## # weights: 214
## initial value 343.774593
## iter 10 value 255.419198
## iter 20 value 251.476939
```

```
## iter 30 value 196.330247
## iter 40 value 183.028959
## iter 50 value 176.798056
## iter 60 value 164.332091
## iter 70 value 159.012367
## iter 80 value 151.674853
## iter 90 value 144.968186
## iter 100 value 139.911065
## final value 139.911065
## stopped after 100 iterations
## # weights: 230
## initial value 305.785959
## iter 10 value 253.424756
## iter 20 value 252.803972
## iter 30 value 189.799865
## iter 40 value 186.175642
## iter 50 value 180.848335
## iter 60 value 162.958205
## iter 70 value 154.787367
## iter 80 value 143.772901
## iter 90 value 131.778097
## iter 100 value 130.030920
## final value 130.030920
## stopped after 100 iterations
## # weights: 246
## initial value 385.324766
## iter 10 value 259.330289
## iter 20 value 252.214142
## iter 30 value 240.826702
## iter 40 value 185.578020
## iter 50 value 162.011879
## iter 60 value 159.503754
## iter 70 value 154.083346
## iter 80 value 150.306924
## iter 90 value 144.944528
## iter 100 value 139.994240
## final value 139.994240
## stopped after 100 iterations
## # weights: 102
## initial value 366.455395
## iter 10 value 254.982490
## iter 20 value 247.433626
## iter 30 value 225.489564
## iter 40 value 213.773792
## iter 50 value 203.167157
## iter 60 value 195.296728
## iter 70 value 192.822494
## iter 80 value 191.886370
## iter 90 value 191.618914
## iter 100 value 191.572210
## final value 191.572210
## stopped after 100 iterations
## # weights: 118
## initial value 435.922125
```

```
## iter 10 value 262.959429
## iter 20 value 242.003570
## iter 30 value 203.866407
## iter 40 value 198.501672
## iter 50 value 197.946002
## iter 60 value 194.560141
## iter 70 value 192.238671
## iter 80 value 189.419500
## iter 90 value 187.798252
## iter 100 value 187.528771
## final value 187.528771
## stopped after 100 iterations
## # weights: 134
## initial value 388.230955
## iter 10 value 255.910988
## iter 20 value 228.480175
## iter 30 value 210.227942
## iter 40 value 200.620707
## iter 50 value 194.438698
## iter 60 value 191.706123
## iter 70 value 189.149507
## iter 80 value 188.581029
## iter 90 value 187.975028
## iter 100 value 187.758107
## final value 187.758107
## stopped after 100 iterations
## # weights: 150
## initial value 466.883072
## iter 10 value 255.030923
## iter 20 value 248.225327
## iter 30 value 220.310966
## iter 40 value 207.003435
## iter 50 value 195.675112
## iter 60 value 191.635809
## iter 70 value 188.856394
## iter 80 value 187.379994
## iter 90 value 186.914460
## iter 100 value 186.447830
## final value 186.447830
## stopped after 100 iterations
## # weights: 166
## initial value 304.696541
## iter 10 value 258.454563
## iter 20 value 251.990312
## iter 30 value 241.860508
## iter 40 value 217.069149
## iter 50 value 196.788303
## iter 60 value 192.897668
## iter 70 value 190.321063
## iter 80 value 187.755272
## iter 90 value 186.652714
## iter 100 value 185.589090
## final value 185.589090
## stopped after 100 iterations
```

```
## # weights: 182
## initial value 355.392070
## iter 10 value 259.525237
## iter 20 value 250.602572
## iter 30 value 220.729625
## iter 40 value 204.825351
## iter 50 value 198.167204
## iter 60 value 195.183824
## iter 70 value 193.775882
## iter 80 value 189.539454
## iter 90 value 188.071923
## iter 100 value 187.464033
## final value 187.464033
## stopped after 100 iterations
## # weights: 198
## initial value 449.307470
## iter 10 value 256.163776
## iter 20 value 241.268738
## iter 30 value 211.831519
## iter 40 value 205.131679
## iter 50 value 199.368328
## iter 60 value 193.251132
## iter 70 value 188.460944
## iter 80 value 186.747491
## iter 90 value 186.409499
## iter 100 value 185.329877
## final value 185.329877
## stopped after 100 iterations
## # weights: 214
## initial value 450.706417
## iter 10 value 279.263603
## iter 20 value 267.023802
## iter 30 value 250.656033
## iter 40 value 227.940064
## iter 50 value 208.172180
## iter 60 value 204.250961
## iter 70 value 200.608863
## iter 80 value 193.754518
## iter 90 value 188.610746
## iter 100 value 186.939188
## final value 186.939188
## stopped after 100 iterations
## # weights: 230
## initial value 349.377729
## iter 10 value 267.930267
## iter 20 value 220.882517
## iter 30 value 209.383021
## iter 40 value 200.924314
## iter 50 value 197.423581
## iter 60 value 193.199890
## iter 70 value 188.132912
## iter 80 value 185.698112
## iter 90 value 184.597556
## iter 100 value 184.228263
```

```
## final value 184.228263
## stopped after 100 iterations
## # weights: 246
## initial value 584.521350
## iter 10 value 439.314069
## iter 20 value 425.210969
## iter 30 value 382.796258
## iter 40 value 312.482974
## iter 50 value 242.734625
## iter 60 value 211.469263
## iter 70 value 197.410918
## iter 80 value 194.286982
## iter 90 value 187.957735
## iter 100 value 186.477214
## final value 186.477214
## stopped after 100 iterations
## # weights: 102
## initial value 307.581926
## iter 10 value 244.830453
## final value 244.830419
## converged
## # weights: 118
## initial value 337.030382
## iter 10 value 257.895667
## iter 20 value 229.199246
## iter 30 value 156.336599
## iter 40 value 152.436419
## iter 50 value 152.272111
## iter 60 value 152.013343
## iter 70 value 151.693505
## iter 80 value 151.594080
## iter 90 value 151.560460
## iter 100 value 151.540582
## final value 151.540582
## stopped after 100 iterations
## # weights: 134
## initial value 484.097681
## iter 10 value 245.399812
## iter 20 value 242.035315
## iter 30 value 180.796436
## iter 40 value 166.711470
## iter 50 value 162.226660
## iter 60 value 161.754441
## iter 70 value 161.682624
## iter 80 value 161.671559
## iter 90 value 161.669255
## iter 100 value 161.668375
## final value 161.668375
## stopped after 100 iterations
## # weights: 150
## initial value 290.151507
## iter 10 value 240.615145
## iter 20 value 196.402345
## iter 30 value 191.838301
```



```
## iter 40 value 184.989013
## iter 50 value 167.658359
## iter 60 value 137.497435
## iter 70 value 121.906134
## iter 80 value 118.171192
## iter 90 value 117.139104
## iter 100 value 116.645010
## final value 116.645010
## stopped after 100 iterations
## # weights: 166
## initial value 351.598384
## iter 10 value 236.830351
## iter 20 value 176.823989
## iter 30 value 148.210789
## iter 40 value 127.127518
## iter 50 value 109.843946
## iter 60 value 104.975161
## iter 70 value 103.435007
## iter 80 value 102.510110
## iter 90 value 102.452361
## iter 100 value 102.389360
## final value 102.389360
## stopped after 100 iterations
## # weights: 182
## initial value 382.918115
## iter 10 value 244.830440
## final value 244.830428
## converged
## # weights: 198
## initial value 365.804110
## iter 10 value 253.530169
## final value 244.830428
## converged
## # weights: 214
## initial value 314.027111
## iter 10 value 244.830476
## final value 244.830418
## converged
## # weights: 230
## initial value 337.772217
## iter 10 value 243.608708
## iter 20 value 192.908186
## iter 30 value 167.249063
## iter 40 value 164.027875
## iter 50 value 133.527067
## iter 60 value 102.972873
## iter 70 value 100.640504
## iter 80 value 98.768752
## iter 90 value 98.061179
## iter 100 value 93.725233
## final value 93.725233
## stopped after 100 iterations
## # weights: 246
## initial value 273.053756
```

```
## iter 10 value 224.743746
## iter 20 value 179.185291
## iter 30 value 147.032230
## iter 40 value 135.737352
## iter 50 value 131.441652
## iter 60 value 129.907944
## iter 70 value 129.373281
## iter 80 value 129.009995
## iter 90 value 128.974566
## iter 100 value 128.859523
## final value 128.859523
## stopped after 100 iterations
## # weights: 102
## initial value 268.902026
## iter 10 value 244.999244
## iter 20 value 240.315888
## iter 30 value 215.122435
## iter 40 value 153.771694
## iter 50 value 123.438933
## iter 60 value 119.796335
## iter 70 value 117.993599
## iter 80 value 117.733891
## iter 90 value 117.561222
## iter 100 value 112.865403
## final value 112.865403
## stopped after 100 iterations
## # weights: 118
## initial value 380.123087
## iter 10 value 245.926187
## iter 20 value 245.083145
## iter 30 value 178.622719
## iter 40 value 144.041548
## iter 50 value 122.390203
## iter 60 value 113.251344
## iter 70 value 102.200534
## iter 80 value 91.671457
## iter 90 value 83.973046
## iter 100 value 80.703709
## final value 80.703709
## stopped after 100 iterations
## # weights: 134
## initial value 481.576047
## iter 10 value 245.017889
## iter 20 value 244.741289
## iter 30 value 219.345814
## iter 40 value 173.600179
## iter 50 value 162.004463
## iter 60 value 151.453132
## iter 70 value 141.981933
## iter 80 value 112.476600
## iter 90 value 96.124219
## iter 100 value 90.843906
## final value 90.843906
## stopped after 100 iterations
```

```
## # weights: 150
## initial value 285.181442
## iter 10 value 221.080561
## iter 20 value 179.353116
## iter 30 value 155.867858
## iter 40 value 149.606333
## iter 50 value 137.942329
## iter 60 value 105.304290
## iter 70 value 87.964130
## iter 80 value 81.243024
## iter 90 value 79.005606
## iter 100 value 76.605419
## final value 76.605419
## stopped after 100 iterations
## # weights: 166
## initial value 261.527536
## iter 10 value 233.717247
## iter 20 value 157.324408
## iter 30 value 141.906502
## iter 40 value 137.675363
## iter 50 value 127.655198
## iter 60 value 121.707196
## iter 70 value 108.289391
## iter 80 value 102.439958
## iter 90 value 95.310190
## iter 100 value 94.149652
## final value 94.149652
## stopped after 100 iterations
## # weights: 182
## initial value 307.219527
## iter 10 value 245.195799
## iter 20 value 244.741086
## iter 30 value 229.116565
## iter 40 value 175.497608
## iter 50 value 123.781516
## iter 60 value 106.245246
## iter 70 value 102.993074
## iter 80 value 92.850808
## iter 90 value 87.277307
## iter 100 value 84.111042
## final value 84.111042
## stopped after 100 iterations
## # weights: 198
## initial value 429.667388
## iter 10 value 245.360918
## iter 20 value 242.862400
## iter 30 value 205.544974
## iter 40 value 179.351825
## iter 50 value 149.044144
## iter 60 value 108.889920
## iter 70 value 94.160117
## iter 80 value 78.557779
## iter 90 value 71.497748
## iter 100 value 67.496773
```

```
## final value 67.496773
## stopped after 100 iterations
## # weights: 214
## initial value 276.437451
## iter 10 value 214.982257
## iter 20 value 157.391659
## iter 30 value 139.263874
## iter 40 value 137.273809
## iter 50 value 125.418493
## iter 60 value 107.116553
## iter 70 value 101.634831
## iter 80 value 89.421205
## iter 90 value 85.930481
## iter 100 value 84.301223
## final value 84.301223
## stopped after 100 iterations
## # weights: 230
## initial value 599.621665
## iter 10 value 249.336278
## iter 20 value 245.334982
## iter 30 value 240.512084
## iter 40 value 205.469298
## iter 50 value 182.648235
## iter 60 value 172.919891
## iter 70 value 136.822602
## iter 80 value 114.999349
## iter 90 value 104.910506
## iter 100 value 95.623632
## final value 95.623632
## stopped after 100 iterations
## # weights: 246
## initial value 413.778512
## iter 10 value 245.653334
## iter 20 value 231.249625
## iter 30 value 198.075466
## iter 40 value 189.148258
## iter 50 value 178.985831
## iter 60 value 152.903750
## iter 70 value 147.362636
## iter 80 value 126.246061
## iter 90 value 106.023444
## iter 100 value 102.866397
## final value 102.866397
## stopped after 100 iterations
## # weights: 102
## initial value 322.672810
## iter 10 value 245.086221
## iter 20 value 244.335286
## iter 30 value 225.796404
## iter 40 value 166.705226
## iter 50 value 144.153493
## iter 60 value 138.139413
## iter 70 value 130.707604
## iter 80 value 124.101736
```

```
## iter 90 value 117.408481
## iter 100 value 115.698173
## final value 115.698173
## stopped after 100 iterations
## # weights: 118
## initial value 430.062546
## iter 10 value 247.860467
## iter 20 value 208.235762
## iter 30 value 166.168677
## iter 40 value 157.164994
## iter 50 value 134.423410
## iter 60 value 128.890724
## iter 70 value 120.634043
## iter 80 value 116.617455
## iter 90 value 114.399546
## iter 100 value 111.152167
## final value 111.152167
## stopped after 100 iterations
## # weights: 134
## initial value 415.473775
## iter 10 value 265.112305
## iter 20 value 245.623181
## iter 30 value 221.569417
## iter 40 value 196.756479
## iter 50 value 137.611847
## iter 60 value 122.064805
## iter 70 value 117.457526
## iter 80 value 111.790173
## iter 90 value 108.029845
## iter 100 value 107.462484
## final value 107.462484
## stopped after 100 iterations
## # weights: 150
## initial value 275.136841
## iter 10 value 245.270790
## iter 20 value 227.736767
## iter 30 value 182.059023
## iter 40 value 166.203415
## iter 50 value 139.533716
## iter 60 value 129.092836
## iter 70 value 117.262480
## iter 80 value 110.966573
## iter 90 value 108.179757
## iter 100 value 105.806888
## final value 105.806888
## stopped after 100 iterations
## # weights: 166
## initial value 358.572712
## iter 10 value 249.557571
## iter 20 value 216.315859
## iter 30 value 187.029007
## iter 40 value 175.781782
## iter 50 value 170.422055
## iter 60 value 153.562166
```

```
## iter 70 value 132.677469
## iter 80 value 115.704812
## iter 90 value 110.743005
## iter 100 value 108.481475
## final value 108.481475
## stopped after 100 iterations
## # weights: 182
## initial value 364.410719
## iter 10 value 244.425460
## iter 20 value 235.317863
## iter 30 value 200.174524
## iter 40 value 170.720818
## iter 50 value 167.945161
## iter 60 value 145.191326
## iter 70 value 137.866599
## iter 80 value 128.078325
## iter 90 value 122.031766
## iter 100 value 118.238269
## final value 118.238269
## stopped after 100 iterations
## # weights: 198
## initial value 373.549325
## iter 10 value 248.391282
## iter 20 value 244.585079
## iter 30 value 184.520772
## iter 40 value 167.908538
## iter 50 value 157.887138
## iter 60 value 150.100322
## iter 70 value 132.723405
## iter 80 value 123.774144
## iter 90 value 118.179285
## iter 100 value 110.965050
## final value 110.965050
## stopped after 100 iterations
## # weights: 214
## initial value 350.658230
## iter 10 value 247.881593
## iter 20 value 237.853263
## iter 30 value 235.882602
## iter 40 value 209.338595
## iter 50 value 180.087298
## iter 60 value 151.818318
## iter 70 value 126.434144
## iter 80 value 120.291863
## iter 90 value 119.548691
## iter 100 value 115.579654
## final value 115.579654
## stopped after 100 iterations
## # weights: 230
## initial value 647.200729
## iter 10 value 252.372399
## iter 20 value 229.161741
## iter 30 value 202.359956
## iter 40 value 165.033281
```

```
## iter 50 value 133.516858
## iter 60 value 119.579183
## iter 70 value 113.462261
## iter 80 value 110.014622
## iter 90 value 107.676984
## iter 100 value 103.971703
## final value 103.971703
## stopped after 100 iterations
## # weights: 246
## initial value 360.921077
## iter 10 value 245.681785
## iter 20 value 243.596632
## iter 30 value 222.684100
## iter 40 value 188.645985
## iter 50 value 164.128526
## iter 60 value 153.106406
## iter 70 value 140.886540
## iter 80 value 130.341441
## iter 90 value 126.432862
## iter 100 value 120.045736
## final value 120.045736
## stopped after 100 iterations
## # weights: 102
## initial value 360.625731
## iter 10 value 251.271864
## iter 20 value 220.500526
## iter 30 value 203.288931
## iter 40 value 198.824719
## iter 50 value 193.200795
## iter 60 value 189.739877
## iter 70 value 188.817583
## iter 80 value 187.190021
## iter 90 value 186.641342
## iter 100 value 186.104239
## final value 186.104239
## stopped after 100 iterations
## # weights: 118
## initial value 515.214530
## iter 10 value 265.532448
## iter 20 value 240.426941
## iter 30 value 206.902563
## iter 40 value 196.409628
## iter 50 value 193.943085
## iter 60 value 192.421870
## iter 70 value 190.293872
## iter 80 value 188.679560
## iter 90 value 187.272774
## iter 100 value 186.847817
## final value 186.847817
## stopped after 100 iterations
## # weights: 134
## initial value 364.252692
## iter 10 value 254.778251
## iter 20 value 245.493560
```

```
## iter 30 value 215.423510
## iter 40 value 200.557421
## iter 50 value 194.242696
## iter 60 value 189.302887
## iter 70 value 187.631231
## iter 80 value 187.236786
## iter 90 value 186.501677
## iter 100 value 185.711455
## final value 185.711455
## stopped after 100 iterations
## # weights: 150
## initial value 339.497816
## iter 10 value 264.324334
## iter 20 value 247.896884
## iter 30 value 234.992467
## iter 40 value 210.913002
## iter 50 value 204.385462
## iter 60 value 194.646804
## iter 70 value 190.856440
## iter 80 value 187.906552
## iter 90 value 186.698401
## iter 100 value 185.796005
## final value 185.796005
## stopped after 100 iterations
## # weights: 166
## initial value 477.653708
## iter 10 value 248.262519
## iter 20 value 237.463303
## iter 30 value 219.861664
## iter 40 value 196.054030
## iter 50 value 192.645345
## iter 60 value 190.384627
## iter 70 value 188.115128
## iter 80 value 185.075332
## iter 90 value 184.165187
## iter 100 value 183.682286
## final value 183.682286
## stopped after 100 iterations
## # weights: 182
## initial value 342.825683
## iter 10 value 260.555861
## iter 20 value 232.383395
## iter 30 value 203.817325
## iter 40 value 200.957729
## iter 50 value 195.605688
## iter 60 value 188.416207
## iter 70 value 184.157017
## iter 80 value 181.981039
## iter 90 value 180.740232
## iter 100 value 180.361104
## final value 180.361104
## stopped after 100 iterations
## # weights: 198
## initial value 484.118356
```



```
## iter 10 value 303.569768
## iter 20 value 277.991422
## iter 30 value 251.989948
## iter 40 value 243.999308
## iter 50 value 229.142641
## iter 60 value 195.431698
## iter 70 value 192.294521
## iter 80 value 190.957588
## iter 90 value 188.922333
## iter 100 value 186.097576
## final value 186.097576
## stopped after 100 iterations
## # weights: 214
## initial value 435.242202
## iter 10 value 247.082631
## iter 20 value 244.104596
## iter 30 value 230.507947
## iter 40 value 209.842812
## iter 50 value 200.865205
## iter 60 value 193.778167
## iter 70 value 189.818170
## iter 80 value 186.298306
## iter 90 value 183.625860
## iter 100 value 181.982808
## final value 181.982808
## stopped after 100 iterations
## # weights: 230
## initial value 358.339502
## iter 10 value 252.731088
## iter 20 value 240.414241
## iter 30 value 214.758066
## iter 40 value 202.492307
## iter 50 value 194.932441
## iter 60 value 188.759012
## iter 70 value 187.244097
## iter 80 value 185.991006
## iter 90 value 184.751564
## iter 100 value 183.606335
## final value 183.606335
## stopped after 100 iterations
## # weights: 246
## initial value 436.227272
## iter 10 value 261.474318
## iter 20 value 247.199791
## iter 30 value 223.645378
## iter 40 value 203.073432
## iter 50 value 195.274230
## iter 60 value 191.034292
## iter 70 value 190.126022
## iter 80 value 188.746885
## iter 90 value 185.359801
## iter 100 value 182.141906
## final value 182.141906
## stopped after 100 iterations
```

```
## # weights: 102
## initial value 363.245538
## iter 10 value 270.253944
## final value 257.719675
## converged
## # weights: 118
## initial value 459.055341
## iter 10 value 257.542928
## iter 20 value 225.661707
## iter 30 value 199.109127
## iter 40 value 198.284881
## iter 50 value 198.127606
## iter 60 value 198.111688
## iter 70 value 198.109586
## iter 80 value 198.109297
## final value 198.109276
## converged
## # weights: 134
## initial value 299.199940
## iter 10 value 257.319864
## iter 20 value 240.225950
## iter 30 value 238.355125
## iter 40 value 238.118602
## iter 50 value 238.053919
## iter 60 value 238.043169
## iter 70 value 238.038367
## iter 80 value 238.036063
## iter 90 value 238.034532
## iter 100 value 238.033862
## final value 238.033862
## stopped after 100 iterations
## # weights: 150
## initial value 370.102526
## iter 10 value 257.730327
## final value 257.719694
## converged
## # weights: 166
## initial value 297.455096
## iter 10 value 256.616567
## iter 20 value 233.044644
## iter 30 value 182.697624
## iter 40 value 169.941617
## iter 50 value 168.631739
## iter 60 value 168.228474
## iter 70 value 167.257456
## iter 80 value 148.533418
## iter 90 value 136.835122
## iter 100 value 124.952530
## final value 124.952530
## stopped after 100 iterations
## # weights: 182
## initial value 313.523047
## iter 10 value 257.719555
## iter 20 value 257.211751
```

```
## iter 30 value 202.909460
## iter 40 value 199.997629
## iter 50 value 199.584490
## iter 60 value 199.540786
## iter 70 value 199.537398
## iter 80 value 182.483853
## iter 90 value 141.978500
## iter 100 value 115.028084
## final value 115.028084
## stopped after 100 iterations
## # weights: 198
## initial value 445.385202
## iter 10 value 260.252591
## final value 257.719672
## converged
## # weights: 214
## initial value 300.322916
## iter 10 value 257.861589
## iter 20 value 214.363513
## iter 30 value 175.479744
## iter 40 value 173.520119
## iter 50 value 171.682627
## iter 60 value 169.103223
## iter 70 value 157.195197
## iter 80 value 146.673329
## iter 90 value 137.586698
## iter 100 value 133.299975
## final value 133.299975
## stopped after 100 iterations
## # weights: 230
## initial value 315.638054
## iter 10 value 257.864074
## iter 20 value 208.890525
## iter 30 value 188.932085
## iter 40 value 188.501353
## iter 50 value 188.069717
## iter 60 value 187.730760
## iter 70 value 187.658434
## iter 80 value 187.481483
## iter 90 value 187.467184
## iter 100 value 187.322030
## final value 187.322030
## stopped after 100 iterations
## # weights: 246
## initial value 370.033032
## iter 10 value 258.350568
## iter 20 value 208.209129
## iter 30 value 172.268835
## iter 40 value 167.777680
## iter 50 value 165.813328
## iter 60 value 162.813256
## iter 70 value 162.523312
## iter 80 value 162.503433
## iter 90 value 162.456242
```

```
## iter 100 value 156.072186
## final value 156.072186
## stopped after 100 iterations
## # weights: 102
## initial value 407.832040
## iter 10 value 257.860156
## iter 20 value 236.007003
## iter 30 value 221.515614
## iter 40 value 209.804302
## iter 50 value 172.487922
## iter 60 value 168.320454
## iter 70 value 134.694914
## iter 80 value 117.597529
## iter 90 value 113.500603
## iter 100 value 100.517152
## final value 100.517152
## stopped after 100 iterations
## # weights: 118
## initial value 287.870166
## iter 10 value 257.909480
## iter 20 value 256.504877
## iter 30 value 231.982509
## iter 40 value 177.360630
## iter 50 value 168.710677
## iter 60 value 154.130925
## iter 70 value 131.440354
## iter 80 value 121.311166
## iter 90 value 108.434152
## iter 100 value 95.054059
## final value 95.054059
## stopped after 100 iterations
## # weights: 134
## initial value 304.648877
## iter 10 value 258.810636
## iter 20 value 255.434672
## iter 30 value 213.214984
## iter 40 value 196.074336
## iter 50 value 193.988559
## iter 60 value 193.764195
## iter 70 value 190.676173
## iter 80 value 157.866346
## iter 90 value 122.042491
## iter 100 value 111.613228
## final value 111.613228
## stopped after 100 iterations
## # weights: 150
## initial value 338.501180
## iter 10 value 258.143484
## iter 20 value 257.054017
## iter 30 value 247.618893
## iter 40 value 210.672026
## iter 50 value 188.347425
## iter 60 value 178.888116
## iter 70 value 151.480084
```

```
## iter 80 value 135.194778
## iter 90 value 131.855390
## iter 100 value 123.912017
## final value 123.912017
## stopped after 100 iterations
## # weights: 166
## initial value 322.471062
## iter 10 value 257.974662
## iter 20 value 257.203795
## iter 30 value 189.585382
## iter 40 value 165.086992
## iter 50 value 130.559801
## iter 60 value 126.464118
## iter 70 value 118.876186
## iter 80 value 98.874614
## iter 90 value 93.454737
## iter 100 value 87.359511
## final value 87.359511
## stopped after 100 iterations
## # weights: 182
## initial value 375.046988
## iter 10 value 257.124926
## iter 20 value 207.402300
## iter 30 value 170.201334
## iter 40 value 160.217812
## iter 50 value 155.038230
## iter 60 value 150.529655
## iter 70 value 143.503646
## iter 80 value 135.315403
## iter 90 value 126.361837
## iter 100 value 109.474569
## final value 109.474569
## stopped after 100 iterations
## # weights: 198
## initial value 342.112088
## iter 10 value 256.361630
## iter 20 value 215.489467
## iter 30 value 166.361243
## iter 40 value 149.736283
## iter 50 value 117.349380
## iter 60 value 100.215130
## iter 70 value 93.245117
## iter 80 value 89.025501
## iter 90 value 88.213522
## iter 100 value 87.644776
## final value 87.644776
## stopped after 100 iterations
## # weights: 214
## initial value 308.089825
## iter 10 value 258.053251
## iter 20 value 257.527764
## iter 30 value 253.551682
## iter 40 value 205.234196
## iter 50 value 181.242907
```

```
## iter 60 value 175.031859
## iter 70 value 167.389964
## iter 80 value 154.274565
## iter 90 value 149.112711
## iter 100 value 146.953139
## final value 146.953139
## stopped after 100 iterations
## # weights: 230
## initial value 351.262884
## iter 10 value 258.077662
## iter 20 value 257.550317
## iter 30 value 256.384042
## iter 40 value 216.891532
## iter 50 value 196.102337
## iter 60 value 171.430566
## iter 70 value 141.010690
## iter 80 value 111.129659
## iter 90 value 94.136203
## iter 100 value 85.961273
## final value 85.961273
## stopped after 100 iterations
## # weights: 246
## initial value 408.612564
## iter 10 value 250.869445
## iter 20 value 212.118802
## iter 30 value 174.249549
## iter 40 value 157.084224
## iter 50 value 123.507546
## iter 60 value 109.294257
## iter 70 value 103.521369
## iter 80 value 102.444025
## iter 90 value 101.769010
## iter 100 value 99.030427
## final value 99.030427
## stopped after 100 iterations
## # weights: 102
## initial value 309.522264
## iter 10 value 258.026868
## iter 20 value 257.703754
## iter 30 value 254.180905
## iter 40 value 241.422582
## iter 50 value 192.136602
## iter 60 value 161.884141
## iter 70 value 134.981431
## iter 80 value 125.792011
## iter 90 value 123.245690
## iter 100 value 120.943152
## final value 120.943152
## stopped after 100 iterations
## # weights: 118
## initial value 354.681977
## iter 10 value 259.037087
## iter 20 value 257.292824
## iter 30 value 245.071367
```

```
## iter 40 value 209.675325
## iter 50 value 179.915009
## iter 60 value 168.111451
## iter 70 value 148.162115
## iter 80 value 145.652201
## iter 90 value 133.159975
## iter 100 value 119.893092
## final value 119.893092
## stopped after 100 iterations
## # weights: 134
## initial value 341.923251
## iter 10 value 257.328766
## iter 20 value 240.024110
## iter 30 value 181.821261
## iter 40 value 171.010581
## iter 50 value 157.369418
## iter 60 value 137.334372
## iter 70 value 132.167958
## iter 80 value 124.153159
## iter 90 value 120.354411
## iter 100 value 117.369769
## final value 117.369769
## stopped after 100 iterations
## # weights: 150
## initial value 346.702520
## iter 10 value 260.937876
## iter 20 value 255.697903
## iter 30 value 227.087211
## iter 40 value 164.650140
## iter 50 value 148.056221
## iter 60 value 144.826696
## iter 70 value 134.616282
## iter 80 value 130.360811
## iter 90 value 129.339940
## iter 100 value 125.280270
## final value 125.280270
## stopped after 100 iterations
## # weights: 166
## initial value 516.621183
## iter 10 value 266.872796
## iter 20 value 234.959990
## iter 30 value 202.543999
## iter 40 value 165.952491
## iter 50 value 141.915467
## iter 60 value 126.873945
## iter 70 value 121.901067
## iter 80 value 120.192430
## iter 90 value 118.895575
## iter 100 value 117.982447
## final value 117.982447
## stopped after 100 iterations
## # weights: 182
## initial value 320.825937
## iter 10 value 259.085269
```

```
## iter 20 value 243.901948
## iter 30 value 230.394405
## iter 40 value 194.463111
## iter 50 value 174.542378
## iter 60 value 148.896351
## iter 70 value 132.544927
## iter 80 value 130.208745
## iter 90 value 124.195654
## iter 100 value 120.903129
## final value 120.903129
## stopped after 100 iterations
## # weights: 198
## initial value 558.058498
## iter 10 value 263.717879
## iter 20 value 251.101551
## iter 30 value 207.283447
## iter 40 value 174.475180
## iter 50 value 159.712522
## iter 60 value 145.273358
## iter 70 value 135.925883
## iter 80 value 122.422921
## iter 90 value 117.042975
## iter 100 value 116.475263
## final value 116.475263
## stopped after 100 iterations
## # weights: 214
## initial value 277.014793
## iter 10 value 259.011138
## iter 20 value 235.193561
## iter 30 value 205.700668
## iter 40 value 180.648569
## iter 50 value 156.764230
## iter 60 value 141.215003
## iter 70 value 134.013982
## iter 80 value 126.577194
## iter 90 value 120.290438
## iter 100 value 116.110590
## final value 116.110590
## stopped after 100 iterations
## # weights: 230
## initial value 365.077071
## iter 10 value 260.534689
## iter 20 value 246.105989
## iter 30 value 194.087673
## iter 40 value 178.293204
## iter 50 value 149.785390
## iter 60 value 132.129577
## iter 70 value 128.633442
## iter 80 value 122.976668
## iter 90 value 120.548296
## iter 100 value 119.883254
## final value 119.883254
## stopped after 100 iterations
## # weights: 246
```



```
## initial value 373.539155
## iter 10 value 261.885545
## iter 20 value 258.164893
## iter 30 value 223.763110
## iter 40 value 187.274004
## iter 50 value 179.500689
## iter 60 value 173.039805
## iter 70 value 155.495297
## iter 80 value 133.151559
## iter 90 value 120.659011
## iter 100 value 115.548050
## final value 115.548050
## stopped after 100 iterations
## # weights: 102
## initial value 325.859258
## iter 10 value 259.586504
## iter 20 value 239.722732
## iter 30 value 214.021891
## iter 40 value 197.991785
## iter 50 value 190.054132
## iter 60 value 187.812476
## iter 70 value 187.291666
## iter 80 value 186.139612
## iter 90 value 186.022335
## iter 100 value 186.019778
## final value 186.019778
## stopped after 100 iterations
## # weights: 118
## initial value 316.771440
## iter 10 value 259.240645
## iter 20 value 255.686039
## iter 30 value 246.076894
## iter 40 value 208.755461
## iter 50 value 193.257417
## iter 60 value 189.853801
## iter 70 value 189.024273
## iter 80 value 187.347813
## iter 90 value 186.765046
## iter 100 value 186.345677
## final value 186.345677
## stopped after 100 iterations
## # weights: 134
## initial value 385.520331
## iter 10 value 263.319067
## iter 20 value 256.997954
## iter 30 value 227.225649
## iter 40 value 206.959499
## iter 50 value 195.072892
## iter 60 value 188.958012
## iter 70 value 187.117514
## iter 80 value 186.296283
## iter 90 value 186.051726
## iter 100 value 185.937015
## final value 185.937015
```

```
## stopped after 100 iterations
## # weights: 150
## initial value 389.902137
## iter 10 value 268.410888
## iter 20 value 259.226249
## iter 30 value 238.618954
## iter 40 value 213.089698
## iter 50 value 201.441138
## iter 60 value 192.418306
## iter 70 value 189.777351
## iter 80 value 189.181971
## iter 90 value 186.690227
## iter 100 value 185.411954
## final value 185.411954
## stopped after 100 iterations
## # weights: 166
## initial value 349.645523
## iter 10 value 270.055709
## iter 20 value 248.068189
## iter 30 value 218.928057
## iter 40 value 208.443838
## iter 50 value 198.111981
## iter 60 value 193.554024
## iter 70 value 188.771371
## iter 80 value 184.717072
## iter 90 value 183.285793
## iter 100 value 182.999183
## final value 182.999183
## stopped after 100 iterations
## # weights: 182
## initial value 368.503567
## iter 10 value 260.813514
## iter 20 value 255.452481
## iter 30 value 238.560909
## iter 40 value 207.444861
## iter 50 value 196.614414
## iter 60 value 190.805298
## iter 70 value 188.125114
## iter 80 value 186.302231
## iter 90 value 185.191234
## iter 100 value 184.762097
## final value 184.762097
## stopped after 100 iterations
## # weights: 198
## initial value 359.863736
## iter 10 value 267.592499
## iter 20 value 264.632061
## iter 30 value 243.654445
## iter 40 value 217.834364
## iter 50 value 209.229491
## iter 60 value 198.353726
## iter 70 value 190.805295
## iter 80 value 186.466286
## iter 90 value 184.635279
```

```
## iter 100 value 182.840753
## final value 182.840753
## stopped after 100 iterations
## # weights: 214
## initial value 317.912597
## iter 10 value 230.256979
## iter 20 value 213.667649
## iter 30 value 203.104451
## iter 40 value 197.227319
## iter 50 value 191.326402
## iter 60 value 187.114516
## iter 70 value 184.145351
## iter 80 value 182.932737
## iter 90 value 182.358800
## iter 100 value 181.844447
## final value 181.844447
## stopped after 100 iterations
## # weights: 230
## initial value 449.870416
## iter 10 value 270.380307
## iter 20 value 265.179193
## iter 30 value 247.777671
## iter 40 value 220.330925
## iter 50 value 206.204685
## iter 60 value 196.215334
## iter 70 value 191.932742
## iter 80 value 187.854243
## iter 90 value 185.374220
## iter 100 value 183.105062
## final value 183.105062
## stopped after 100 iterations
## # weights: 246
## initial value 383.956242
## iter 10 value 281.440887
## iter 20 value 243.433297
## iter 30 value 218.616330
## iter 40 value 214.639009
## iter 50 value 210.834754
## iter 60 value 200.457463
## iter 70 value 193.598309
## iter 80 value 187.892803
## iter 90 value 185.126119
## iter 100 value 183.987225
## final value 183.987225
## stopped after 100 iterations
## # weights: 102
## initial value 292.205942
## iter 10 value 241.561135
## iter 20 value 240.434775
## iter 30 value 200.582250
## iter 40 value 194.199345
## iter 50 value 194.193295
## final value 194.193084
## converged
```

```
## # weights: 118
## initial value 355.618679
## iter 10 value 241.561625
## final value 241.561619
## converged
## # weights: 134
## initial value 409.056734
## iter 10 value 241.566051
## iter 20 value 241.288968
## iter 30 value 235.870549
## iter 40 value 178.706432
## iter 50 value 170.665143
## iter 60 value 159.990473
## iter 70 value 142.779644
## iter 80 value 140.188777
## iter 90 value 139.649779
## iter 100 value 137.936910
## final value 137.936910
## stopped after 100 iterations
## # weights: 150
## initial value 383.400330
## iter 10 value 241.561671
## final value 241.561594
## converged
## # weights: 166
## initial value 360.144662
## iter 10 value 241.595874
## iter 20 value 241.467280
## iter 30 value 200.467078
## iter 40 value 178.318026
## iter 50 value 132.567440
## iter 60 value 119.612788
## iter 70 value 115.580773
## iter 80 value 112.040235
## iter 90 value 110.832885
## iter 100 value 109.382876
## final value 109.382876
## stopped after 100 iterations
## # weights: 182
## initial value 314.164410
## iter 10 value 242.404820
## iter 20 value 208.338505
## iter 30 value 171.111153
## iter 40 value 130.356857
## iter 50 value 115.205922
## iter 60 value 112.201217
## iter 70 value 111.397325
## iter 80 value 110.537700
## iter 90 value 108.878780
## iter 100 value 108.092037
## final value 108.092037
## stopped after 100 iterations
## # weights: 198
## initial value 377.277576
```

```
## iter 10 value 241.963762
## final value 241.561608
## converged
## # weights: 214
## initial value 299.282800
## iter 10 value 241.567421
## iter 20 value 209.361659
## iter 30 value 177.892445
## iter 40 value 177.658541
## iter 50 value 177.632565
## iter 60 value 177.630184
## final value 177.630066
## converged
## # weights: 230
## initial value 546.112309
## iter 10 value 243.995818
## iter 20 value 188.347491
## iter 30 value 171.146149
## iter 40 value 170.286224
## iter 50 value 153.702824
## iter 60 value 147.569722
## iter 70 value 147.339363
## iter 80 value 147.119040
## iter 90 value 122.018299
## iter 100 value 106.674354
## final value 106.674354
## stopped after 100 iterations
## # weights: 246
## initial value 439.415688
## iter 10 value 241.835769
## final value 241.561611
## converged
## # weights: 102
## initial value 319.247744
## iter 10 value 241.712251
## iter 20 value 186.134681
## iter 30 value 171.683390
## iter 40 value 161.157482
## iter 50 value 140.337046
## iter 60 value 128.634100
## iter 70 value 125.030311
## iter 80 value 121.011705
## iter 90 value 119.513702
## iter 100 value 119.096627
## final value 119.096627
## stopped after 100 iterations
## # weights: 118
## initial value 452.225366
## iter 10 value 241.712369
## iter 20 value 241.162190
## iter 30 value 192.287125
## iter 40 value 150.219734
## iter 50 value 146.413628
## iter 60 value 145.151401
```

```
## iter 70 value 143.761642
## iter 80 value 135.347747
## iter 90 value 114.325990
## iter 100 value 102.778635
## final value 102.778635
## stopped after 100 iterations
## # weights: 134
## initial value 350.283855
## iter 10 value 241.781210
## iter 20 value 240.088735
## iter 30 value 224.399948
## iter 40 value 197.936086
## iter 50 value 165.719246
## iter 60 value 150.964989
## iter 70 value 148.151086
## iter 80 value 121.074559
## iter 90 value 117.334233
## iter 100 value 116.670715
## final value 116.670715
## stopped after 100 iterations
## # weights: 150
## initial value 407.273587
## iter 10 value 241.818404
## iter 20 value 239.273686
## iter 30 value 202.714853
## iter 40 value 154.601291
## iter 50 value 148.607414
## iter 60 value 139.275912
## iter 70 value 124.912737
## iter 80 value 116.637865
## iter 90 value 111.684072
## iter 100 value 106.290421
## final value 106.290421
## stopped after 100 iterations
## # weights: 166
## initial value 344.461363
## iter 10 value 241.773475
## iter 20 value 240.378435
## iter 30 value 198.835075
## iter 40 value 160.781234
## iter 50 value 152.431228
## iter 60 value 126.332101
## iter 70 value 101.829818
## iter 80 value 85.721323
## iter 90 value 81.205855
## iter 100 value 79.219137
## final value 79.219137
## stopped after 100 iterations
## # weights: 182
## initial value 366.040359
## iter 10 value 242.175585
## iter 20 value 206.584463
## iter 30 value 185.154430
## iter 40 value 155.618176
```

```
## iter 50 value 130.751562
## iter 60 value 129.020131
## iter 70 value 122.279498
## iter 80 value 107.944075
## iter 90 value 101.341377
## iter 100 value 93.822664
## final value 93.822664
## stopped after 100 iterations
## # weights: 198
## initial value 398.215701
## iter 10 value 244.240909
## iter 20 value 177.806566
## iter 30 value 165.671277
## iter 40 value 159.635422
## iter 50 value 154.344918
## iter 60 value 135.367881
## iter 70 value 129.571660
## iter 80 value 128.467568
## iter 90 value 117.093629
## iter 100 value 104.407838
## final value 104.407838
## stopped after 100 iterations
## # weights: 214
## initial value 434.530438
## iter 10 value 243.675978
## iter 20 value 215.391907
## iter 30 value 172.709010
## iter 40 value 169.205851
## iter 50 value 165.263736
## iter 60 value 143.536941
## iter 70 value 122.621616
## iter 80 value 115.957547
## iter 90 value 104.086192
## iter 100 value 98.630930
## final value 98.630930
## stopped after 100 iterations
## # weights: 230
## initial value 404.718282
## iter 10 value 242.441834
## iter 20 value 241.787516
## iter 30 value 221.282931
## iter 40 value 202.434611
## iter 50 value 171.459156
## iter 60 value 120.547510
## iter 70 value 93.377720
## iter 80 value 80.061877
## iter 90 value 75.858283
## iter 100 value 73.287869
## final value 73.287869
## stopped after 100 iterations
## # weights: 246
## initial value 355.990690
## iter 10 value 248.665117
## iter 20 value 231.738295
```

```
## iter 30 value 153.340387
## iter 40 value 144.835626
## iter 50 value 131.522722
## iter 60 value 123.092358
## iter 70 value 119.957406
## iter 80 value 111.610562
## iter 90 value 98.121973
## iter 100 value 87.618285
## final value 87.618285
## stopped after 100 iterations
## # weights: 102
## initial value 285.598203
## iter 10 value 239.491957
## iter 20 value 197.539670
## iter 30 value 170.048308
## iter 40 value 150.783520
## iter 50 value 148.160954
## iter 60 value 147.374128
## iter 70 value 145.278797
## iter 80 value 137.570960
## iter 90 value 128.056770
## iter 100 value 124.767902
## final value 124.767902
## stopped after 100 iterations
## # weights: 118
## initial value 348.656436
## iter 10 value 243.940965
## iter 20 value 242.099462
## iter 30 value 213.086102
## iter 40 value 152.500575
## iter 50 value 148.787328
## iter 60 value 146.118185
## iter 70 value 139.097698
## iter 80 value 127.573926
## iter 90 value 117.230327
## iter 100 value 114.420390
## final value 114.420390
## stopped after 100 iterations
## # weights: 134
## initial value 347.302435
## iter 10 value 246.748529
## iter 20 value 246.126359
## iter 30 value 231.713037
## iter 40 value 180.929436
## iter 50 value 157.637476
## iter 60 value 144.108794
## iter 70 value 138.042069
## iter 80 value 129.872272
## iter 90 value 128.092244
## iter 100 value 127.186115
## final value 127.186115
## stopped after 100 iterations
## # weights: 150
## initial value 303.179789
```



```
## iter 10 value 243.468845
## iter 20 value 233.925141
## iter 30 value 207.710494
## iter 40 value 165.013601
## iter 50 value 147.419610
## iter 60 value 131.725402
## iter 70 value 119.391433
## iter 80 value 116.043380
## iter 90 value 114.502943
## iter 100 value 113.462834
## final value 113.462834
## stopped after 100 iterations
## # weights: 166
## initial value 376.646724
## iter 10 value 241.400818
## iter 20 value 200.887228
## iter 30 value 175.859799
## iter 40 value 169.144678
## iter 50 value 148.742592
## iter 60 value 126.799718
## iter 70 value 116.241180
## iter 80 value 111.186947
## iter 90 value 108.946123
## iter 100 value 107.678336
## final value 107.678336
## stopped after 100 iterations
## # weights: 182
## initial value 537.555644
## iter 10 value 247.255632
## iter 20 value 241.572895
## iter 30 value 202.745389
## iter 40 value 178.716217
## iter 50 value 149.996463
## iter 60 value 134.414516
## iter 70 value 122.434106
## iter 80 value 117.614969
## iter 90 value 114.077631
## iter 100 value 112.547534
## final value 112.547534
## stopped after 100 iterations
## # weights: 198
## initial value 340.028176
## iter 10 value 242.392976
## iter 20 value 240.771038
## iter 30 value 229.105198
## iter 40 value 163.631153
## iter 50 value 146.455661
## iter 60 value 144.363260
## iter 70 value 134.797719
## iter 80 value 126.557314
## iter 90 value 124.891985
## iter 100 value 116.263952
## final value 116.263952
## stopped after 100 iterations
```

```
## # weights: 214
## initial value 327.875328
## iter 10 value 244.124213
## iter 20 value 238.262500
## iter 30 value 190.030314
## iter 40 value 156.972586
## iter 50 value 147.229919
## iter 60 value 137.944470
## iter 70 value 134.888990
## iter 80 value 124.192617
## iter 90 value 115.112854
## iter 100 value 112.702174
## final value 112.702174
## stopped after 100 iterations
## # weights: 230
## initial value 569.089399
## iter 10 value 249.660161
## iter 20 value 243.106317
## iter 30 value 224.166046
## iter 40 value 200.861565
## iter 50 value 180.794561
## iter 60 value 166.847220
## iter 70 value 148.227634
## iter 80 value 136.117533
## iter 90 value 128.049774
## iter 100 value 125.838968
## final value 125.838968
## stopped after 100 iterations
## # weights: 246
## initial value 296.707528
## iter 10 value 239.934654
## iter 20 value 191.571989
## iter 30 value 166.490141
## iter 40 value 149.091522
## iter 50 value 137.123368
## iter 60 value 130.773992
## iter 70 value 122.792652
## iter 80 value 120.351339
## iter 90 value 118.263138
## iter 100 value 112.284014
## final value 112.284014
## stopped after 100 iterations
## # weights: 102
## initial value 359.294510
## iter 10 value 275.826452
## iter 20 value 245.742508
## iter 30 value 239.584085
## iter 40 value 210.369533
## iter 50 value 197.144381
## iter 60 value 191.520300
## iter 70 value 188.075693
## iter 80 value 187.124805
## iter 90 value 186.486649
## iter 100 value 186.310620
```

```
## final value 186.310620
## stopped after 100 iterations
## # weights: 118
## initial value 346.101524
## iter 10 value 251.614701
## iter 20 value 240.267273
## iter 30 value 222.082129
## iter 40 value 205.847277
## iter 50 value 198.041195
## iter 60 value 196.503973
## iter 70 value 196.207622
## iter 80 value 195.092616
## iter 90 value 190.174465
## iter 100 value 187.848912
## final value 187.848912
## stopped after 100 iterations
## # weights: 134
## initial value 308.146899
## iter 10 value 248.881009
## iter 20 value 243.152504
## iter 30 value 227.771517
## iter 40 value 206.591107
## iter 50 value 203.099986
## iter 60 value 197.871643
## iter 70 value 193.845315
## iter 80 value 191.923526
## iter 90 value 189.487716
## iter 100 value 187.142003
## final value 187.142003
## stopped after 100 iterations
## # weights: 150
## initial value 409.951390
## iter 10 value 245.236954
## iter 20 value 228.158114
## iter 30 value 216.942542
## iter 40 value 200.119757
## iter 50 value 190.533733
## iter 60 value 185.707020
## iter 70 value 183.707725
## iter 80 value 182.527397
## iter 90 value 182.112384
## iter 100 value 180.768523
## final value 180.768523
## stopped after 100 iterations
## # weights: 166
## initial value 453.817923
## iter 10 value 255.389873
## iter 20 value 245.552840
## iter 30 value 223.522351
## iter 40 value 213.117595
## iter 50 value 203.599015
## iter 60 value 198.346219
## iter 70 value 194.916465
## iter 80 value 189.599605
```

```
## iter 90 value 185.678922
## iter 100 value 183.645810
## final value 183.645810
## stopped after 100 iterations
## # weights: 182
## initial value 350.845996
## iter 10 value 228.458128
## iter 20 value 216.822388
## iter 30 value 205.226373
## iter 40 value 194.914300
## iter 50 value 190.316344
## iter 60 value 188.375423
## iter 70 value 187.276096
## iter 80 value 185.279257
## iter 90 value 183.556647
## iter 100 value 183.176960
## final value 183.176960
## stopped after 100 iterations
## # weights: 198
## initial value 371.653107
## iter 10 value 245.925558
## iter 20 value 242.563797
## iter 30 value 228.587893
## iter 40 value 202.846861
## iter 50 value 197.041469
## iter 60 value 192.402026
## iter 70 value 187.602768
## iter 80 value 184.365169
## iter 90 value 182.892626
## iter 100 value 181.519150
## final value 181.519150
## stopped after 100 iterations
## # weights: 214
## initial value 346.624005
## iter 10 value 254.702045
## iter 20 value 244.363301
## iter 30 value 206.105558
## iter 40 value 193.798332
## iter 50 value 190.671268
## iter 60 value 188.491928
## iter 70 value 186.218687
## iter 80 value 184.265532
## iter 90 value 183.104306
## iter 100 value 181.048380
## final value 181.048380
## stopped after 100 iterations
## # weights: 230
## initial value 418.413600
## iter 10 value 255.742697
## iter 20 value 231.651872
## iter 30 value 211.544175
## iter 40 value 198.798940
## iter 50 value 195.558953
## iter 60 value 189.957233
```

```
## iter 70 value 185.267347
## iter 80 value 182.553941
## iter 90 value 181.502248
## iter 100 value 180.809356
## final value 180.809356
## stopped after 100 iterations
## # weights: 246
## initial value 401.518901
## iter 10 value 263.868557
## iter 20 value 240.783231
## iter 30 value 230.198670
## iter 40 value 206.324951
## iter 50 value 193.054889
## iter 60 value 186.506634
## iter 70 value 184.111978
## iter 80 value 183.133745
## iter 90 value 182.203325
## iter 100 value 181.230280
## final value 181.230280
## stopped after 100 iterations
## # weights: 102
## initial value 313.224043
## iter 10 value 266.908890
## iter 20 value 231.856389
## iter 30 value 199.084427
## iter 40 value 198.367653
## iter 50 value 194.723639
## iter 60 value 189.229085
## iter 70 value 188.016075
## iter 80 value 185.901690
## iter 90 value 184.535250
## iter 100 value 183.892911
## final value 183.892911
## stopped after 100 iterations
## # weights: 118
## initial value 332.410295
## iter 10 value 268.630685
## final value 268.630575
## converged
## # weights: 134
## initial value 309.250026
## iter 10 value 268.630632
## final value 268.630574
## converged
## # weights: 150
## initial value 315.843332
## iter 10 value 240.689768
## iter 20 value 208.728352
## iter 30 value 203.654722
## iter 40 value 201.076885
## iter 50 value 194.194026
## iter 60 value 185.162910
## iter 70 value 173.479558
## iter 80 value 161.754682
```

```
## iter 90 value 148.095423
## iter 100 value 144.853370
## final value 144.853370
## stopped after 100 iterations
## # weights: 166
## initial value 600.146330
## iter 10 value 263.259813
## iter 20 value 208.271505
## iter 30 value 182.823562
## iter 40 value 164.913289
## iter 50 value 137.540309
## iter 60 value 128.681006
## iter 70 value 124.022124
## iter 80 value 121.618665
## iter 90 value 120.796836
## iter 100 value 119.841226
## final value 119.841226
## stopped after 100 iterations
## # weights: 182
## initial value 466.152436
## iter 10 value 269.656573
## final value 268.630574
## converged
## # weights: 198
## initial value 311.015364
## iter 10 value 269.331915
## iter 20 value 217.065535
## iter 30 value 203.645046
## iter 40 value 200.651135
## iter 50 value 198.629315
## iter 60 value 198.080686
## iter 70 value 197.812173
## iter 80 value 197.804007
## iter 90 value 197.745571
## iter 100 value 197.631298
## final value 197.631298
## stopped after 100 iterations
## # weights: 214
## initial value 386.054557
## iter 10 value 270.467625
## iter 20 value 252.992052
## iter 30 value 225.613796
## iter 40 value 185.274009
## iter 50 value 161.786019
## iter 60 value 137.708646
## iter 70 value 104.207657
## iter 80 value 97.940463
## iter 90 value 96.635935
## iter 100 value 96.362878
## final value 96.362878
## stopped after 100 iterations
## # weights: 230
## initial value 611.117601
## iter 10 value 275.939096
```

```
## iter 20 value 253.366136
## iter 30 value 204.028065
## iter 40 value 198.599893
## iter 50 value 197.060730
## iter 60 value 192.879810
## iter 70 value 183.746951
## iter 80 value 182.169069
## iter 90 value 162.003837
## iter 100 value 133.026078
## final value 133.026078
## stopped after 100 iterations
## # weights: 246
## initial value 484.174608
## iter 10 value 265.145598
## iter 20 value 211.241924
## iter 30 value 178.036827
## iter 40 value 155.441853
## iter 50 value 152.394726
## iter 60 value 131.196442
## iter 70 value 109.367457
## iter 80 value 100.703935
## iter 90 value 95.974633
## iter 100 value 91.259263
## final value 91.259263
## stopped after 100 iterations
## # weights: 102
## initial value 291.683563
## iter 10 value 268.879544
## iter 20 value 266.194785
## iter 30 value 262.555766
## iter 40 value 261.933567
## iter 50 value 254.644638
## iter 60 value 200.785917
## iter 70 value 165.505908
## iter 80 value 155.554130
## iter 90 value 145.955600
## iter 100 value 118.784124
## final value 118.784124
## stopped after 100 iterations
## # weights: 118
## initial value 412.873511
## iter 10 value 247.998667
## iter 20 value 193.253873
## iter 30 value 183.414975
## iter 40 value 179.809685
## iter 50 value 167.067693
## iter 60 value 131.212498
## iter 70 value 106.304256
## iter 80 value 100.156830
## iter 90 value 96.952962
## iter 100 value 94.029037
## final value 94.029037
## stopped after 100 iterations
## # weights: 134
```

```
## initial value 336.757220
## iter 10 value 268.775828
## iter 20 value 267.252224
## iter 30 value 219.983077
## iter 40 value 198.982656
## iter 50 value 188.517649
## iter 60 value 170.231312
## iter 70 value 162.958951
## iter 80 value 162.597139
## iter 90 value 161.447554
## iter 100 value 154.090113
## final value 154.090113
## stopped after 100 iterations
## # weights: 150
## initial value 352.356987
## iter 10 value 265.624047
## iter 20 value 204.050657
## iter 30 value 158.077780
## iter 40 value 152.593050
## iter 50 value 123.780010
## iter 60 value 87.204206
## iter 70 value 77.037530
## iter 80 value 75.222821
## iter 90 value 74.576477
## iter 100 value 72.431015
## final value 72.431015
## stopped after 100 iterations
## # weights: 166
## initial value 312.279716
## iter 10 value 269.203158
## iter 20 value 266.171592
## iter 30 value 213.949150
## iter 40 value 193.496224
## iter 50 value 178.771935
## iter 60 value 167.293213
## iter 70 value 162.410542
## iter 80 value 147.481212
## iter 90 value 131.371082
## iter 100 value 122.077423
## final value 122.077423
## stopped after 100 iterations
## # weights: 182
## initial value 413.588470
## iter 10 value 269.537826
## iter 20 value 266.801779
## iter 30 value 206.528022
## iter 40 value 194.092483
## iter 50 value 192.297048
## iter 60 value 184.010897
## iter 70 value 165.210273
## iter 80 value 144.444722
## iter 90 value 110.237201
## iter 100 value 94.183378
## final value 94.183378
```



```
## stopped after 100 iterations
## # weights: 198
## initial value 332.870464
## iter 10 value 263.831845
## iter 20 value 224.747536
## iter 30 value 180.994454
## iter 40 value 162.265122
## iter 50 value 139.054524
## iter 60 value 135.573627
## iter 70 value 110.472299
## iter 80 value 95.130443
## iter 90 value 86.793906
## iter 100 value 81.183122
## final value 81.183122
## stopped after 100 iterations
## # weights: 214
## initial value 337.946983
## iter 10 value 268.690839
## iter 20 value 226.553125
## iter 30 value 202.599015
## iter 40 value 198.363590
## iter 50 value 177.085879
## iter 60 value 158.635438
## iter 70 value 136.912103
## iter 80 value 99.211719
## iter 90 value 92.402630
## iter 100 value 87.849026
## final value 87.849026
## stopped after 100 iterations
## # weights: 230
## initial value 413.741389
## iter 10 value 272.184698
## iter 20 value 266.492446
## iter 30 value 219.193665
## iter 40 value 197.436812
## iter 50 value 161.881515
## iter 60 value 154.179232
## iter 70 value 134.563532
## iter 80 value 115.911771
## iter 90 value 104.716408
## iter 100 value 98.624706
## final value 98.624706
## stopped after 100 iterations
## # weights: 246
## initial value 276.895680
## iter 10 value 269.020031
## iter 20 value 267.206316
## iter 30 value 249.346559
## iter 40 value 218.325847
## iter 50 value 154.295544
## iter 60 value 135.192574
## iter 70 value 128.382441
## iter 80 value 114.260262
## iter 90 value 104.014400
```

```
## iter 100 value 94.513957
## final value 94.513957
## stopped after 100 iterations
## # weights: 102
## initial value 446.311457
## iter 10 value 269.717783
## iter 20 value 254.900743
## iter 30 value 192.954994
## iter 40 value 185.368635
## iter 50 value 166.407916
## iter 60 value 147.424958
## iter 70 value 136.240341
## iter 80 value 121.758750
## iter 90 value 118.340837
## iter 100 value 117.820141
## final value 117.820141
## stopped after 100 iterations
## # weights: 118
## initial value 328.523722
## iter 10 value 269.645870
## iter 20 value 254.174966
## iter 30 value 206.668195
## iter 40 value 173.740926
## iter 50 value 163.945775
## iter 60 value 160.865910
## iter 70 value 155.394057
## iter 80 value 139.542787
## iter 90 value 137.370372
## iter 100 value 134.973287
## final value 134.973287
## stopped after 100 iterations
## # weights: 134
## initial value 313.044677
## iter 10 value 270.616825
## iter 20 value 258.722392
## iter 30 value 194.599466
## iter 40 value 172.094682
## iter 50 value 160.296716
## iter 60 value 139.400832
## iter 70 value 130.797171
## iter 80 value 123.276037
## iter 90 value 118.378359
## iter 100 value 115.438617
## final value 115.438617
## stopped after 100 iterations
## # weights: 150
## initial value 371.903984
## iter 10 value 260.481470
## iter 20 value 228.268012
## iter 30 value 194.677546
## iter 40 value 176.676446
## iter 50 value 163.721067
## iter 60 value 153.378835
## iter 70 value 139.034388
```

```
## iter 80 value 129.931840
## iter 90 value 126.334400
## iter 100 value 123.152534
## final value 123.152534
## stopped after 100 iterations
## # weights: 166
## initial value 481.938187
## iter 10 value 269.668214
## iter 20 value 242.861329
## iter 30 value 227.961608
## iter 40 value 214.072082
## iter 50 value 179.702135
## iter 60 value 165.639873
## iter 70 value 143.467822
## iter 80 value 139.791119
## iter 90 value 136.603615
## iter 100 value 131.649722
## final value 131.649722
## stopped after 100 iterations
## # weights: 182
## initial value 324.357603
## iter 10 value 269.669635
## iter 20 value 227.834986
## iter 30 value 194.124196
## iter 40 value 185.610183
## iter 50 value 175.277521
## iter 60 value 162.574606
## iter 70 value 147.056194
## iter 80 value 132.859400
## iter 90 value 130.249527
## iter 100 value 128.706392
## final value 128.706392
## stopped after 100 iterations
## # weights: 198
## initial value 440.617230
## iter 10 value 240.460179
## iter 20 value 215.438404
## iter 30 value 204.257940
## iter 40 value 194.067181
## iter 50 value 164.506321
## iter 60 value 133.823093
## iter 70 value 117.686535
## iter 80 value 110.369408
## iter 90 value 108.158893
## iter 100 value 106.498914
## final value 106.498914
## stopped after 100 iterations
## # weights: 214
## initial value 361.477488
## iter 10 value 269.456501
## iter 20 value 230.570369
## iter 30 value 207.518254
## iter 40 value 201.607713
## iter 50 value 192.098057
```

```
## iter 60 value 164.588421
## iter 70 value 139.660962
## iter 80 value 122.102048
## iter 90 value 116.321446
## iter 100 value 112.863259
## final value 112.863259
## stopped after 100 iterations
## # weights: 230
## initial value 482.003530
## iter 10 value 269.721152
## iter 20 value 253.576159
## iter 30 value 193.050852
## iter 40 value 180.929289
## iter 50 value 167.531847
## iter 60 value 161.967088
## iter 70 value 155.355671
## iter 80 value 146.687512
## iter 90 value 133.697725
## iter 100 value 122.155792
## final value 122.155792
## stopped after 100 iterations
## # weights: 246
## initial value 339.313565
## iter 10 value 270.031717
## iter 20 value 248.004638
## iter 30 value 207.841595
## iter 40 value 202.702409
## iter 50 value 186.356742
## iter 60 value 170.477034
## iter 70 value 149.751475
## iter 80 value 147.169976
## iter 90 value 137.106044
## iter 100 value 123.787803
## final value 123.787803
## stopped after 100 iterations
## # weights: 102
## initial value 373.280625
## iter 10 value 270.636641
## iter 20 value 243.504908
## iter 30 value 225.828293
## iter 40 value 221.021829
## iter 50 value 215.576705
## iter 60 value 211.680177
## iter 70 value 210.867604
## iter 80 value 210.687969
## iter 90 value 210.664314
## iter 100 value 210.663704
## final value 210.663704
## stopped after 100 iterations
## # weights: 118
## initial value 322.548434
## iter 10 value 282.556895
## iter 20 value 244.833243
## iter 30 value 236.335316
```

```
## iter 40 value 224.674298
## iter 50 value 217.034921
## iter 60 value 208.702624
## iter 70 value 207.331471
## iter 80 value 206.864316
## iter 90 value 206.474993
## iter 100 value 206.313167
## final value 206.313167
## stopped after 100 iterations
## # weights: 134
## initial value 405.217242
## iter 10 value 277.773239
## iter 20 value 269.425484
## iter 30 value 258.951261
## iter 40 value 221.826112
## iter 50 value 211.170076
## iter 60 value 208.689600
## iter 70 value 207.267184
## iter 80 value 206.767551
## iter 90 value 206.460384
## iter 100 value 206.219005
## final value 206.219005
## stopped after 100 iterations
## # weights: 150
## initial value 366.661694
## iter 10 value 279.289635
## iter 20 value 274.482063
## iter 30 value 268.985940
## iter 40 value 238.352308
## iter 50 value 223.889642
## iter 60 value 219.350687
## iter 70 value 212.530653
## iter 80 value 209.834750
## iter 90 value 208.967583
## iter 100 value 208.513047
## final value 208.513047
## stopped after 100 iterations
## # weights: 166
## initial value 419.107333
## iter 10 value 273.347991
## iter 20 value 247.040339
## iter 30 value 226.222222
## iter 40 value 222.172379
## iter 50 value 215.401901
## iter 60 value 210.662373
## iter 70 value 207.644368
## iter 80 value 204.725994
## iter 90 value 203.180072
## iter 100 value 202.341186
## final value 202.341186
## stopped after 100 iterations
## # weights: 182
## initial value 399.426084
## iter 10 value 273.307777
```

```
## iter 20 value 244.852537
## iter 30 value 235.030581
## iter 40 value 229.264039
## iter 50 value 217.464414
## iter 60 value 208.362609
## iter 70 value 206.319174
## iter 80 value 205.376043
## iter 90 value 203.902168
## iter 100 value 202.845933
## final value 202.845933
## stopped after 100 iterations
## # weights: 198
## initial value 344.635520
## iter 10 value 277.638452
## iter 20 value 248.295839
## iter 30 value 234.867493
## iter 40 value 220.203325
## iter 50 value 215.796953
## iter 60 value 210.312243
## iter 70 value 205.954118
## iter 80 value 203.651013
## iter 90 value 202.868733
## iter 100 value 202.337996
## final value 202.337996
## stopped after 100 iterations
## # weights: 214
## initial value 359.285141
## iter 10 value 281.141421
## iter 20 value 255.243020
## iter 30 value 231.087811
## iter 40 value 216.330251
## iter 50 value 209.819468
## iter 60 value 206.108121
## iter 70 value 203.628796
## iter 80 value 202.751254
## iter 90 value 202.471380
## iter 100 value 201.912294
## final value 201.912294
## stopped after 100 iterations
## # weights: 230
## initial value 505.104961
## iter 10 value 293.908581
## iter 20 value 263.966879
## iter 30 value 247.383586
## iter 40 value 234.825504
## iter 50 value 227.077033
## iter 60 value 216.327967
## iter 70 value 208.527928
## iter 80 value 205.270418
## iter 90 value 202.239848
## iter 100 value 201.158046
## final value 201.158046
## stopped after 100 iterations
## # weights: 246
```

```
## initial value 479.299929
## iter 10 value 294.542575
## iter 20 value 272.433234
## iter 30 value 268.638055
## iter 40 value 250.742988
## iter 50 value 225.317853
## iter 60 value 212.006286
## iter 70 value 204.977078
## iter 80 value 203.326282
## iter 90 value 201.247037
## iter 100 value 200.476173
## final value 200.476173
## stopped after 100 iterations
## # weights: 102
## initial value 352.622018
## iter 10 value 244.649136
## final value 244.594367
## converged
## # weights: 118
## initial value 459.600059
## iter 10 value 244.516587
## iter 20 value 241.747133
## iter 30 value 212.350216
## iter 40 value 175.284349
## iter 50 value 160.294685
## iter 60 value 158.094528
## iter 70 value 155.848927
## iter 80 value 154.616155
## iter 90 value 153.445749
## iter 100 value 152.720813
## final value 152.720813
## stopped after 100 iterations
## # weights: 134
## initial value 415.997033
## iter 10 value 243.799142
## iter 20 value 171.885725
## iter 30 value 165.538668
## iter 40 value 165.524022
## iter 50 value 165.510467
## iter 60 value 165.396705
## iter 70 value 165.183074
## iter 80 value 164.260885
## iter 90 value 164.027194
## iter 100 value 163.970040
## final value 163.970040
## stopped after 100 iterations
## # weights: 150
## initial value 404.637380
## iter 10 value 244.497458
## iter 20 value 232.958724
## iter 30 value 157.707224
## iter 40 value 146.924073
## iter 50 value 137.777167
## iter 60 value 132.704582
```

```
## iter 70 value 132.390739
## iter 80 value 131.380245
## iter 90 value 130.672143
## iter 100 value 130.118374
## final value 130.118374
## stopped after 100 iterations
## # weights: 166
## initial value 381.655804
## iter 10 value 244.610436
## iter 20 value 241.950013
## iter 30 value 178.378172
## iter 40 value 166.619035
## iter 50 value 153.633485
## iter 60 value 134.059314
## iter 70 value 115.731002
## iter 80 value 111.017658
## iter 90 value 110.072252
## iter 100 value 107.867980
## final value 107.867980
## stopped after 100 iterations
## # weights: 182
## initial value 310.925795
## iter 10 value 245.539986
## final value 244.594363
## converged
## # weights: 198
## initial value 292.419672
## iter 10 value 244.594498
## final value 244.594374
## converged
## # weights: 214
## initial value 307.549247
## iter 10 value 244.612701
## iter 20 value 199.467938
## iter 30 value 131.193200
## iter 40 value 107.546065
## iter 50 value 100.376469
## iter 60 value 96.656690
## iter 70 value 96.439230
## iter 80 value 96.365699
## iter 90 value 96.332769
## iter 100 value 96.325803
## final value 96.325803
## stopped after 100 iterations
## # weights: 230
## initial value 263.343748
## iter 10 value 244.600854
## final value 244.594225
## converged
## # weights: 246
## initial value 278.301742
## iter 10 value 231.466542
## iter 20 value 202.677152
## iter 30 value 155.248423
```



```
## iter 40 value 128.933770
## iter 50 value 105.162635
## iter 60 value 99.995289
## iter 70 value 94.020426
## iter 80 value 91.535094
## iter 90 value 89.272076
## iter 100 value 84.668447
## final value 84.668447
## stopped after 100 iterations
## # weights: 102
## initial value 328.588793
## iter 10 value 244.760399
## iter 20 value 243.883348
## iter 30 value 233.486142
## iter 40 value 177.940596
## iter 50 value 139.745702
## iter 60 value 131.779630
## iter 70 value 129.432121
## iter 80 value 110.764949
## iter 90 value 100.305521
## iter 100 value 94.915660
## final value 94.915660
## stopped after 100 iterations
## # weights: 118
## initial value 330.136437
## iter 10 value 239.977103
## iter 20 value 206.060371
## iter 30 value 168.492527
## iter 40 value 146.702807
## iter 50 value 129.325008
## iter 60 value 125.176486
## iter 70 value 119.654214
## iter 80 value 117.536886
## iter 90 value 116.777873
## iter 100 value 116.697556
## final value 116.697556
## stopped after 100 iterations
## # weights: 134
## initial value 313.495631
## iter 10 value 244.777652
## iter 20 value 244.287194
## iter 30 value 226.416113
## iter 40 value 199.042048
## iter 50 value 164.661202
## iter 60 value 128.559397
## iter 70 value 114.056558
## iter 80 value 112.464358
## iter 90 value 111.585200
## iter 100 value 103.516867
## final value 103.516867
## stopped after 100 iterations
## # weights: 150
## initial value 364.458768
## iter 10 value 215.242544
```

```
## iter 20 value 170.962339
## iter 30 value 162.053970
## iter 40 value 158.413160
## iter 50 value 134.022361
## iter 60 value 120.074581
## iter 70 value 105.490524
## iter 80 value 94.061715
## iter 90 value 90.530424
## iter 100 value 89.568293
## final value 89.568293
## stopped after 100 iterations
## # weights: 166
## initial value 290.082640
## iter 10 value 243.444203
## iter 20 value 205.689694
## iter 30 value 182.401654
## iter 40 value 176.307347
## iter 50 value 154.112805
## iter 60 value 118.440055
## iter 70 value 103.634858
## iter 80 value 101.921760
## iter 90 value 94.312225
## iter 100 value 84.063633
## final value 84.063633
## stopped after 100 iterations
## # weights: 182
## initial value 415.153906
## iter 10 value 245.101401
## iter 20 value 242.883791
## iter 30 value 229.913748
## iter 40 value 159.308929
## iter 50 value 121.871102
## iter 60 value 114.017231
## iter 70 value 110.389633
## iter 80 value 92.130674
## iter 90 value 84.020325
## iter 100 value 80.971509
## final value 80.971509
## stopped after 100 iterations
## # weights: 198
## initial value 404.274885
## iter 10 value 239.407110
## iter 20 value 225.313658
## iter 30 value 191.119065
## iter 40 value 178.392365
## iter 50 value 161.387792
## iter 60 value 158.128962
## iter 70 value 154.184335
## iter 80 value 139.981864
## iter 90 value 124.193686
## iter 100 value 111.441842
## final value 111.441842
## stopped after 100 iterations
## # weights: 214
```

```
## initial value 324.099556
## iter 10 value 245.028380
## iter 20 value 244.452387
## iter 30 value 216.646399
## iter 40 value 173.358773
## iter 50 value 158.994335
## iter 60 value 150.336202
## iter 70 value 143.974851
## iter 80 value 104.649247
## iter 90 value 87.170481
## iter 100 value 78.818826
## final value 78.818826
## stopped after 100 iterations
## # weights: 230
## initial value 462.338454
## iter 10 value 245.055586
## iter 20 value 231.193270
## iter 30 value 165.428614
## iter 40 value 146.985745
## iter 50 value 140.334971
## iter 60 value 122.910789
## iter 70 value 112.748673
## iter 80 value 104.149049
## iter 90 value 88.157150
## iter 100 value 71.631455
## final value 71.631455
## stopped after 100 iterations
## # weights: 246
## initial value 256.101097
## iter 10 value 244.969635
## iter 20 value 242.364046
## iter 30 value 204.743762
## iter 40 value 172.726110
## iter 50 value 154.945683
## iter 60 value 139.949113
## iter 70 value 129.658333
## iter 80 value 126.845219
## iter 90 value 123.268758
## iter 100 value 110.961513
## final value 110.961513
## stopped after 100 iterations
## # weights: 102
## initial value 312.848828
## iter 10 value 244.309030
## iter 20 value 185.507359
## iter 30 value 171.024960
## iter 40 value 162.708150
## iter 50 value 151.247405
## iter 60 value 137.227982
## iter 70 value 130.333559
## iter 80 value 125.630706
## iter 90 value 120.200682
## iter 100 value 114.237902
## final value 114.237902
```

```
## stopped after 100 iterations
## # weights: 118
## initial value 258.743797
## iter 10 value 223.448133
## iter 20 value 196.966384
## iter 30 value 160.576499
## iter 40 value 135.180670
## iter 50 value 131.302315
## iter 60 value 124.224704
## iter 70 value 121.538252
## iter 80 value 120.174035
## iter 90 value 120.002080
## iter 100 value 119.911369
## final value 119.911369
## stopped after 100 iterations
## # weights: 134
## initial value 341.636740
## iter 10 value 247.533680
## iter 20 value 242.939550
## iter 30 value 229.329036
## iter 40 value 212.724047
## iter 50 value 184.065827
## iter 60 value 169.181359
## iter 70 value 156.662459
## iter 80 value 150.493595
## iter 90 value 137.092341
## iter 100 value 120.222753
## final value 120.222753
## stopped after 100 iterations
## # weights: 150
## initial value 454.017969
## iter 10 value 249.244470
## iter 20 value 228.919494
## iter 30 value 201.295747
## iter 40 value 184.880801
## iter 50 value 172.508181
## iter 60 value 149.931953
## iter 70 value 126.450931
## iter 80 value 114.667621
## iter 90 value 113.184222
## iter 100 value 109.259304
## final value 109.259304
## stopped after 100 iterations
## # weights: 166
## initial value 401.304936
## iter 10 value 247.947820
## iter 20 value 244.670678
## iter 30 value 187.945309
## iter 40 value 172.595035
## iter 50 value 162.144488
## iter 60 value 153.685077
## iter 70 value 144.020031
## iter 80 value 133.751903
## iter 90 value 120.269372
```

```
## iter 100 value 112.809464
## final value 112.809464
## stopped after 100 iterations
## # weights: 182
## initial value 384.851624
## iter 10 value 253.865404
## iter 20 value 234.086404
## iter 30 value 196.948858
## iter 40 value 173.987494
## iter 50 value 161.289788
## iter 60 value 149.963021
## iter 70 value 136.918833
## iter 80 value 126.804822
## iter 90 value 116.693074
## iter 100 value 111.655970
## final value 111.655970
## stopped after 100 iterations
## # weights: 198
## initial value 281.449494
## iter 10 value 235.246253
## iter 20 value 194.743535
## iter 30 value 167.527925
## iter 40 value 147.978348
## iter 50 value 136.987690
## iter 60 value 120.566076
## iter 70 value 114.689833
## iter 80 value 108.032078
## iter 90 value 104.260992
## iter 100 value 102.441861
## final value 102.441861
## stopped after 100 iterations
## # weights: 214
## initial value 376.086447
## iter 10 value 247.319105
## iter 20 value 244.677258
## iter 30 value 233.465843
## iter 40 value 195.970266
## iter 50 value 187.355254
## iter 60 value 167.076017
## iter 70 value 156.759796
## iter 80 value 148.630413
## iter 90 value 127.000044
## iter 100 value 114.193635
## final value 114.193635
## stopped after 100 iterations
## # weights: 230
## initial value 569.584317
## iter 10 value 242.090845
## iter 20 value 203.769146
## iter 30 value 193.293734
## iter 40 value 161.746306
## iter 50 value 153.806015
## iter 60 value 138.786875
## iter 70 value 126.154434
```

```
## iter 80 value 119.512415
## iter 90 value 116.376275
## iter 100 value 114.058879
## final value 114.058879
## stopped after 100 iterations
## # weights: 246
## initial value 355.590459
## iter 10 value 247.072800
## iter 20 value 244.753224
## iter 30 value 215.919002
## iter 40 value 192.009266
## iter 50 value 161.070359
## iter 60 value 144.195715
## iter 70 value 136.041960
## iter 80 value 130.888137
## iter 90 value 128.448576
## iter 100 value 126.169951
## final value 126.169951
## stopped after 100 iterations
## # weights: 102
## initial value 483.231486
## iter 10 value 250.149043
## iter 20 value 239.628059
## iter 30 value 213.845250
## iter 40 value 202.702766
## iter 50 value 196.422599
## iter 60 value 195.221304
## iter 70 value 191.526550
## iter 80 value 188.713465
## iter 90 value 187.611614
## iter 100 value 186.710655
## final value 186.710655
## stopped after 100 iterations
## # weights: 118
## initial value 407.770973
## iter 10 value 306.652692
## iter 20 value 285.810914
## iter 30 value 212.793655
## iter 40 value 206.981831
## iter 50 value 205.829109
## iter 60 value 201.056255
## iter 70 value 191.529732
## iter 80 value 187.622266
## iter 90 value 185.851410
## iter 100 value 182.404179
## final value 182.404179
## stopped after 100 iterations
## # weights: 134
## initial value 517.072826
## iter 10 value 245.809152
## iter 20 value 239.338643
## iter 30 value 217.475636
## iter 40 value 197.852882
## iter 50 value 193.676466
```

```
## iter 60 value 186.780168
## iter 70 value 184.245510
## iter 80 value 182.374053
## iter 90 value 181.438433
## iter 100 value 179.960733
## final value 179.960733
## stopped after 100 iterations
## # weights: 150
## initial value 391.582919
## iter 10 value 253.814863
## iter 20 value 236.916620
## iter 30 value 204.263072
## iter 40 value 197.593522
## iter 50 value 192.122685
## iter 60 value 186.635724
## iter 70 value 185.933618
## iter 80 value 183.770732
## iter 90 value 181.481166
## iter 100 value 180.252663
## final value 180.252663
## stopped after 100 iterations
## # weights: 166
## initial value 286.198528
## iter 10 value 251.557953
## iter 20 value 239.918246
## iter 30 value 199.923382
## iter 40 value 194.965025
## iter 50 value 192.851998
## iter 60 value 189.824696
## iter 70 value 185.364849
## iter 80 value 182.963732
## iter 90 value 181.474651
## iter 100 value 180.421566
## final value 180.421566
## stopped after 100 iterations
## # weights: 182
## initial value 431.757082
## iter 10 value 292.323303
## iter 20 value 246.618042
## iter 30 value 220.147844
## iter 40 value 203.293176
## iter 50 value 197.979574
## iter 60 value 191.698511
## iter 70 value 186.346439
## iter 80 value 184.257260
## iter 90 value 180.646367
## iter 100 value 179.099764
## final value 179.099764
## stopped after 100 iterations
## # weights: 198
## initial value 592.107395
## iter 10 value 266.218740
## iter 20 value 246.770112
## iter 30 value 220.733105
```

```
## iter 40 value 197.353184
## iter 50 value 192.508318
## iter 60 value 185.733249
## iter 70 value 182.681968
## iter 80 value 181.035331
## iter 90 value 180.451700
## iter 100 value 179.659598
## final value 179.659598
## stopped after 100 iterations
## # weights: 214
## initial value 559.535693
## iter 10 value 275.630960
## iter 20 value 264.361808
## iter 30 value 246.233937
## iter 40 value 202.866584
## iter 50 value 196.635211
## iter 60 value 194.543485
## iter 70 value 189.311038
## iter 80 value 184.080068
## iter 90 value 180.036994
## iter 100 value 178.307727
## final value 178.307727
## stopped after 100 iterations
## # weights: 230
## initial value 499.128867
## iter 10 value 267.565157
## iter 20 value 249.476462
## iter 30 value 243.676284
## iter 40 value 234.467079
## iter 50 value 202.061285
## iter 60 value 193.068939
## iter 70 value 189.848555
## iter 80 value 188.011634
## iter 90 value 186.630272
## iter 100 value 183.702559
## final value 183.702559
## stopped after 100 iterations
## # weights: 246
## initial value 373.067501
## iter 10 value 249.616187
## iter 20 value 238.351631
## iter 30 value 211.005704
## iter 40 value 200.582177
## iter 50 value 194.120847
## iter 60 value 188.482271
## iter 70 value 184.843450
## iter 80 value 182.051508
## iter 90 value 179.616217
## iter 100 value 178.350421
## final value 178.350421
## stopped after 100 iterations
## # weights: 102
## initial value 299.832536
## iter 10 value 263.880458
```



```
## final value 263.880434
## converged
## # weights: 118
## initial value 369.121085
## iter 10 value 263.884237
## iter 20 value 261.411596
## iter 30 value 209.403525
## iter 40 value 187.758430
## iter 50 value 180.431732
## iter 60 value 175.207902
## iter 70 value 174.816122
## iter 80 value 174.073955
## iter 90 value 168.460161
## iter 100 value 164.814122
## final value 164.814122
## stopped after 100 iterations
## # weights: 134
## initial value 306.556190
## iter 10 value 259.535759
## iter 20 value 195.106073
## iter 30 value 168.611161
## iter 40 value 162.517429
## iter 50 value 159.450031
## iter 60 value 156.676871
## iter 70 value 155.297321
## iter 80 value 154.859990
## iter 90 value 153.374018
## iter 100 value 152.808009
## final value 152.808009
## stopped after 100 iterations
## # weights: 150
## initial value 338.242662
## iter 10 value 263.880540
## iter 20 value 261.557759
## iter 30 value 208.397697
## iter 40 value 182.399564
## iter 50 value 180.562789
## iter 60 value 178.917597
## iter 70 value 178.832184
## iter 80 value 178.821235
## iter 90 value 178.816648
## final value 178.816557
## converged
## # weights: 166
## initial value 295.215320
## iter 10 value 257.330930
## iter 20 value 202.833843
## iter 30 value 186.882585
## iter 40 value 185.386198
## iter 50 value 178.082250
## iter 60 value 171.028239
## iter 70 value 161.197724
## iter 80 value 155.493042
## iter 90 value 144.766439
```

```
## iter 100 value 143.714235
## final value 143.714235
## stopped after 100 iterations
## # weights: 182
## initial value 409.799954
## iter 10 value 243.104824
## iter 20 value 196.019475
## iter 30 value 186.051206
## iter 40 value 159.943683
## iter 50 value 131.027632
## iter 60 value 109.483743
## iter 70 value 106.146223
## iter 80 value 105.478860
## iter 90 value 105.355917
## iter 100 value 105.317528
## final value 105.317528
## stopped after 100 iterations
## # weights: 198
## initial value 365.894768
## iter 10 value 263.578000
## iter 20 value 251.026298
## iter 30 value 210.684584
## iter 40 value 194.747679
## iter 50 value 193.751288
## iter 60 value 193.671283
## iter 70 value 193.661983
## iter 80 value 193.659620
## iter 90 value 193.658844
## iter 100 value 193.658612
## final value 193.658612
## stopped after 100 iterations
## # weights: 214
## initial value 334.962138
## iter 10 value 263.880620
## final value 263.880429
## converged
## # weights: 230
## initial value 356.450068
## iter 10 value 239.544504
## iter 20 value 207.282220
## iter 30 value 204.690938
## iter 40 value 204.660544
## iter 50 value 195.968120
## iter 60 value 194.544498
## iter 70 value 194.229032
## iter 80 value 192.976432
## iter 90 value 192.472927
## iter 100 value 191.910036
## final value 191.910036
## stopped after 100 iterations
## # weights: 246
## initial value 468.731356
## iter 10 value 263.881574
## final value 263.880355
```

```
## converged
## # weights: 102
## initial value 432.266387
## iter 10 value 263.997316
## iter 20 value 259.989225
## iter 30 value 234.749624
## iter 40 value 205.710097
## iter 50 value 174.245858
## iter 60 value 156.318915
## iter 70 value 153.166195
## iter 80 value 148.625071
## iter 90 value 129.205503
## iter 100 value 121.490398
## final value 121.490398
## stopped after 100 iterations
## # weights: 118
## initial value 359.231784
## iter 10 value 264.067713
## iter 20 value 263.277138
## iter 30 value 244.225947
## iter 40 value 204.436499
## iter 50 value 201.264217
## iter 60 value 182.151823
## iter 70 value 158.684278
## iter 80 value 146.616804
## iter 90 value 126.461238
## iter 100 value 115.609996
## final value 115.609996
## stopped after 100 iterations
## # weights: 134
## initial value 305.771720
## iter 10 value 262.373761
## iter 20 value 220.560259
## iter 30 value 207.260604
## iter 40 value 203.395202
## iter 50 value 190.816568
## iter 60 value 146.092770
## iter 70 value 111.376458
## iter 80 value 95.795561
## iter 90 value 91.842876
## iter 100 value 86.721596
## final value 86.721596
## stopped after 100 iterations
## # weights: 150
## initial value 308.794734
## iter 10 value 260.821565
## iter 20 value 213.419629
## iter 30 value 207.427519
## iter 40 value 205.187654
## iter 50 value 196.772993
## iter 60 value 193.693453
## iter 70 value 184.723444
## iter 80 value 162.673586
## iter 90 value 160.263647
```

```
## iter 100 value 145.833858
## final value 145.833858
## stopped after 100 iterations
## # weights: 166
## initial value 299.210701
## iter 10 value 262.795566
## iter 20 value 201.188916
## iter 30 value 168.913183
## iter 40 value 144.997160
## iter 50 value 140.195601
## iter 60 value 139.856336
## iter 70 value 131.635686
## iter 80 value 114.906631
## iter 90 value 110.605906
## iter 100 value 105.990328
## final value 105.990328
## stopped after 100 iterations
## # weights: 182
## initial value 483.245556
## iter 10 value 269.224480
## iter 20 value 189.836767
## iter 30 value 180.031773
## iter 40 value 171.298757
## iter 50 value 156.648416
## iter 60 value 132.065666
## iter 70 value 103.403949
## iter 80 value 96.999005
## iter 90 value 88.034460
## iter 100 value 79.576550
## final value 79.576550
## stopped after 100 iterations
## # weights: 198
## initial value 328.619791
## iter 10 value 271.576474
## iter 20 value 263.935096
## iter 30 value 263.141755
## iter 40 value 220.416879
## iter 50 value 180.883222
## iter 60 value 167.041874
## iter 70 value 159.241044
## iter 80 value 129.129650
## iter 90 value 107.571314
## iter 100 value 98.830128
## final value 98.830128
## stopped after 100 iterations
## # weights: 214
## initial value 397.965896
## iter 10 value 264.366425
## iter 20 value 262.918201
## iter 30 value 245.351564
## iter 40 value 189.825966
## iter 50 value 152.147317
## iter 60 value 143.866849
## iter 70 value 140.762936
```

```
## iter 80 value 139.679669
## iter 90 value 128.055954
## iter 100 value 97.183380
## final value 97.183380
## stopped after 100 iterations
## # weights: 230
## initial value 430.302642
## iter 10 value 235.611072
## iter 20 value 208.377534
## iter 30 value 172.724252
## iter 40 value 162.828364
## iter 50 value 142.928500
## iter 60 value 138.202370
## iter 70 value 132.785234
## iter 80 value 130.657479
## iter 90 value 128.206609
## iter 100 value 101.697687
## final value 101.697687
## stopped after 100 iterations
## # weights: 246
## initial value 331.940112
## iter 10 value 264.811583
## iter 20 value 262.420828
## iter 30 value 214.433388
## iter 40 value 183.229117
## iter 50 value 168.409895
## iter 60 value 159.570645
## iter 70 value 147.880663
## iter 80 value 143.976261
## iter 90 value 130.732135
## iter 100 value 113.592270
## final value 113.592270
## stopped after 100 iterations
## # weights: 102
## initial value 300.216735
## iter 10 value 263.668238
## iter 20 value 233.585638
## iter 30 value 216.136941
## iter 40 value 196.925925
## iter 50 value 178.700446
## iter 60 value 175.441404
## iter 70 value 163.011414
## iter 80 value 154.122278
## iter 90 value 148.887268
## iter 100 value 140.403145
## final value 140.403145
## stopped after 100 iterations
## # weights: 118
## initial value 363.845872
## iter 10 value 266.414475
## iter 20 value 264.363613
## iter 30 value 259.126022
## iter 40 value 221.746157
## iter 50 value 193.001436
```

```
## iter 60 value 181.927212
## iter 70 value 157.841374
## iter 80 value 143.177995
## iter 90 value 135.555321
## iter 100 value 132.527450
## final value 132.527450
## stopped after 100 iterations
## # weights: 134
## initial value 376.753414
## iter 10 value 264.435155
## iter 20 value 262.780668
## iter 30 value 182.528704
## iter 40 value 171.507134
## iter 50 value 170.632937
## iter 60 value 169.683024
## iter 70 value 167.064686
## iter 80 value 163.910592
## iter 90 value 151.462471
## iter 100 value 138.857877
## final value 138.857877
## stopped after 100 iterations
## # weights: 150
## initial value 308.674626
## iter 10 value 259.515327
## iter 20 value 209.488146
## iter 30 value 177.344230
## iter 40 value 171.969540
## iter 50 value 157.487487
## iter 60 value 152.614956
## iter 70 value 132.216836
## iter 80 value 124.030499
## iter 90 value 120.121464
## iter 100 value 118.416789
## final value 118.416789
## stopped after 100 iterations
## # weights: 166
## initial value 511.802486
## iter 10 value 264.688415
## iter 20 value 218.596255
## iter 30 value 195.688865
## iter 40 value 188.629948
## iter 50 value 178.262080
## iter 60 value 175.685082
## iter 70 value 165.043931
## iter 80 value 147.573081
## iter 90 value 128.225258
## iter 100 value 123.126604
## final value 123.126604
## stopped after 100 iterations
## # weights: 182
## initial value 391.946831
## iter 10 value 262.204332
## iter 20 value 248.307101
## iter 30 value 201.830415
```

```
## iter 40 value 173.340168
## iter 50 value 154.298679
## iter 60 value 130.911724
## iter 70 value 126.670232
## iter 80 value 122.989787
## iter 90 value 120.430207
## iter 100 value 118.529451
## final value 118.529451
## stopped after 100 iterations
## # weights: 198
## initial value 301.644431
## iter 10 value 266.821741
## iter 20 value 256.685511
## iter 30 value 238.036670
## iter 40 value 221.503180
## iter 50 value 188.530533
## iter 60 value 172.137947
## iter 70 value 164.688014
## iter 80 value 161.245851
## iter 90 value 154.175643
## iter 100 value 146.093236
## final value 146.093236
## stopped after 100 iterations
## # weights: 214
## initial value 458.490116
## iter 10 value 269.938090
## iter 20 value 264.903611
## iter 30 value 238.597428
## iter 40 value 207.420464
## iter 50 value 191.636064
## iter 60 value 181.985493
## iter 70 value 168.641149
## iter 80 value 153.218579
## iter 90 value 143.569119
## iter 100 value 136.170494
## final value 136.170494
## stopped after 100 iterations
## # weights: 230
## initial value 370.377366
## iter 10 value 256.892979
## iter 20 value 220.705746
## iter 30 value 203.786257
## iter 40 value 182.426309
## iter 50 value 173.051554
## iter 60 value 160.232708
## iter 70 value 132.143881
## iter 80 value 126.416578
## iter 90 value 122.281275
## iter 100 value 118.762181
## final value 118.762181
## stopped after 100 iterations
## # weights: 246
## initial value 423.374909
## iter 10 value 269.246961
```

```
## iter 20 value 221.902985
## iter 30 value 201.462678
## iter 40 value 194.375734
## iter 50 value 187.318216
## iter 60 value 176.750368
## iter 70 value 167.863829
## iter 80 value 156.196974
## iter 90 value 145.356999
## iter 100 value 135.674853
## final value 135.674853
## stopped after 100 iterations
## # weights: 102
## initial value 399.533183
## iter 10 value 269.066277
## iter 20 value 264.539372
## iter 30 value 233.783936
## iter 40 value 213.542879
## iter 50 value 208.685987
## iter 60 value 207.441697
## iter 70 value 207.126609
## iter 80 value 205.201408
## iter 90 value 204.386577
## iter 100 value 204.369953
## final value 204.369953
## stopped after 100 iterations
## # weights: 118
## initial value 404.451866
## iter 10 value 267.226481
## iter 20 value 249.572466
## iter 30 value 226.956953
## iter 40 value 217.316771
## iter 50 value 214.960631
## iter 60 value 210.830483
## iter 70 value 208.621392
## iter 80 value 204.560895
## iter 90 value 203.356143
## iter 100 value 203.283348
## final value 203.283348
## stopped after 100 iterations
## # weights: 134
## initial value 341.968480
## iter 10 value 268.467515
## iter 20 value 264.559267
## iter 30 value 241.128212
## iter 40 value 222.521689
## iter 50 value 205.909873
## iter 60 value 203.139898
## iter 70 value 201.373086
## iter 80 value 200.682109
## iter 90 value 200.401953
## iter 100 value 199.964729
## final value 199.964729
## stopped after 100 iterations
## # weights: 150
```



```
## initial value 326.088315
## iter 10 value 269.879597
## iter 20 value 264.724314
## iter 30 value 256.046587
## iter 40 value 236.477246
## iter 50 value 226.092718
## iter 60 value 210.079331
## iter 70 value 203.611112
## iter 80 value 202.628132
## iter 90 value 201.091677
## iter 100 value 200.088150
## final value 200.088150
## stopped after 100 iterations
## # weights: 166
## initial value 371.628879
## iter 10 value 257.538624
## iter 20 value 241.105192
## iter 30 value 223.128855
## iter 40 value 210.364243
## iter 50 value 205.223502
## iter 60 value 201.895483
## iter 70 value 200.820221
## iter 80 value 199.620954
## iter 90 value 198.976048
## iter 100 value 198.686971
## final value 198.686971
## stopped after 100 iterations
## # weights: 182
## initial value 362.827269
## iter 10 value 274.546612
## iter 20 value 266.748801
## iter 30 value 248.171541
## iter 40 value 232.191222
## iter 50 value 211.765387
## iter 60 value 208.676314
## iter 70 value 204.071485
## iter 80 value 201.319115
## iter 90 value 200.577920
## iter 100 value 199.048359
## final value 199.048359
## stopped after 100 iterations
## # weights: 198
## initial value 415.067739
## iter 10 value 267.812862
## iter 20 value 253.525184
## iter 30 value 233.421319
## iter 40 value 218.484721
## iter 50 value 211.376823
## iter 60 value 208.022003
## iter 70 value 204.083753
## iter 80 value 200.986049
## iter 90 value 200.112201
## iter 100 value 199.761183
## final value 199.761183
```

```
## stopped after 100 iterations
## # weights: 214
## initial value 318.149619
## iter 10 value 267.508378
## iter 20 value 244.180091
## iter 30 value 223.466965
## iter 40 value 212.224972
## iter 50 value 206.527660
## iter 60 value 205.622295
## iter 70 value 202.582895
## iter 80 value 201.154398
## iter 90 value 199.568977
## iter 100 value 198.168370
## final value 198.168370
## stopped after 100 iterations
## # weights: 230
## initial value 647.151462
## iter 10 value 398.229796
## iter 20 value 302.710631
## iter 30 value 267.931734
## iter 40 value 236.905102
## iter 50 value 215.674781
## iter 60 value 205.277475
## iter 70 value 201.552469
## iter 80 value 199.263672
## iter 90 value 198.282880
## iter 100 value 197.949767
## final value 197.949767
## stopped after 100 iterations
## # weights: 246
## initial value 365.804560
## iter 10 value 267.552688
## iter 20 value 252.026893
## iter 30 value 233.513785
## iter 40 value 213.455135
## iter 50 value 207.738590
## iter 60 value 203.050906
## iter 70 value 200.665148
## iter 80 value 198.191176
## iter 90 value 196.871303
## iter 100 value 195.997400
## final value 195.997400
## stopped after 100 iterations
## # weights: 102
## initial value 301.779123
## iter 10 value 239.439750
## final value 239.439685
## converged
## # weights: 118
## initial value 333.035777
## iter 10 value 228.963407
## iter 20 value 179.579199
## iter 30 value 174.229518
## iter 40 value 170.221568
```

```
## iter 50 value 168.266506
## iter 60 value 162.183041
## iter 70 value 153.143165
## iter 80 value 138.332264
## iter 90 value 136.512001
## iter 100 value 135.755909
## final value 135.755909
## stopped after 100 iterations
## # weights: 134
## initial value 347.459495
## iter 10 value 239.444910
## final value 239.439689
## converged
## # weights: 150
## initial value 373.857442
## iter 10 value 239.633027
## final value 239.439689
## converged
## # weights: 166
## initial value 517.128712
## iter 10 value 239.451486
## final value 239.439598
## converged
## # weights: 182
## initial value 404.664266
## iter 10 value 239.442741
## final value 239.439672
## converged
## # weights: 198
## initial value 469.769844
## iter 10 value 239.615716
## final value 239.439664
## converged
## # weights: 214
## initial value 385.338676
## iter 10 value 234.495835
## iter 20 value 181.221545
## iter 30 value 139.703314
## iter 40 value 130.787525
## iter 50 value 129.555335
## iter 60 value 126.804361
## iter 70 value 120.922867
## iter 80 value 110.855884
## iter 90 value 105.671232
## iter 100 value 97.993762
## final value 97.993762
## stopped after 100 iterations
## # weights: 230
## initial value 330.235940
## iter 10 value 239.645491
## iter 20 value 178.872959
## iter 30 value 176.595357
## iter 40 value 172.508780
## iter 50 value 170.925032
```

```
## iter 60 value 170.480565
## iter 70 value 164.553838
## iter 80 value 163.917046
## iter 90 value 162.162657
## iter 100 value 151.557720
## final value 151.557720
## stopped after 100 iterations
## # weights: 246
## initial value 283.294076
## iter 10 value 227.287742
## iter 20 value 181.546998
## iter 30 value 177.137436
## iter 40 value 142.138661
## iter 50 value 127.936104
## iter 60 value 126.055517
## iter 70 value 121.959174
## iter 80 value 111.555721
## iter 90 value 109.894565
## iter 100 value 109.595139
## final value 109.595139
## stopped after 100 iterations
## # weights: 102
## initial value 260.933987
## iter 10 value 213.717329
## iter 20 value 181.859085
## iter 30 value 181.493754
## iter 40 value 181.311553
## iter 50 value 177.885398
## iter 60 value 158.479898
## iter 70 value 119.506663
## iter 80 value 103.948619
## iter 90 value 93.605290
## iter 100 value 80.722475
## final value 80.722475
## stopped after 100 iterations
## # weights: 118
## initial value 297.770933
## iter 10 value 236.008421
## iter 20 value 185.417907
## iter 30 value 182.554226
## iter 40 value 165.198517
## iter 50 value 154.203133
## iter 60 value 152.312072
## iter 70 value 151.195246
## iter 80 value 147.354070
## iter 90 value 115.386634
## iter 100 value 100.647602
## final value 100.647602
## stopped after 100 iterations
## # weights: 134
## initial value 367.094307
## iter 10 value 239.424135
## iter 20 value 199.952757
## iter 30 value 165.891841
```

```
## iter 40 value 161.214230
## iter 50 value 157.805085
## iter 60 value 145.179194
## iter 70 value 138.231829
## iter 80 value 113.982316
## iter 90 value 109.649862
## iter 100 value 108.278985
## final value 108.278985
## stopped after 100 iterations
## # weights: 150
## initial value 374.750151
## iter 10 value 238.692323
## iter 20 value 216.926421
## iter 30 value 181.475630
## iter 40 value 162.390354
## iter 50 value 132.431912
## iter 60 value 111.500690
## iter 70 value 86.681185
## iter 80 value 76.617397
## iter 90 value 71.370523
## iter 100 value 66.254229
## final value 66.254229
## stopped after 100 iterations
## # weights: 166
## initial value 367.291071
## iter 10 value 240.780674
## iter 20 value 239.397719
## iter 30 value 227.193448
## iter 40 value 193.791794
## iter 50 value 158.242885
## iter 60 value 146.734161
## iter 70 value 114.823331
## iter 80 value 103.590953
## iter 90 value 91.704254
## iter 100 value 83.916760
## final value 83.916760
## stopped after 100 iterations
## # weights: 182
## initial value 348.791709
## iter 10 value 237.359869
## iter 20 value 165.587829
## iter 30 value 148.307041
## iter 40 value 139.563731
## iter 50 value 137.864743
## iter 60 value 133.537251
## iter 70 value 128.979305
## iter 80 value 125.619525
## iter 90 value 124.465002
## iter 100 value 121.362070
## final value 121.362070
## stopped after 100 iterations
## # weights: 198
## initial value 369.529505
## iter 10 value 239.130035
```

```
## iter 20 value 188.486773
## iter 30 value 164.112610
## iter 40 value 162.501529
## iter 50 value 154.005154
## iter 60 value 143.416666
## iter 70 value 119.710770
## iter 80 value 100.463546
## iter 90 value 97.702363
## iter 100 value 91.121753
## final value 91.121753
## stopped after 100 iterations
## # weights: 214
## initial value 390.055321
## iter 10 value 239.768934
## iter 20 value 230.324819
## iter 30 value 189.072500
## iter 40 value 176.588277
## iter 50 value 169.961859
## iter 60 value 151.715463
## iter 70 value 139.701316
## iter 80 value 138.205925
## iter 90 value 132.657391
## iter 100 value 113.128211
## final value 113.128211
## stopped after 100 iterations
## # weights: 230
## initial value 606.878373
## iter 10 value 239.971569
## iter 20 value 197.339337
## iter 30 value 169.684101
## iter 40 value 166.868580
## iter 50 value 152.333599
## iter 60 value 137.772079
## iter 70 value 121.208582
## iter 80 value 117.190983
## iter 90 value 108.195366
## iter 100 value 96.797982
## final value 96.797982
## stopped after 100 iterations
## # weights: 246
## initial value 438.923740
## iter 10 value 240.067149
## iter 20 value 236.237151
## iter 30 value 197.235903
## iter 40 value 184.027283
## iter 50 value 183.576883
## iter 60 value 174.842904
## iter 70 value 165.383641
## iter 80 value 154.551833
## iter 90 value 135.292088
## iter 100 value 117.060657
## final value 117.060657
## stopped after 100 iterations
## # weights: 102
```

```
## initial value 297.804551
## iter 10 value 237.910088
## iter 20 value 214.131803
## iter 30 value 178.961230
## iter 40 value 165.958050
## iter 50 value 154.354133
## iter 60 value 141.222947
## iter 70 value 135.156635
## iter 80 value 130.839829
## iter 90 value 130.389853
## iter 100 value 126.029071
## final value 126.029071
## stopped after 100 iterations
## # weights: 118
## initial value 367.171517
## iter 10 value 243.625703
## iter 20 value 234.812801
## iter 30 value 221.784560
## iter 40 value 170.769577
## iter 50 value 158.056267
## iter 60 value 147.822385
## iter 70 value 146.374065
## iter 80 value 139.772764
## iter 90 value 134.392145
## iter 100 value 129.188064
## final value 129.188064
## stopped after 100 iterations
## # weights: 134
## initial value 306.466611
## iter 10 value 240.264776
## iter 20 value 228.954944
## iter 30 value 178.123645
## iter 40 value 138.951592
## iter 50 value 132.072120
## iter 60 value 126.372937
## iter 70 value 122.225881
## iter 80 value 121.717851
## iter 90 value 119.272800
## iter 100 value 118.360191
## final value 118.360191
## stopped after 100 iterations
## # weights: 150
## initial value 524.431219
## iter 10 value 240.545239
## iter 20 value 236.930480
## iter 30 value 197.389396
## iter 40 value 170.671143
## iter 50 value 156.044571
## iter 60 value 147.910190
## iter 70 value 141.735963
## iter 80 value 132.101856
## iter 90 value 125.482581
## iter 100 value 121.693844
## final value 121.693844
```

```
## stopped after 100 iterations
## # weights: 166
## initial value 360.992923
## iter 10 value 223.256835
## iter 20 value 188.187860
## iter 30 value 175.440531
## iter 40 value 172.730809
## iter 50 value 164.880599
## iter 60 value 151.418930
## iter 70 value 148.060237
## iter 80 value 142.129266
## iter 90 value 134.905150
## iter 100 value 131.616998
## final value 131.616998
## stopped after 100 iterations
## # weights: 182
## initial value 467.516908
## iter 10 value 240.296293
## iter 20 value 236.989385
## iter 30 value 180.279136
## iter 40 value 163.778195
## iter 50 value 158.493779
## iter 60 value 151.791597
## iter 70 value 146.647923
## iter 80 value 129.356131
## iter 90 value 127.491867
## iter 100 value 124.807412
## final value 124.807412
## stopped after 100 iterations
## # weights: 198
## initial value 516.692087
## iter 10 value 242.203277
## iter 20 value 194.732166
## iter 30 value 184.642689
## iter 40 value 160.234903
## iter 50 value 154.384654
## iter 60 value 146.421663
## iter 70 value 136.735564
## iter 80 value 130.104392
## iter 90 value 125.810830
## iter 100 value 123.124022
## final value 123.124022
## stopped after 100 iterations
## # weights: 214
## initial value 325.714202
## iter 10 value 241.001707
## iter 20 value 231.978268
## iter 30 value 189.737142
## iter 40 value 173.634011
## iter 50 value 162.468935
## iter 60 value 148.385628
## iter 70 value 143.825726
## iter 80 value 138.766265
## iter 90 value 130.364042
```



```
## iter 100 value 122.989106
## final value 122.989106
## stopped after 100 iterations
## # weights: 230
## initial value 315.740151
## iter 10 value 242.520828
## iter 20 value 239.500459
## iter 30 value 205.997355
## iter 40 value 180.582301
## iter 50 value 176.739283
## iter 60 value 173.502257
## iter 70 value 167.980218
## iter 80 value 143.594531
## iter 90 value 130.216943
## iter 100 value 125.046530
## final value 125.046530
## stopped after 100 iterations
## # weights: 246
## initial value 416.817742
## iter 10 value 258.572661
## iter 20 value 231.113845
## iter 30 value 209.550143
## iter 40 value 174.273679
## iter 50 value 160.981226
## iter 60 value 148.733685
## iter 70 value 133.022893
## iter 80 value 124.869166
## iter 90 value 121.261964
## iter 100 value 117.612726
## final value 117.612726
## stopped after 100 iterations
## # weights: 102
## initial value 356.597786
## iter 10 value 245.014764
## iter 20 value 208.995675
## iter 30 value 198.994464
## iter 40 value 190.735985
## iter 50 value 188.161531
## iter 60 value 185.553116
## iter 70 value 185.074277
## iter 80 value 185.063810
## iter 90 value 185.063288
## final value 185.063271
## converged
## # weights: 118
## initial value 354.750468
## iter 10 value 243.960603
## iter 20 value 240.909303
## iter 30 value 228.992153
## iter 40 value 202.323784
## iter 50 value 195.437487
## iter 60 value 192.273886
## iter 70 value 188.548518
## iter 80 value 185.795399
```

```
## iter 90 value 184.681397
## iter 100 value 184.348452
## final value 184.348452
## stopped after 100 iterations
## # weights: 134
## initial value 490.716010
## iter 10 value 253.621887
## iter 20 value 245.702353
## iter 30 value 232.755823
## iter 40 value 215.914558
## iter 50 value 200.201336
## iter 60 value 194.278499
## iter 70 value 190.512084
## iter 80 value 189.440478
## iter 90 value 188.298628
## iter 100 value 187.727968
## final value 187.727968
## stopped after 100 iterations
## # weights: 150
## initial value 474.564872
## iter 10 value 318.156253
## iter 20 value 308.899754
## iter 30 value 214.718147
## iter 40 value 206.162602
## iter 50 value 197.301140
## iter 60 value 192.713091
## iter 70 value 188.773112
## iter 80 value 185.331892
## iter 90 value 184.298108
## iter 100 value 183.687452
## final value 183.687452
## stopped after 100 iterations
## # weights: 166
## initial value 501.507275
## iter 10 value 253.047341
## iter 20 value 236.302574
## iter 30 value 204.178810
## iter 40 value 191.300817
## iter 50 value 186.850877
## iter 60 value 186.153399
## iter 70 value 185.538588
## iter 80 value 184.473359
## iter 90 value 183.945097
## iter 100 value 183.767641
## final value 183.767641
## stopped after 100 iterations
## # weights: 182
## initial value 489.305978
## iter 10 value 250.670376
## iter 20 value 220.091639
## iter 30 value 209.763164
## iter 40 value 205.831086
## iter 50 value 199.579058
## iter 60 value 195.347155
```

```
## iter 70 value 193.380742
## iter 80 value 188.258048
## iter 90 value 184.674375
## iter 100 value 182.766775
## final value 182.766775
## stopped after 100 iterations
## # weights: 198
## initial value 301.618900
## iter 10 value 258.646117
## iter 20 value 252.015495
## iter 30 value 235.279529
## iter 40 value 215.652514
## iter 50 value 195.131555
## iter 60 value 187.451017
## iter 70 value 185.658105
## iter 80 value 183.693518
## iter 90 value 182.574710
## iter 100 value 181.981593
## final value 181.981593
## stopped after 100 iterations
## # weights: 214
## initial value 400.663035
## iter 10 value 246.135836
## iter 20 value 230.565593
## iter 30 value 213.375871
## iter 40 value 201.909332
## iter 50 value 193.553686
## iter 60 value 188.730671
## iter 70 value 186.548411
## iter 80 value 184.190216
## iter 90 value 183.620493
## iter 100 value 183.012912
## final value 183.012912
## stopped after 100 iterations
## # weights: 230
## initial value 445.539215
## iter 10 value 283.987255
## iter 20 value 265.693103
## iter 30 value 219.545725
## iter 40 value 212.421900
## iter 50 value 206.720943
## iter 60 value 204.684738
## iter 70 value 198.027279
## iter 80 value 193.456952
## iter 90 value 189.294249
## iter 100 value 186.702425
## final value 186.702425
## stopped after 100 iterations
## # weights: 246
## initial value 411.730378
## iter 10 value 268.609028
## iter 20 value 253.352104
## iter 30 value 237.186652
## iter 40 value 221.055750
```

```
## iter 50 value 202.578871
## iter 60 value 194.201412
## iter 70 value 189.158500
## iter 80 value 185.276687
## iter 90 value 184.010645
## iter 100 value 183.204880
## final value 183.204880
## stopped after 100 iterations
## # weights: 102
## initial value 296.053738
## final value 256.049376
## converged
## # weights: 118
## initial value 330.723956
## iter 10 value 256.127118
## final value 256.049376
## converged
## # weights: 134
## initial value 368.688267
## iter 10 value 256.845918
## final value 256.049377
## converged
## # weights: 150
## initial value 348.474213
## iter 10 value 256.056951
## final value 256.049378
## converged
## # weights: 166
## initial value 305.167860
## iter 10 value 253.583483
## iter 20 value 183.639573
## iter 30 value 158.866063
## iter 40 value 147.817377
## iter 50 value 145.579192
## iter 60 value 142.079884
## iter 70 value 138.511695
## iter 80 value 135.819647
## iter 90 value 134.931744
## iter 100 value 134.452433
## final value 134.452433
## stopped after 100 iterations
## # weights: 182
## initial value 356.772709
## iter 10 value 256.052837
## final value 256.049375
## converged
## # weights: 198
## initial value 472.242494
## iter 10 value 256.053106
## final value 256.049377
## converged
## # weights: 214
## initial value 373.482770
## iter 10 value 256.049395
```

```
## final value 256.049368
## converged
## # weights: 230
## initial value 405.527174
## iter 10 value 256.376416
## iter 20 value 255.712294
## iter 30 value 250.937543
## iter 40 value 208.073250
## iter 50 value 198.121492
## iter 60 value 181.770622
## iter 70 value 168.152359
## iter 80 value 134.614867
## iter 90 value 119.076097
## iter 100 value 114.397087
## final value 114.397087
## stopped after 100 iterations
## # weights: 246
## initial value 428.800381
## iter 10 value 255.532922
## iter 20 value 243.544976
## iter 30 value 218.511655
## iter 40 value 188.501823
## iter 50 value 183.216130
## iter 60 value 182.139371
## iter 70 value 181.284664
## iter 80 value 180.626904
## iter 90 value 180.494412
## iter 100 value 180.469105
## final value 180.469105
## stopped after 100 iterations
## # weights: 102
## initial value 294.005372
## iter 10 value 256.195947
## iter 20 value 255.467877
## iter 30 value 221.413739
## iter 40 value 177.203818
## iter 50 value 169.125185
## iter 60 value 166.393142
## iter 70 value 149.262962
## iter 80 value 115.024714
## iter 90 value 94.285353
## iter 100 value 91.293972
## final value 91.293972
## stopped after 100 iterations
## # weights: 118
## initial value 367.302496
## iter 10 value 256.444779
## iter 20 value 255.514231
## iter 30 value 249.885074
## iter 40 value 184.948930
## iter 50 value 161.477696
## iter 60 value 158.466449
## iter 70 value 158.203070
## iter 80 value 158.126007
```

```
## iter 90 value 157.500491
## iter 100 value 142.951354
## final value 142.951354
## stopped after 100 iterations
## # weights: 134
## initial value 415.257602
## iter 10 value 255.995455
## iter 20 value 248.336204
## iter 30 value 212.006053
## iter 40 value 164.132253
## iter 50 value 140.249379
## iter 60 value 136.366577
## iter 70 value 131.950662
## iter 80 value 120.605794
## iter 90 value 110.596109
## iter 100 value 107.041844
## final value 107.041844
## stopped after 100 iterations
## # weights: 150
## initial value 328.132823
## iter 10 value 257.943249
## iter 20 value 251.512627
## iter 30 value 211.461903
## iter 40 value 166.909693
## iter 50 value 147.215146
## iter 60 value 143.899241
## iter 70 value 136.565415
## iter 80 value 125.349252
## iter 90 value 115.870210
## iter 100 value 108.090343
## final value 108.090343
## stopped after 100 iterations
## # weights: 166
## initial value 268.106710
## iter 10 value 255.832139
## iter 20 value 250.965339
## iter 30 value 245.321415
## iter 40 value 229.954296
## iter 50 value 192.405699
## iter 60 value 169.924733
## iter 70 value 166.821632
## iter 80 value 165.991155
## iter 90 value 159.809635
## iter 100 value 150.553175
## final value 150.553175
## stopped after 100 iterations
## # weights: 182
## initial value 522.896356
## iter 10 value 256.473788
## iter 20 value 256.195411
## iter 30 value 254.154560
## iter 40 value 237.585366
## iter 50 value 204.056555
## iter 60 value 188.509385
```

```
## iter 70 value 169.794921
## iter 80 value 163.727002
## iter 90 value 158.522788
## iter 100 value 145.134747
## final value 145.134747
## stopped after 100 iterations
## # weights: 198
## initial value 410.302013
## iter 10 value 257.073260
## iter 20 value 256.044270
## iter 30 value 253.588057
## iter 40 value 191.847738
## iter 50 value 158.329667
## iter 60 value 140.297808
## iter 70 value 122.190054
## iter 80 value 98.647404
## iter 90 value 93.598720
## iter 100 value 91.439040
## final value 91.439040
## stopped after 100 iterations
## # weights: 214
## initial value 396.388030
## iter 10 value 252.561731
## iter 20 value 222.921197
## iter 30 value 184.491216
## iter 40 value 170.341511
## iter 50 value 158.612659
## iter 60 value 142.693397
## iter 70 value 138.869741
## iter 80 value 137.276534
## iter 90 value 136.749517
## iter 100 value 133.860952
## final value 133.860952
## stopped after 100 iterations
## # weights: 230
## initial value 372.766818
## iter 10 value 256.499506
## iter 20 value 249.209979
## iter 30 value 193.613945
## iter 40 value 176.843307
## iter 50 value 170.824220
## iter 60 value 147.640185
## iter 70 value 139.086245
## iter 80 value 138.197488
## iter 90 value 135.455904
## iter 100 value 123.131471
## final value 123.131471
## stopped after 100 iterations
## # weights: 246
## initial value 367.001159
## iter 10 value 259.999671
## iter 20 value 244.099206
## iter 30 value 232.929902
## iter 40 value 172.157522
```

```
## iter 50 value 159.606945
## iter 60 value 151.791812
## iter 70 value 134.367687
## iter 80 value 121.612984
## iter 90 value 113.290205
## iter 100 value 109.290526
## final value 109.290526
## stopped after 100 iterations
## # weights: 102
## initial value 313.865657
## iter 10 value 257.710317
## iter 20 value 235.269745
## iter 30 value 205.951629
## iter 40 value 180.016005
## iter 50 value 156.424877
## iter 60 value 140.280484
## iter 70 value 136.459222
## iter 80 value 135.254584
## iter 90 value 129.438129
## iter 100 value 124.096325
## final value 124.096325
## stopped after 100 iterations
## # weights: 118
## initial value 291.074065
## iter 10 value 257.147112
## iter 20 value 255.930410
## iter 30 value 229.364209
## iter 40 value 204.520600
## iter 50 value 186.077471
## iter 60 value 166.119006
## iter 70 value 154.918378
## iter 80 value 135.387616
## iter 90 value 125.387610
## iter 100 value 122.949510
## final value 122.949510
## stopped after 100 iterations
## # weights: 134
## initial value 368.657621
## iter 10 value 255.964571
## iter 20 value 217.756868
## iter 30 value 189.289419
## iter 40 value 178.969684
## iter 50 value 172.749494
## iter 60 value 157.053725
## iter 70 value 131.457107
## iter 80 value 116.361122
## iter 90 value 111.601862
## iter 100 value 109.629156
## final value 109.629156
## stopped after 100 iterations
## # weights: 150
## initial value 314.733610
## iter 10 value 258.117381
## iter 20 value 240.933076
```



```
## iter 30 value 219.094679
## iter 40 value 173.412152
## iter 50 value 156.550737
## iter 60 value 151.622405
## iter 70 value 143.609182
## iter 80 value 126.904360
## iter 90 value 112.403299
## iter 100 value 105.551972
## final value 105.551972
## stopped after 100 iterations
## # weights: 166
## initial value 346.532572
## iter 10 value 257.206244
## iter 20 value 252.059038
## iter 30 value 217.802142
## iter 40 value 160.514846
## iter 50 value 137.054609
## iter 60 value 127.545611
## iter 70 value 123.784878
## iter 80 value 119.970998
## iter 90 value 116.957897
## iter 100 value 112.548528
## final value 112.548528
## stopped after 100 iterations
## # weights: 182
## initial value 339.210548
## iter 10 value 258.450770
## iter 20 value 215.215090
## iter 30 value 204.667947
## iter 40 value 176.413828
## iter 50 value 149.767826
## iter 60 value 131.133508
## iter 70 value 121.966986
## iter 80 value 120.606134
## iter 90 value 120.106496
## iter 100 value 117.629068
## final value 117.629068
## stopped after 100 iterations
## # weights: 198
## initial value 541.354463
## iter 10 value 262.445620
## iter 20 value 245.279259
## iter 30 value 214.468303
## iter 40 value 194.558132
## iter 50 value 178.518477
## iter 60 value 161.501262
## iter 70 value 153.550630
## iter 80 value 138.529709
## iter 90 value 125.598973
## iter 100 value 113.966607
## final value 113.966607
## stopped after 100 iterations
## # weights: 214
## initial value 349.907830
```

```
## iter 10 value 260.600538
## iter 20 value 254.863777
## iter 30 value 240.949664
## iter 40 value 209.213807
## iter 50 value 193.736881
## iter 60 value 175.484469
## iter 70 value 155.958101
## iter 80 value 142.353782
## iter 90 value 131.431241
## iter 100 value 120.792046
## final value 120.792046
## stopped after 100 iterations
## # weights: 230
## initial value 530.670247
## iter 10 value 261.920366
## iter 20 value 242.540776
## iter 30 value 222.519405
## iter 40 value 175.605802
## iter 50 value 157.250925
## iter 60 value 141.973333
## iter 70 value 130.095100
## iter 80 value 116.757498
## iter 90 value 109.879254
## iter 100 value 109.105688
## final value 109.105688
## stopped after 100 iterations
## # weights: 246
## initial value 380.928345
## iter 10 value 285.031656
## iter 20 value 257.578075
## iter 30 value 256.982767
## iter 40 value 246.016662
## iter 50 value 216.453634
## iter 60 value 189.468099
## iter 70 value 168.813818
## iter 80 value 153.764419
## iter 90 value 136.157906
## iter 100 value 118.155887
## final value 118.155887
## stopped after 100 iterations
## # weights: 102
## initial value 358.502612
## iter 10 value 260.616624
## iter 20 value 257.523594
## iter 30 value 230.671088
## iter 40 value 216.235984
## iter 50 value 209.688697
## iter 60 value 207.228660
## iter 70 value 205.934777
## iter 80 value 203.705150
## iter 90 value 200.020614
## iter 100 value 195.713168
## final value 195.713168
## stopped after 100 iterations
```

```
## # weights: 118
## initial value 441.568076
## iter 10 value 261.291160
## iter 20 value 255.513655
## iter 30 value 232.096711
## iter 40 value 214.898316
## iter 50 value 210.060358
## iter 60 value 205.910860
## iter 70 value 200.896237
## iter 80 value 196.415190
## iter 90 value 194.036632
## iter 100 value 192.685573
## final value 192.685573
## stopped after 100 iterations
## # weights: 134
## initial value 372.475211
## iter 10 value 276.852216
## iter 20 value 260.918922
## iter 30 value 226.533021
## iter 40 value 218.179440
## iter 50 value 208.118497
## iter 60 value 203.125065
## iter 70 value 198.471579
## iter 80 value 196.210864
## iter 90 value 195.632368
## iter 100 value 195.149637
## final value 195.149637
## stopped after 100 iterations
## # weights: 150
## initial value 364.474385
## iter 10 value 265.830177
## iter 20 value 232.859369
## iter 30 value 213.072224
## iter 40 value 206.973052
## iter 50 value 202.377936
## iter 60 value 196.842243
## iter 70 value 194.429094
## iter 80 value 193.494746
## iter 90 value 192.962924
## iter 100 value 192.785998
## final value 192.785998
## stopped after 100 iterations
## # weights: 166
## initial value 421.571250
## iter 10 value 279.775990
## iter 20 value 260.037284
## iter 30 value 246.452099
## iter 40 value 238.923512
## iter 50 value 226.439188
## iter 60 value 207.888012
## iter 70 value 200.553118
## iter 80 value 197.012930
## iter 90 value 195.166927
## iter 100 value 193.842454
```

```
## final value 193.842454
## stopped after 100 iterations
## # weights: 182
## initial value 413.897123
## iter 10 value 272.796229
## iter 20 value 248.917788
## iter 30 value 233.082791
## iter 40 value 218.737103
## iter 50 value 208.368976
## iter 60 value 201.607186
## iter 70 value 197.447876
## iter 80 value 194.885466
## iter 90 value 193.860953
## iter 100 value 192.987684
## final value 192.987684
## stopped after 100 iterations
## # weights: 198
## initial value 418.356300
## iter 10 value 259.909388
## iter 20 value 257.186553
## iter 30 value 244.257533
## iter 40 value 221.824395
## iter 50 value 206.921949
## iter 60 value 198.076073
## iter 70 value 195.542532
## iter 80 value 195.240234
## iter 90 value 193.561939
## iter 100 value 192.516191
## final value 192.516191
## stopped after 100 iterations
## # weights: 214
## initial value 338.438297
## iter 10 value 267.027965
## iter 20 value 247.764782
## iter 30 value 237.675736
## iter 40 value 218.657833
## iter 50 value 214.022923
## iter 60 value 206.122036
## iter 70 value 200.842706
## iter 80 value 196.281137
## iter 90 value 192.172636
## iter 100 value 191.539575
## final value 191.539575
## stopped after 100 iterations
## # weights: 230
## initial value 566.261120
## iter 10 value 282.146902
## iter 20 value 246.073305
## iter 30 value 226.949724
## iter 40 value 216.198167
## iter 50 value 209.495766
## iter 60 value 202.150276
## iter 70 value 200.074038
## iter 80 value 197.172399
```

```
## iter 90 value 194.973930
## iter 100 value 193.579519
## final value 193.579519
## stopped after 100 iterations
## # weights: 246
## initial value 359.999890
## iter 10 value 265.093758
## iter 20 value 255.698216
## iter 30 value 243.824193
## iter 40 value 222.049124
## iter 50 value 208.397234
## iter 60 value 198.949850
## iter 70 value 195.457992
## iter 80 value 192.833752
## iter 90 value 191.497255
## iter 100 value 190.683135
## final value 190.683135
## stopped after 100 iterations
## # weights: 166
## initial value 369.177427
## iter 10 value 253.356881
## iter 20 value 251.191784
## iter 30 value 230.128517
## iter 40 value 177.290105
## iter 50 value 158.370747
## iter 60 value 154.861905
## iter 70 value 149.565735
## iter 80 value 143.928848
## iter 90 value 134.630970
## iter 100 value 130.148666
## final value 130.148666
## stopped after 100 iterations
```

```
pred3 <- predict(nfit, data_test, type="raw")
confusionMatrix(table(factor(data[test,]$V11,u), factor(pred3, u)))
```

```
## Confusion Matrix and Statistics
##
##
##      2  1  3  5  6  7
##  2  9  4  0  0  2  1
##  1  3  8  0  0  0  0
##  3  0  4  0  0  0  0
##  5  3  0  0  2  0  0
##  6  0  0  0  0  1  1
##  7  0  0  0  0  1  4
##
## Overall Statistics
##
##              Accuracy : 0.5581
##              95% CI : (0.3988, 0.7092)
##      No Information Rate : 0.3721
##      P-Value [Acc > NIR] : 0.009973
##
##              Kappa : 0.4101
##  McNemar's Test P-Value : NA
##
## Statistics by Class:
##
##              Class: 2 Class: 1 Class: 3 Class: 5 Class: 6 Class: 7
## Sensitivity      0.6000  0.5000      NA  1.00000  0.25000  0.66667
## Specificity      0.7500  0.8889  0.90698  0.92683  0.97436  0.97297
## Pos Pred Value   0.5625  0.7273      NA  0.40000  0.50000  0.80000
## Neg Pred Value   0.7778  0.7500      NA  1.00000  0.92683  0.94737
## Prevalence       0.3488  0.3721  0.00000  0.04651  0.09302  0.13953
## Detection Rate   0.2093  0.1860  0.00000  0.04651  0.02326  0.09302
## Detection Prevalence 0.3721  0.2558  0.09302  0.11628  0.04651  0.11628
## Balanced Accuracy 0.6750  0.6944      NA  0.96341  0.61218  0.81982
```