

Example hpgltools usage with fission

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Example hpgltool usage with a real data set (fission)

This document aims to provide further examples in how to use the hpgltools.

Setting up

Here are the commands I invoke to get ready to play with new data, including everything required to install hpgltools, the software it uses, and the fission data.

```
## These first 4 lines are not needed once hpgltools is installed.
source("http://bioconductor.org/biocLite.R")
biocLite("devtools")
library(devtools)
install_github("elsayed-lab/hpgltools")
library(hpgltools)
autoloads_all()
```

Import fission

```
require.auto("fission")
data(fission)
```

Data import

All the work I do in Dr. El-Sayed's lab makes some pretty hard assumptions about how data is stored. As a result, to use the fission data set I will do a little bit of shenanigans to match it to the expected format. Now that I have played a little with fission, I think its format is quite nice and am likely to have my experiment class instead be a SummarizedExperiment.

```
## Extract the meta data from the fission dataset
meta = as.data.frame(fission@colData)
## Make conditions and batches
meta$condition = paste(meta$strain, meta$minute, sep=".")
meta$batch = meta$replicate
meta$sample.id = rownames(meta)
## Write it out in the format expected by my toys
write.csv(meta, file="fission.csv")
## Grab the count data
fission_data = fission@assays$data$counts
## This will make an experiment superclass called 'expt' and it contains
## an ExpressionSet along with any arbitrary additional information one might want to include.
## Along the way it writes a Rdata file which is by default called 'expt.Rdata'
fission_expt = create_expt("fission.csv", count_dataframe=fission_data)
```

```
## [1] "This function needs the conditions and batches to be an explicit column in the sample sheet."
## [1] "Please note that thus function assumes a specific set of columns in the sample sheet:"
## [1] "The most important ones are: Sample.ID, Stage, Type."
## [1] "Other columns it will attempt to create by itself, but if"
## [1] "batch and condition are provided, that is a nice help."
```

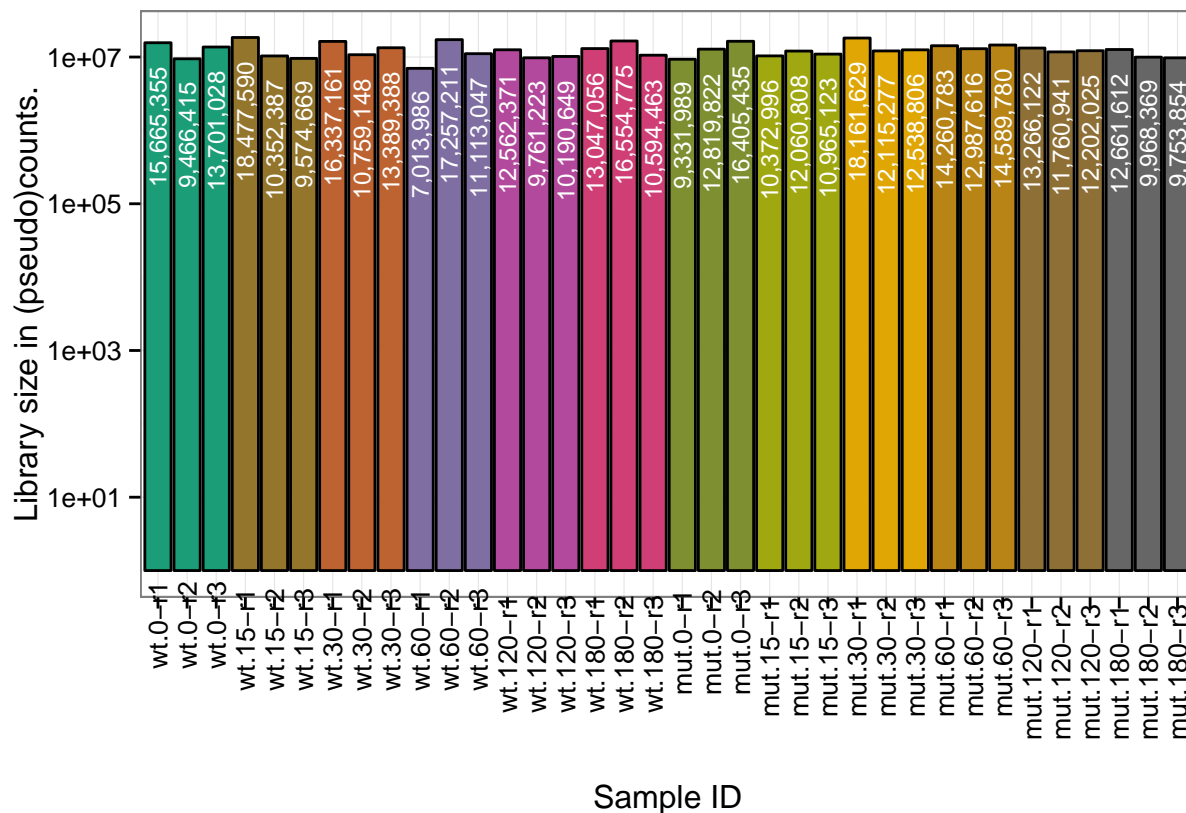
Normalizing and exploring data

There are lots of toys we have learned to use to play with with raw data and explore stuff like batch effects or non-canonical distributions or skewed counts. `hpgltools` provides some functionality to make this process easier. The graphs shown below and many more are generated with the wrapper `'graph_metrics()'` but that takes away the chance to explain the graphs as I generate them.

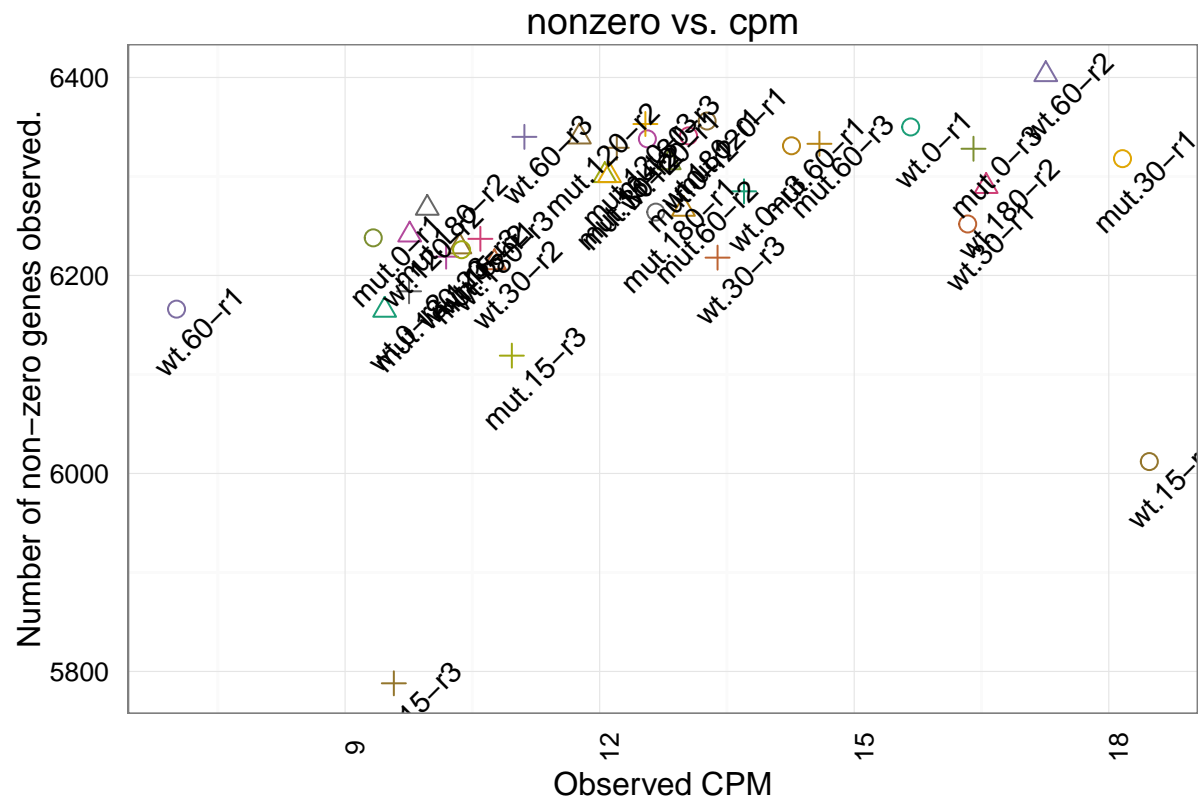
```
full_design = fission_expt$definitions
## First make a bar plot of the library sizes in the experiment.
## Notice that the colors were auto-chosen by create_expt() and they should
## be maintained throughout this process
fis_libsize = hpgl_libsize(expt=fission_expt)
```

```
## Adding log10
```

```
fis_libsize
```



```
## Here we see that the wild type replicate 3 sample for 15 minutes has fewer non-zero genes than all i
fis_nonzero = hpgl_nonzero(expt=fission_expt, labels="boring", title="nonzero vs. cpm")
fis_nonzero
```



An initial pca plot

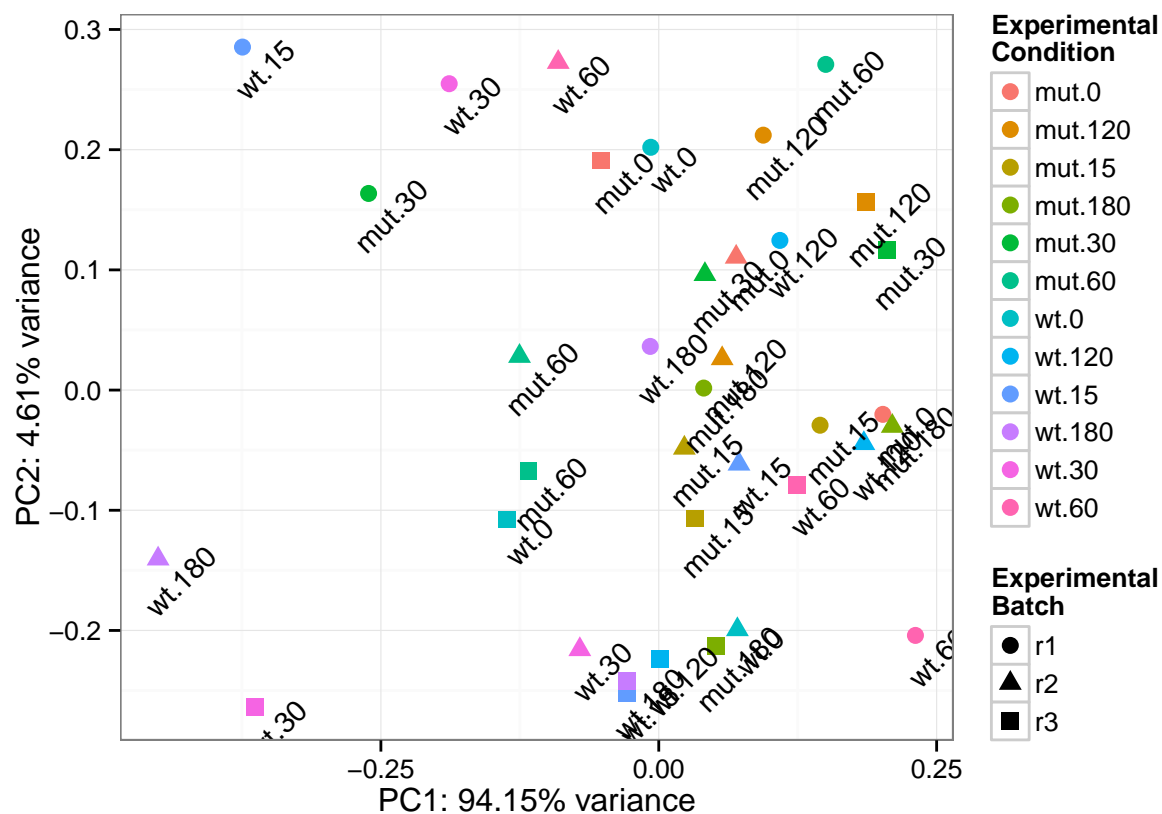
In most cases, raw data does not cluster very well, let's see if that is also true for the fission experiment. Assuming it doesn't, let's normalize the data using the defaults (cpm, quantile, log2) and try again.

```
## Unsurprisingly, the raw data doesn't cluster well at all...
fis_rawpca = hpgl_pca(expt=fission_expt, labels=fission_expt$condition)
```

```
## Scale for 'shape' is already present. Adding another scale for 'shape', which will replace the exist.
```

```
fis_rawpca
```

```
## $plot
```



```
##
## $table
##
```

	SampleID	condition	batch	batch_int	PC1	PC2
##	GSM1368273	wt.0-r1	wt.0	r1	1 -0.007178318	0.201995449
##	GSM1368274	wt.0-r2	wt.0	r2	2 0.070735209	-0.199237946
##	GSM1368275	wt.0-r3	wt.0	r3	3 -0.136645507	-0.107750705
##	GSM1368276	wt.15-r1	wt.15	r1	1 -0.374502211	0.285371499
##	GSM1368277	wt.15-r2	wt.15	r2	2 0.072181094	-0.061485806
##	GSM1368278	wt.15-r3	wt.15	r3	3 -0.028458656	-0.251907593
##	GSM1368279	wt.30-r1	wt.30	r1	1 -0.188542251	0.254884121
##	GSM1368280	wt.30-r2	wt.30	r2	2 -0.071016520	-0.215832142
##	GSM1368281	wt.30-r3	wt.30	r3	3 -0.363641837	-0.263890058
##	GSM1368282	wt.60-r1	wt.60	r1	1 0.230916954	-0.204118295
##	GSM1368283	wt.60-r2	wt.60	r2	2 -0.090460759	0.272733156
##	GSM1368284	wt.60-r3	wt.60	r3	3 0.124813473	-0.078743284
##	GSM1368285	wt.120-r1	wt.120	r1	1 0.108968258	0.124504851
##	GSM1368286	wt.120-r2	wt.120	r2	2 0.184520582	-0.044387846
##	GSM1368287	wt.120-r3	wt.120	r3	3 0.001512549	-0.223718719
##	GSM1368288	wt.180-r1	wt.180	r1	1 -0.007662272	0.036322067
##	GSM1368289	wt.180-r2	wt.180	r2	2 -0.450412255	-0.140420366
##	GSM1368290	wt.180-r3	wt.180	r3	3 -0.028577810	-0.242300360
##	GSM1368291	mut.0-r1	mut.0	r1	1 0.201616006	-0.020221570
##	GSM1368292	mut.0-r2	mut.0	r2	2 0.069647319	0.110678369
##	GSM1368293	mut.0-r3	mut.0	r3	3 -0.052329747	0.190884163
##	GSM1368294	mut.15-r1	mut.15	r1	1 0.145105662	-0.029245559
##	GSM1368295	mut.15-r2	mut.15	r2	2 0.023031791	-0.048204147
##	GSM1368296	mut.15-r3	mut.15	r3	3 0.032711623	-0.106685660
##	GSM1368297	mut.30-r1	mut.30	r1	1 -0.261061660	0.163575077

```

## GSM1368298 mut.30-r2 mut.30 r2 2 0.041535667 0.096249804
## GSM1368299 mut.30-r3 mut.30 r3 3 0.205380854 0.116145287
## GSM1368300 mut.60-r1 mut.60 r1 1 0.150253285 0.270955306
## GSM1368301 mut.60-r2 mut.60 r2 2 -0.125269685 0.028154634
## GSM1368302 mut.60-r3 mut.60 r3 3 -0.117305851 -0.067463992
## GSM1368303 mut.120-r1 mut.120 r1 1 0.094000969 0.212085426
## GSM1368304 mut.120-r2 mut.120 r2 2 0.057032686 0.026224395
## GSM1368305 mut.120-r3 mut.120 r3 3 0.186798636 0.156544584
## GSM1368306 mut.180-r1 mut.180 r1 1 0.040435597 0.001669285
## GSM1368307 mut.180-r2 mut.180 r2 2 0.210088691 -0.030042020
## GSM1368308 mut.180-r3 mut.180 r3 3 0.051778433 -0.213321407
##
## $res
## propVar cumPropVar cond.R2 batch.R2
## 1 94.15 94.15 40.00 0.27
## 2 4.61 98.76 24.18 24.33
## 3 0.79 99.55 38.31 24.01
## 4 0.12 99.67 75.27 0.41
## 5 0.11 99.78 46.27 20.02
## 6 0.08 99.86 55.25 7.19
## 7 0.04 99.90 73.51 2.88
## 8 0.02 99.92 54.04 6.84
## 9 0.02 99.94 41.01 10.77
## 10 0.01 99.95 33.46 16.52
## 11 0.01 99.96 47.75 0.40
## 12 0.01 99.97 23.32 7.36
## 13 0.01 99.98 21.12 0.35
## 14 0.00 99.98 30.52 5.79
## 15 0.00 99.98 30.28 8.13
## 16 0.00 99.98 35.29 4.47
## 17 0.00 99.98 32.24 0.12
## 18 0.00 99.98 26.09 3.14
## 19 0.00 99.98 37.04 0.57
## 20 0.00 99.98 22.45 1.22
## 21 0.00 99.98 29.46 4.34
## 22 0.00 99.98 8.32 10.27
## 23 0.00 99.98 18.54 3.92
## 24 0.00 99.98 9.32 10.02
## 25 0.00 99.98 29.46 3.38
## 26 0.00 99.98 31.59 7.83
## 27 0.00 99.98 28.83 4.02
## 28 0.00 99.98 17.86 5.78
## 29 0.00 99.98 26.77 0.07
## 30 0.00 99.98 16.84 2.08
## 31 0.00 99.98 11.79 0.76
## 32 0.00 99.98 5.24 1.38
## 33 0.00 99.98 40.93 0.49
## 34 0.00 99.98 19.86 0.46
## 35 0.00 99.98 17.79 0.41
##
## $variance
## [1] 94.15 4.61 0.79 0.12 0.11 0.08 0.04 0.02 0.02 0.01 0.01
## [12] 0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
## [23] 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

```

```
## [34] 0.00 0.00
```

```
## So, normalize the data
norm_expt = normalize_expt(fission_expt)
```

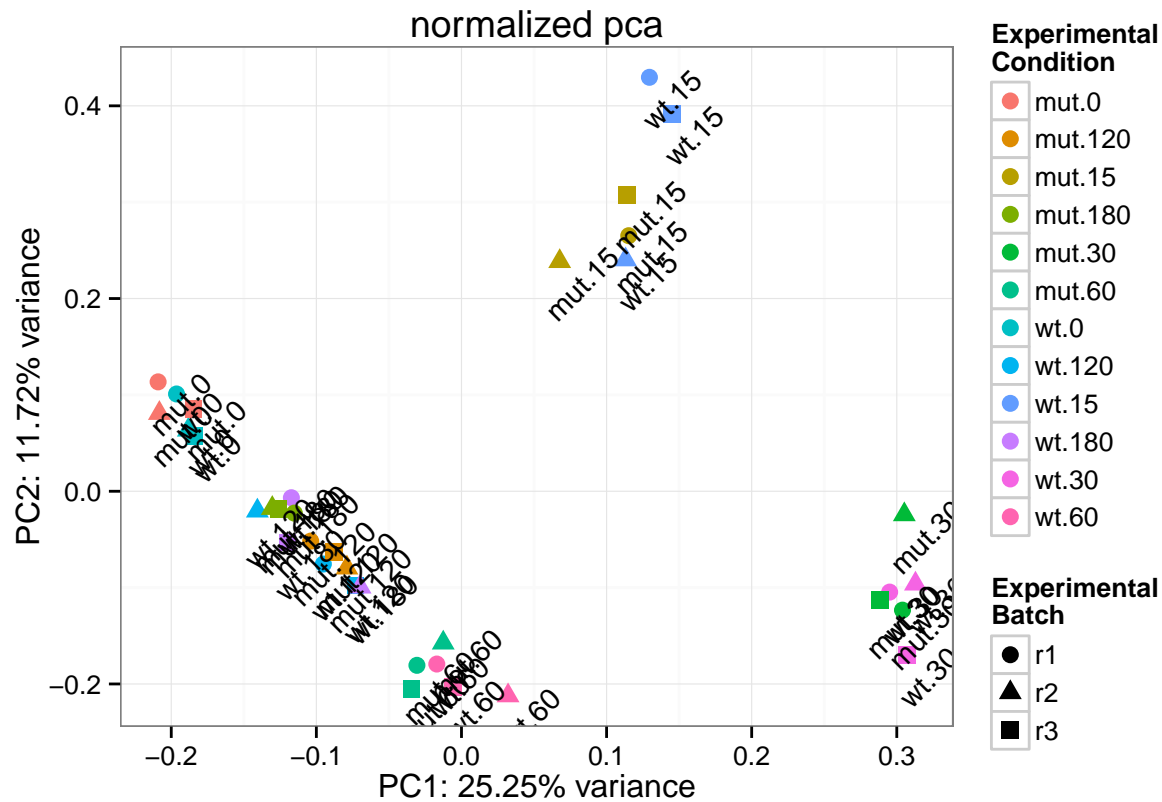
```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(quant(cpm))'d data."
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

```
## And try the pca again
fis_normpca = hpgl_pca(expt=norm_expt, labels=norm_expt$condition, title="normalized pca")
```

```
## Scale for 'shape' is already present. Adding another scale for 'shape', which will replace the exist.
```

```
fis_normpca
```

```
## $plot
```



```
##
## $table
##      SampleID condition batch batch_int      PC1      PC2
## GSM1368273   wt.0-r1    wt.0    r1         1 -0.196366269  0.100955960
## GSM1368274   wt.0-r2    wt.0    r2         2 -0.188242099  0.063590336
## GSM1368275   wt.0-r3    wt.0    r3         3 -0.183724158  0.057538919
## GSM1368276   wt.15-r1   wt.15    r1         1  0.129528471  0.429593583
## GSM1368277   wt.15-r2   wt.15    r2         2  0.113079769  0.240302549
```

```

## GSM1368278 wt.15-r3 wt.15 r3 3 0.144778900 0.391696928
## GSM1368279 wt.30-r1 wt.30 r1 1 0.295075387 -0.104640839
## GSM1368280 wt.30-r2 wt.30 r2 2 0.312851469 -0.096143005
## GSM1368281 wt.30-r3 wt.30 r3 3 0.306717495 -0.169865690
## GSM1368282 wt.60-r1 wt.60 r1 1 -0.017014065 -0.179316405
## GSM1368283 wt.60-r2 wt.60 r2 2 0.032100288 -0.212147300
## GSM1368284 wt.60-r3 wt.60 r3 3 -0.005833011 -0.203454199
## GSM1368285 wt.120-r1 wt.120 r1 1 -0.095188485 -0.075526821
## GSM1368286 wt.120-r2 wt.120 r2 2 -0.140659921 -0.020371803
## GSM1368287 wt.120-r3 wt.120 r3 3 -0.072738428 -0.098155732
## GSM1368288 wt.180-r1 wt.180 r1 1 -0.117229963 -0.006722934
## GSM1368289 wt.180-r2 wt.180 r2 2 -0.069866456 -0.099274061
## GSM1368290 wt.180-r3 wt.180 r3 3 -0.119732592 -0.053179403
## GSM1368291 mut.0-r1 mut.0 r1 1 -0.209054627 0.113524790
## GSM1368292 mut.0-r2 mut.0 r2 2 -0.208187935 0.080920939
## GSM1368293 mut.0-r3 mut.0 r3 3 -0.184882102 0.085734316
## GSM1368294 mut.15-r1 mut.15 r1 1 0.115266869 0.265212188
## GSM1368295 mut.15-r2 mut.15 r2 2 0.067693807 0.238524229
## GSM1368296 mut.15-r3 mut.15 r3 3 0.114288884 0.307670928
## GSM1368297 mut.30-r1 mut.30 r1 1 0.303919415 -0.123390599
## GSM1368298 mut.30-r2 mut.30 r2 2 0.305176339 -0.024225230
## GSM1368299 mut.30-r3 mut.30 r3 3 0.288721400 -0.112564107
## GSM1368300 mut.60-r1 mut.60 r1 1 -0.030695381 -0.180634554
## GSM1368301 mut.60-r2 mut.60 r2 2 -0.012567069 -0.157371916
## GSM1368302 mut.60-r3 mut.60 r3 3 -0.034678927 -0.204749332
## GSM1368303 mut.120-r1 mut.120 r1 1 -0.103893811 -0.051699324
## GSM1368304 mut.120-r2 mut.120 r2 2 -0.078942649 -0.079519237
## GSM1368305 mut.120-r3 mut.120 r3 3 -0.088186226 -0.063183239
## GSM1368306 mut.180-r1 mut.180 r1 1 -0.115199133 -0.022675392
## GSM1368307 mut.180-r2 mut.180 r2 2 -0.130391051 -0.017650103
## GSM1368308 mut.180-r3 mut.180 r3 3 -0.125924135 -0.018804438
##
## $res
## propVar cumPropVar cond.R2 batch.R2
## 1 25.25 25.25 99.12 0.03
## 2 11.72 36.97 95.70 0.34
## 3 6.78 43.75 83.95 11.18
## 4 5.64 49.39 16.21 27.53
## 5 4.69 54.08 82.55 6.47
## 6 4.01 58.09 54.98 0.63
## 7 3.63 61.72 22.40 19.21
## 8 2.87 64.59 44.47 2.93
## 9 2.49 67.08 21.78 6.21
## 10 2.12 69.20 27.49 1.57
## 11 2.03 71.23 25.28 16.23
## 12 1.93 73.16 25.86 17.07
## 13 1.83 74.99 12.02 3.92
## 14 1.74 76.73 28.99 21.82
## 15 1.58 78.31 19.70 0.06
## 16 1.56 79.87 23.99 0.44
## 17 1.42 81.29 32.17 5.15
## 18 1.39 82.68 48.82 5.42
## 19 1.34 84.02 16.90 2.27
## 20 1.30 85.32 15.39 4.36

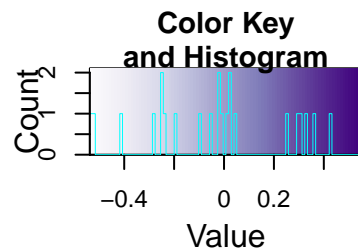
```

```
## 21    1.24    86.56    38.57    1.22
## 22    1.22    87.78    25.22    0.02
## 23    1.16    88.94    11.55    8.91
## 24    1.14    90.08    43.13    2.33
## 25    1.08    91.16    13.49    5.15
## 26    1.05    92.21     8.13    2.12
## 27    0.99    93.20    12.69   19.71
## 28    0.98    94.18    21.79    0.95
## 29    0.96    95.14    27.06    0.25
## 30    0.93    96.07    49.43    0.08
## 31    0.86    96.93     9.16    0.81
## 32    0.80    97.73    20.87    0.90
## 33    0.77    98.50     6.51    1.83
## 34    0.76    99.26     7.63    1.94
## 35    0.73    99.99     7.01    0.92
##
## $variance
## [1] 25.25 11.72  6.78  5.64  4.69  4.01  3.63  2.87  2.49  2.12  2.03
## [12]  1.93  1.83  1.74  1.58  1.56  1.42  1.39  1.34  1.30  1.24  1.22
## [23]  1.16  1.14  1.08  1.05  0.99  0.98  0.96  0.93  0.86  0.80  0.77
## [34]  0.76  0.73
```

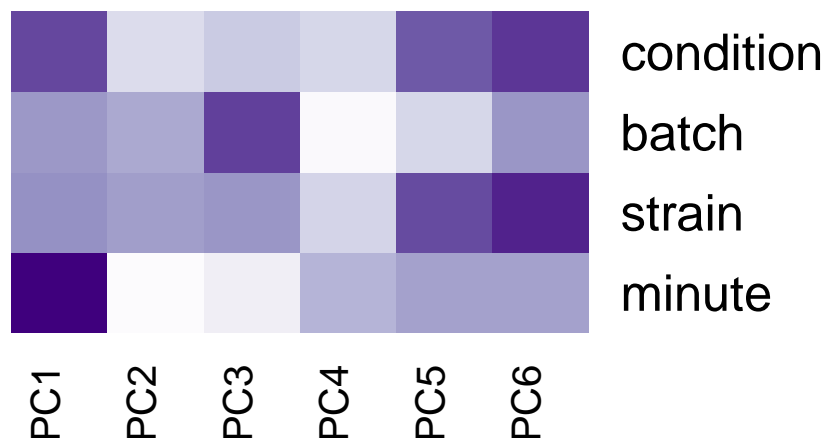
```
## ok, that caused the 0, 60, 15, and 30 minute samples to cluster nicely
## the 120 and 180 minute samples are still a bit tight
```

```
## pca_information provides some more information about the call to
## fast.svd that went into making the pca plot
```

```
fis_info = pca_information(df=exprs(norm_expt$expressionset), design=full_design, factors=c("condition"
```



cor(factor, PC)




```
## The r2 table shows that quite a lot of the variance in the data is explained by condition
head(fis_info$rsquared_table)
```

```
##      prop_var cumulative_prop_var condition  batch strain minute
## 1    25.248          25.248    99.121  0.026  0.181 98.742
## 2    11.723          36.971    95.702  0.339  0.014 94.187
## 3     6.781          43.752    83.948 11.181  0.036 79.365
## 4     5.641          49.393    16.210 27.526  5.416  7.125
## 5     4.693          54.086    82.548  6.468  9.033 69.929
## 6     4.013          58.099    54.979  0.630 17.867 20.635
```

```
## We can look at the correlation between the principle components and the factors in the experiment
## in this case looking at condition/batch vs the first 4 components.
fis_info$pca_cor
```

```
##           PC1          PC2          PC3          PC4          PC5
## condition 0.31026261 -0.27615359 -0.18999333 -0.24860685  0.25138566
## batch      0.01626026 -0.05021346  0.33438111 -0.51741777 -0.25096858
## strain     0.04251211 -0.01170664  0.01890856 -0.23272147  0.30055641
## minute     0.55246085 -0.53762928 -0.41725153 -0.09370953 -0.01983385
##           PC6
## condition  0.35921743
## batch       0.02555706
## strain      0.42269307
## minute     -0.01641959
```

```
## And p-values to lend some credence(or not to those assertions)
fis_info$anova_p
```

```
##           V1          V2          V3          V4          V5
## condition 0.0655306900 0.1030326505 0.26705258 0.143723269 0.13915339
## batch      0.9250102196 0.7711801967 0.04623159 0.001230754 0.13983239
## strain     0.8055414355 0.9459741615 0.91283996 0.171973713 0.07489059
## minute     0.0004763876 0.0007209213 0.01134716 0.586707957 0.90859222
##           V6
## condition 0.03142608
## batch      0.88237858
## strain     0.01022002
## minute     0.92427751
```

```
## Try again with batch removed data
batchnorm_expt = normalize_expt(fission_expt, batch="limma")
```

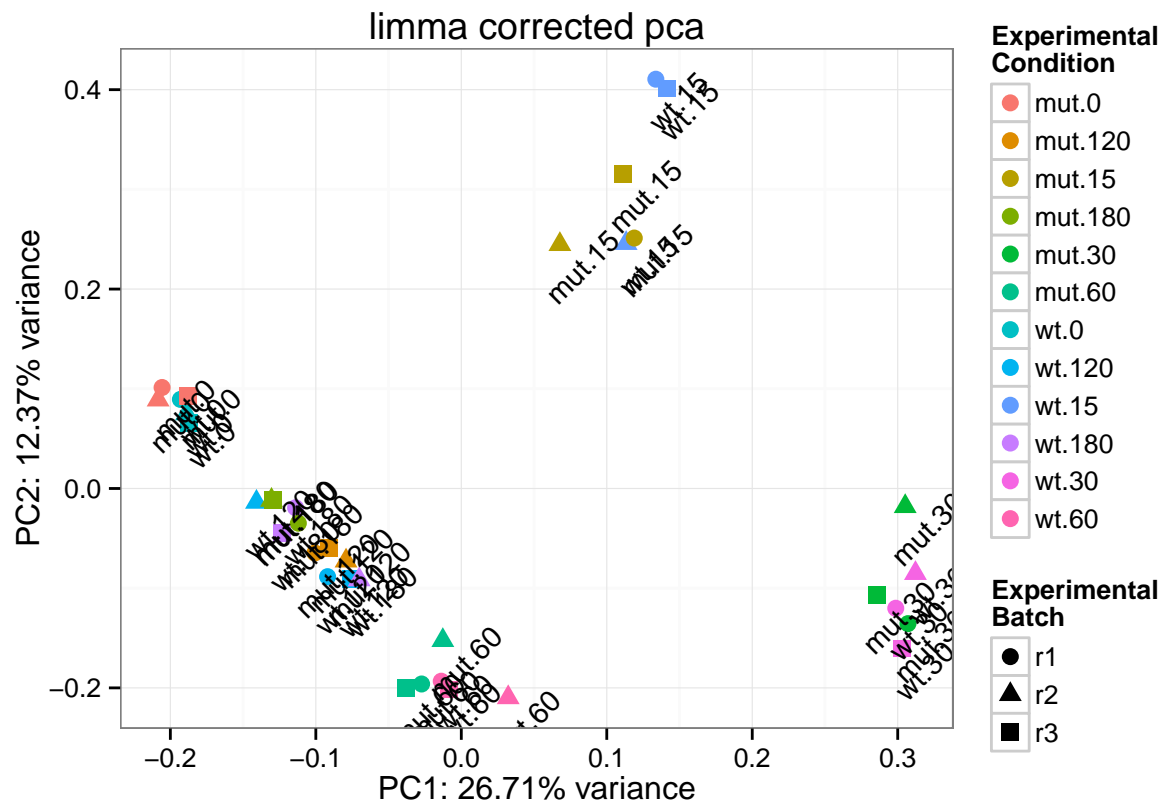
```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(quant(cpm))'d data"
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

```
## Using limma's removeBatchEffect to remove batch effect.
```

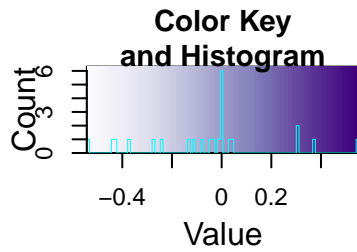
```
fis_batchnormpca = hpgl_pca(expt=batchnorm_expt, labels=norm_expt$condition, title="limma corrected pca")
```

```
## Scale for 'shape' is already present. Adding another scale for 'shape', which will replace the exist
```

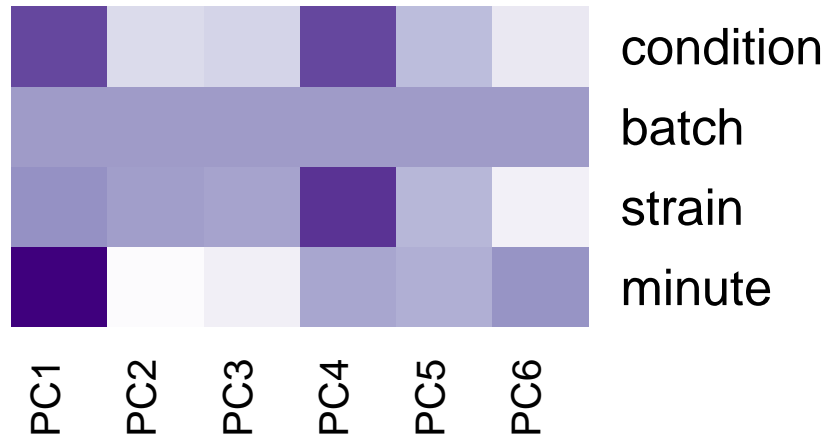
```
fis_batchnormpca$plot
```



```
test_pca = pca_information(df=exprs(batchnorm_expt$expressionset), design=full_design, factors=c("condi
```



cor(factor, PC)



```
combatnorm_expt = normalize_expt(fission_expt, batch="sva")
```

```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(quant(cpm))'d data."
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

```
## Using sva's combat for batch correction with the 'noScale' option.
```

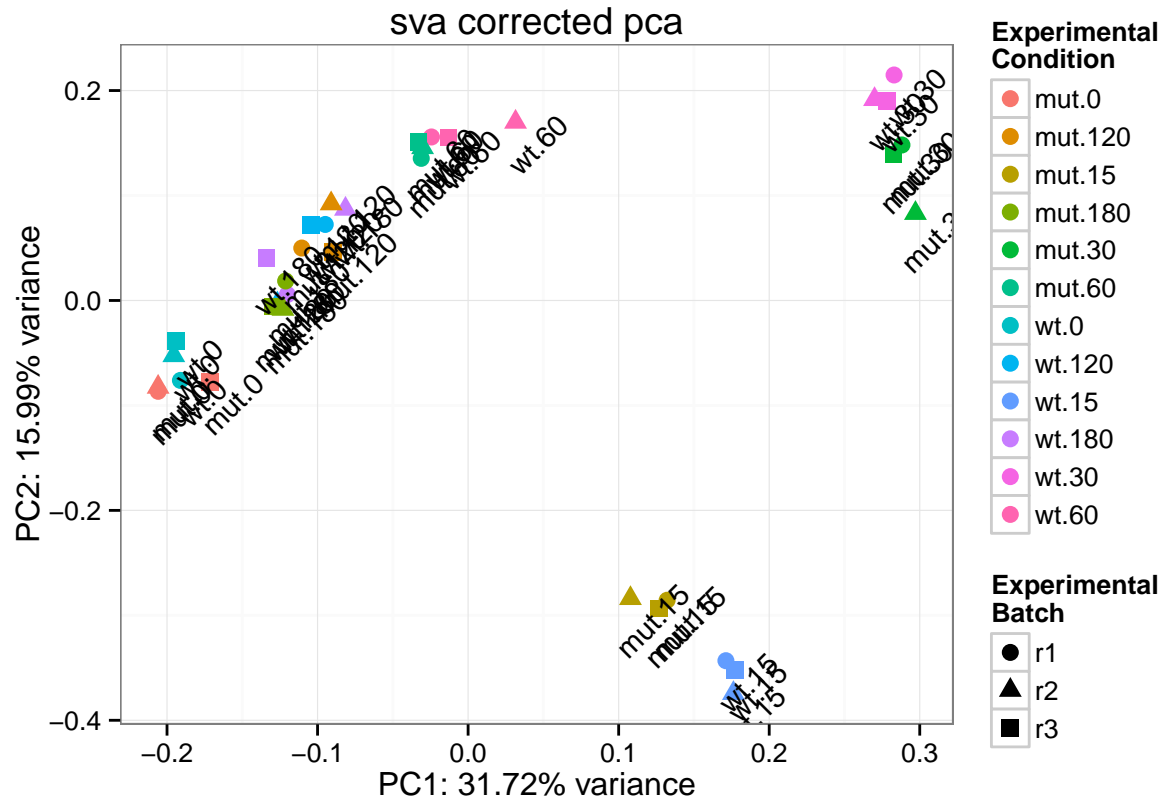
```
## Number of significant surrogate variables is: 6
## Iteration (out of 5 ):1 2 3 4 5
```

```
fis_combatnormpca = hpgl_pca(expt=combatnorm_expt, labels=norm_expt$condition, title="sva corrected pca")
```

```
## Scale for 'shape' is already present. Adding another scale for 'shape', which will replace the existing one.
```

```
fis_combatnormpca
```

```
## $plot
```



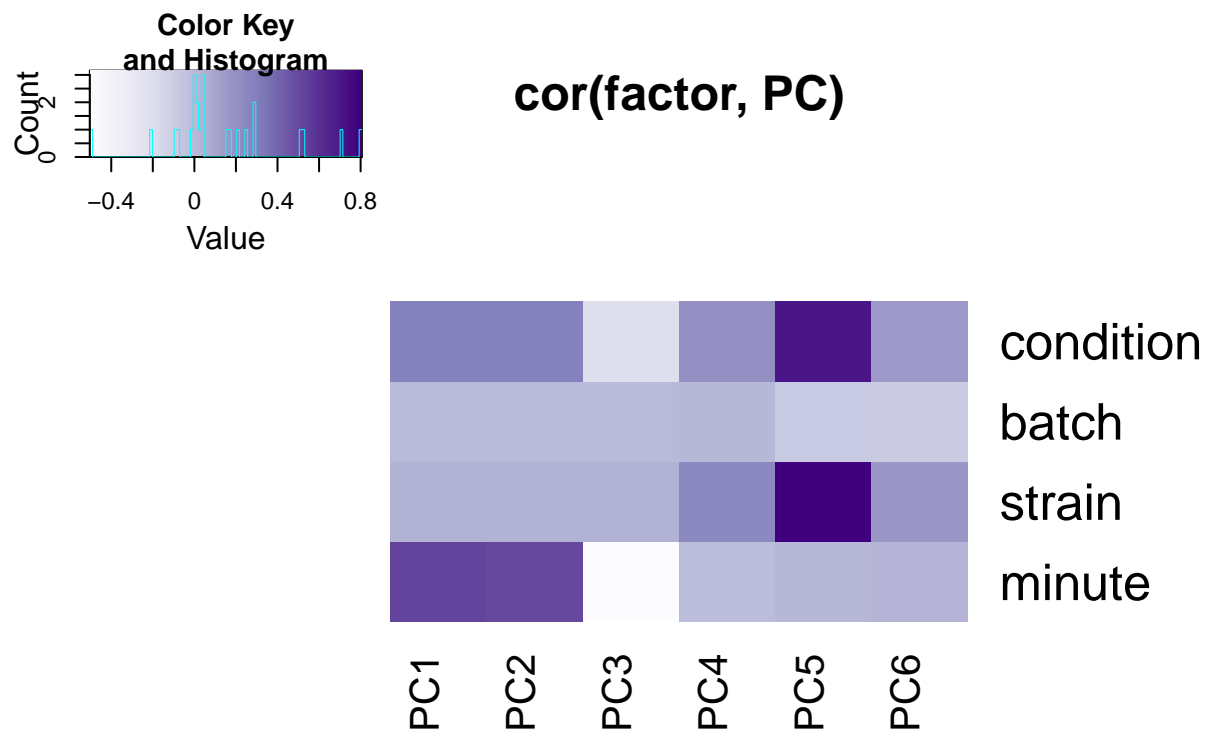
```
##
## $table
##      SampleID condition batch batch_int      PC1      PC2
## GSM1368273   wt.0-r1      wt.0      r1         1 -0.19108242 -0.076167241
## GSM1368274   wt.0-r2      wt.0      r2         2 -0.19548900 -0.052465803
## GSM1368275   wt.0-r3      wt.0      r3         3 -0.19370159 -0.038402096
## GSM1368276   wt.15-r1     wt.15     r1         1  0.17124072 -0.343246530
## GSM1368277   wt.15-r2     wt.15     r2         2  0.17622820 -0.374356198
## GSM1368278   wt.15-r3     wt.15     r3         3  0.17723778 -0.351757173
## GSM1368279   wt.30-r1     wt.30     r1         1  0.28293047  0.214836323
## GSM1368280   wt.30-r2     wt.30     r2         2  0.26996214  0.191572293
## GSM1368281   wt.30-r3     wt.30     r3         3  0.27820266  0.190172608
## GSM1368282   wt.60-r1     wt.60     r1         1 -0.02435118  0.155777267
## GSM1368283   wt.60-r2     wt.60     r2         2  0.03151346  0.169971513
## GSM1368284   wt.60-r3     wt.60     r3         3 -0.01276884  0.155074008
## GSM1368285   wt.120-r1    wt.120    r1         1 -0.09489028  0.072428040
## GSM1368286   wt.120-r2    wt.120    r2         2 -0.12670864 -0.003221264
## GSM1368287   wt.120-r3    wt.120    r3         3 -0.10450024  0.071590525
## GSM1368288   wt.180-r1    wt.180    r1         1 -0.12006423  0.005645962
## GSM1368289   wt.180-r2    wt.180    r2         2 -0.08145670  0.087068431
## GSM1368290   wt.180-r3    wt.180    r3         3 -0.13417972  0.040424160
## GSM1368291   mut.0-r1     mut.0      r1         1 -0.20588047 -0.086559304
## GSM1368292   mut.0-r2     mut.0      r2         2 -0.20590885 -0.082538531
## GSM1368293   mut.0-r3     mut.0      r3         3 -0.17127730 -0.077341485
## GSM1368294   mut.15-r1    mut.15     r1         1  0.13219266 -0.285639736
## GSM1368295   mut.15-r2    mut.15     r2         2  0.10782807 -0.283895931
## GSM1368296   mut.15-r3    mut.15     r3         3  0.12672054 -0.293352756
## GSM1368297   mut.30-r1    mut.30     r1         1  0.28815611  0.148158787
```

```

## GSM1368298 mut.30-r2 mut.30 r2 2 0.29713597 0.083050392
## GSM1368299 mut.30-r3 mut.30 r3 3 0.28280136 0.138660049
## GSM1368300 mut.60-r1 mut.60 r1 1 -0.03112680 0.135384643
## GSM1368301 mut.60-r2 mut.60 r2 2 -0.03024063 0.145733700
## GSM1368302 mut.60-r3 mut.60 r3 3 -0.03283857 0.150515104
## GSM1368303 mut.120-r1 mut.120 r1 1 -0.11048484 0.049937288
## GSM1368304 mut.120-r2 mut.120 r2 2 -0.09099003 0.092202050
## GSM1368305 mut.120-r3 mut.120 r3 3 -0.09001757 0.046406244
## GSM1368306 mut.180-r1 mut.180 r1 1 -0.12121092 0.018569355
## GSM1368307 mut.180-r2 mut.180 r2 2 -0.12298129 -0.008262729
## GSM1368308 mut.180-r3 mut.180 r3 3 -0.13000005 -0.005971968
##
## $res
## propVar cumPropVar cond.R2 batch.R2
## 1 31.72 31.72 99.46 0.01
## 2 15.99 47.71 98.67 0.02
## 3 8.45 56.16 99.15 0.03
## 4 5.23 61.39 97.95 0.06
## 5 3.72 65.11 90.93 2.05
## 6 2.62 67.73 76.75 1.11
## 7 2.38 70.11 24.25 20.76
## 8 2.18 72.29 14.37 13.77
## 9 2.03 74.32 21.38 11.81
## 10 1.97 76.29 60.47 2.52
## 11 1.85 78.14 14.09 2.52
## 12 1.64 79.78 52.34 1.86
## 13 1.59 81.37 33.23 2.78
## 14 1.58 82.95 29.86 7.37
## 15 1.45 84.40 24.62 2.50
## 16 1.43 85.83 36.05 0.13
## 17 1.34 87.17 10.37 3.29
## 18 1.33 88.50 31.81 7.56
## 19 1.26 89.76 10.97 4.47
## 20 1.21 90.97 7.38 3.44
## 21 1.15 92.12 18.39 14.79
## 22 1.13 93.25 28.61 1.06
## 23 1.11 94.36 18.07 3.15
## 24 1.07 95.43 44.16 1.53
## 25 1.02 96.45 13.23 0.51
## 26 0.93 97.38 22.10 0.26
## 27 0.89 98.27 7.61 2.46
## 28 0.87 99.14 7.85 2.09
## 29 0.85 99.99 5.88 0.24
##
## $variance
## [1] 31.72 15.99 8.45 5.23 3.72 2.62 2.38 2.18 2.03 1.97 1.85
## [12] 1.64 1.59 1.58 1.45 1.43 1.34 1.33 1.26 1.21 1.15 1.13
## [23] 1.11 1.07 1.02 0.93 0.89 0.87 0.85

```

```
test_pca = pca_information(df=exprs(combatnorm_expt$expressionset), design=full_design, factors=c("cond
```

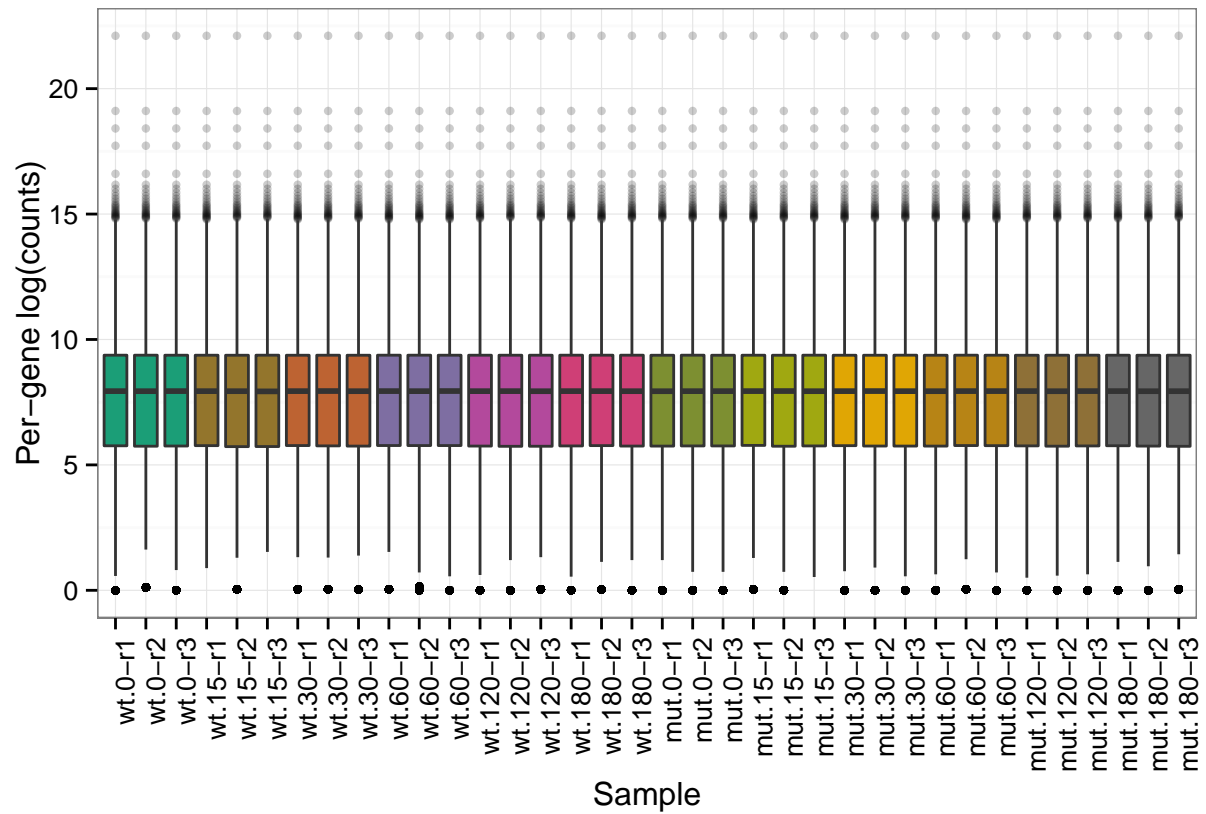


Interesting, the batch normalized pca plot looks much the same as the normalized. The variances are in fact pretty much the exact same...

Look at the data distributions

We have some tools which provide visualizations of the distribution of the data:

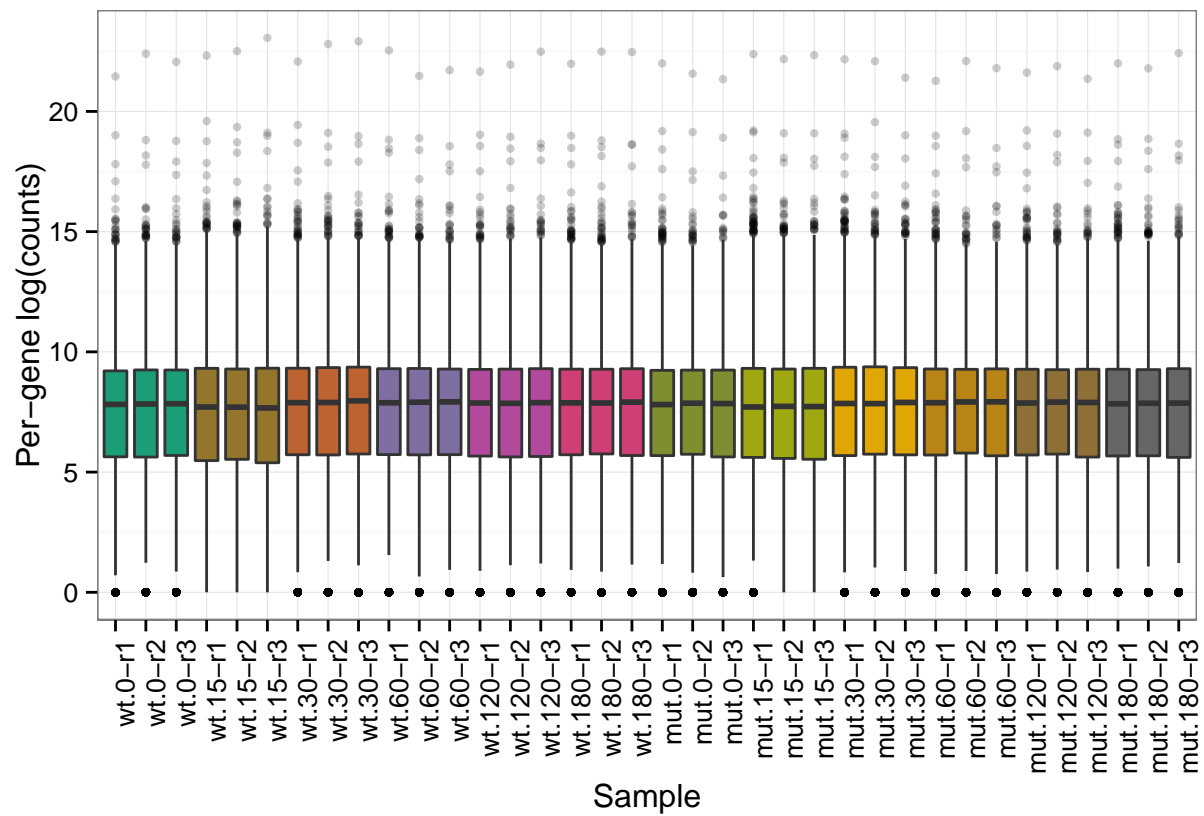
```
hpgl_boxplot(expt=norm_expt)
```



```
sf_expt = normalize_expt(fission_expt, norm="sf")
```

```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(sf(cpm))'d data."
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

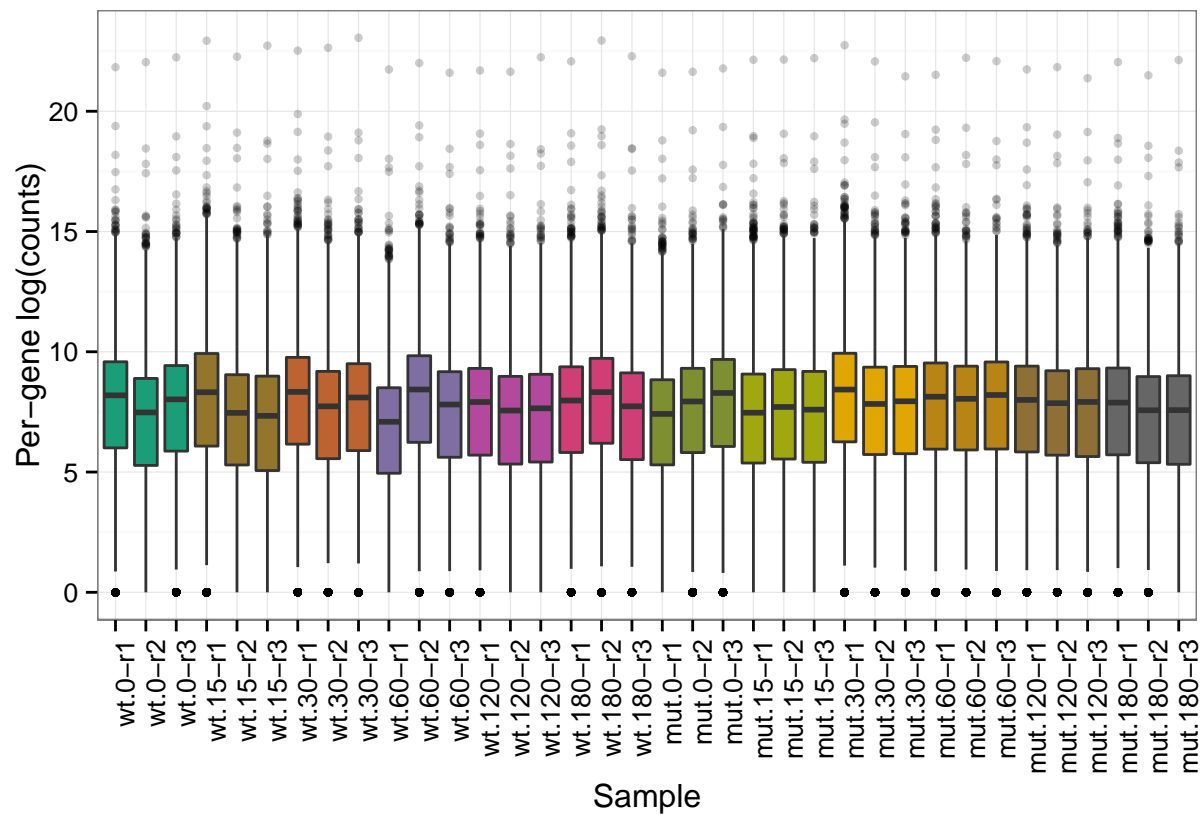
```
hpgl_boxplot(expt=sf_expt)
```



```
tm_expt = normalize_expt(fission_expt, norm="tmm")
```

```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(tmm(cpm))'d data."
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

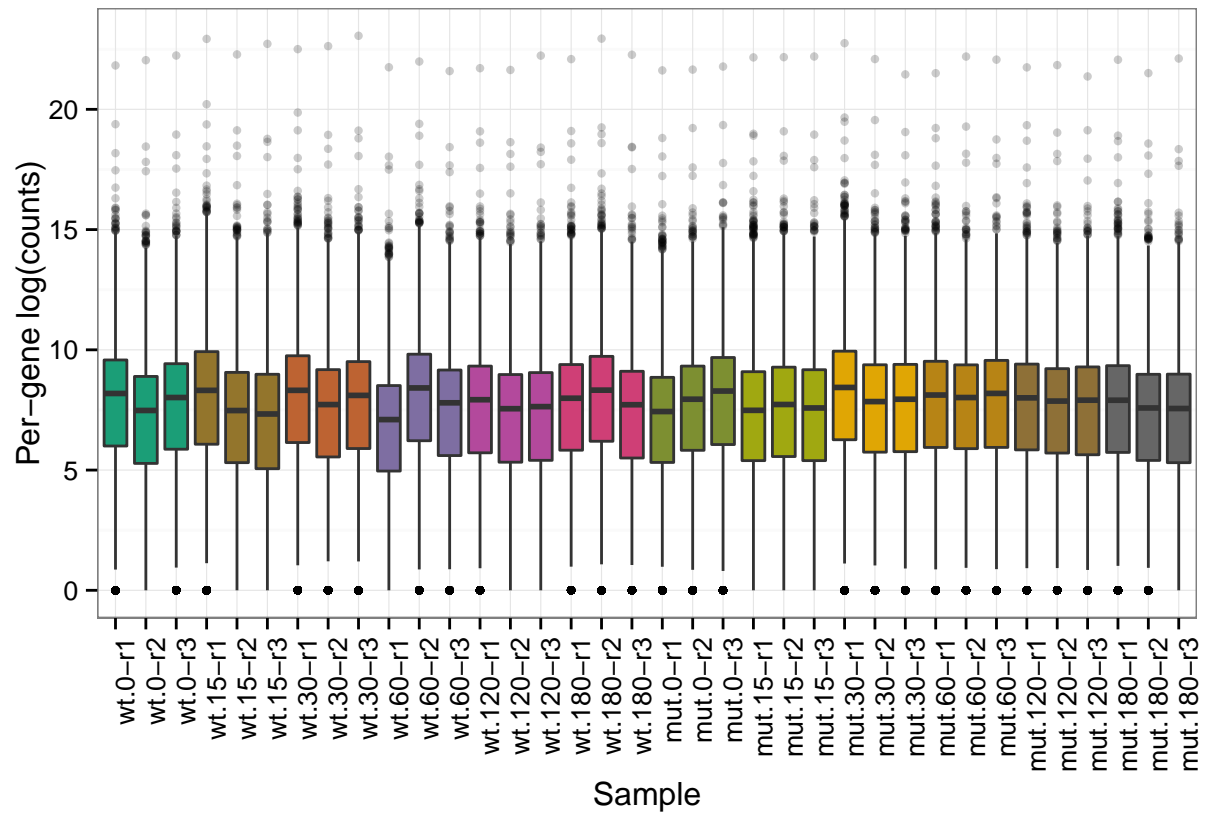
```
hpgl_boxplot(expt=tm_expt)
```

```
rle_expt = normalize_expt(fission_expt, norm="rle")
```

```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(rle(cpm))'d data."
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

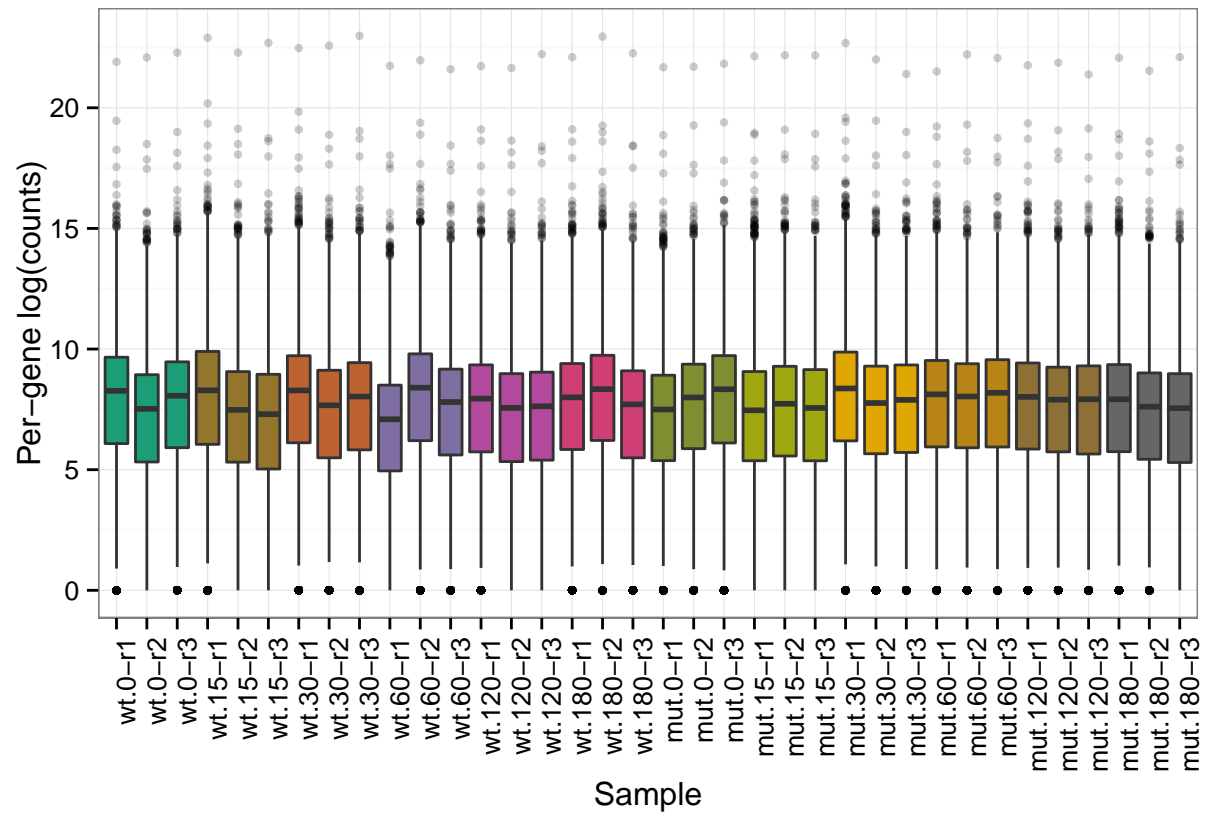
```
hpgl_boxplot(expt=rle_expt)
```



```
up_expt = normalize_expt(fission_expt, norm="upperquartile")
```

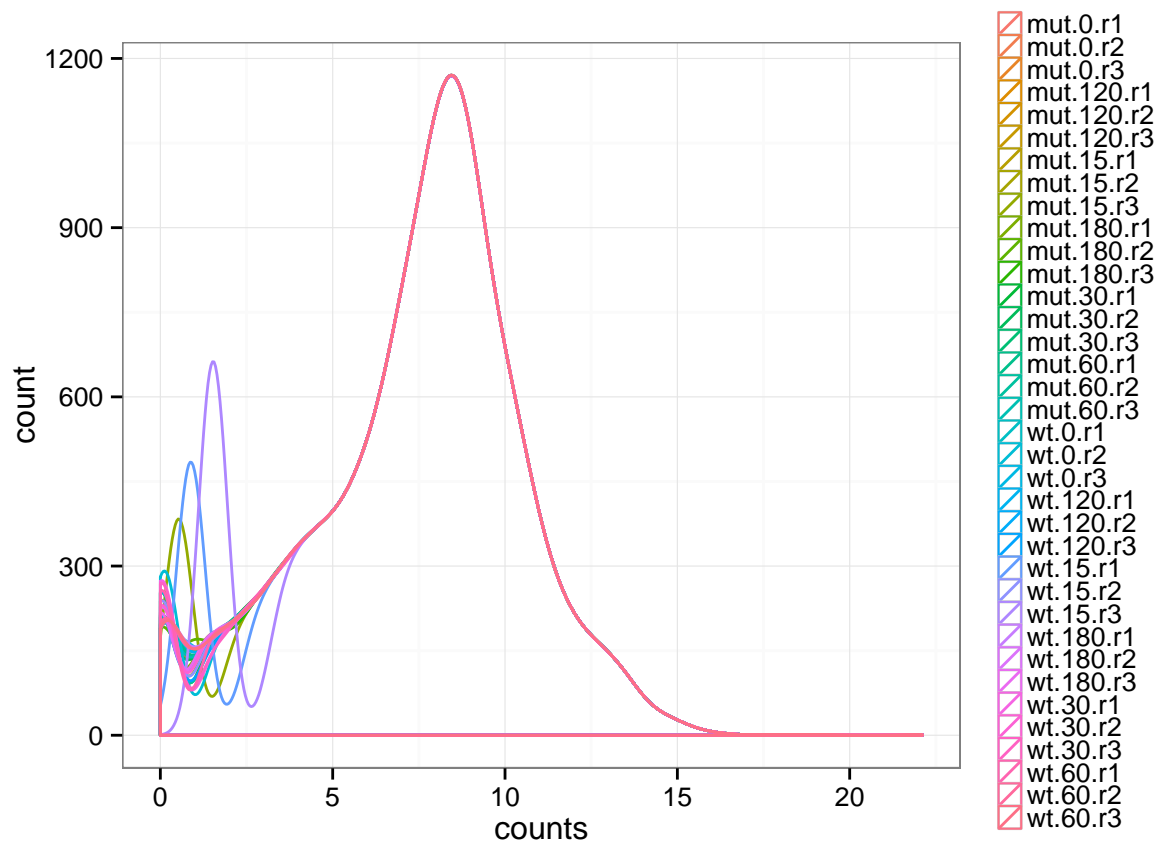
```
## [1] "This function defaults to replacing the expt$expressionset slot with the log2(upperquartile(cpm))"
## [1] "It saves the current data into a slot named: expt$backup_expressionset"
```

```
hpgl_boxplot(expt=up_expt)
```



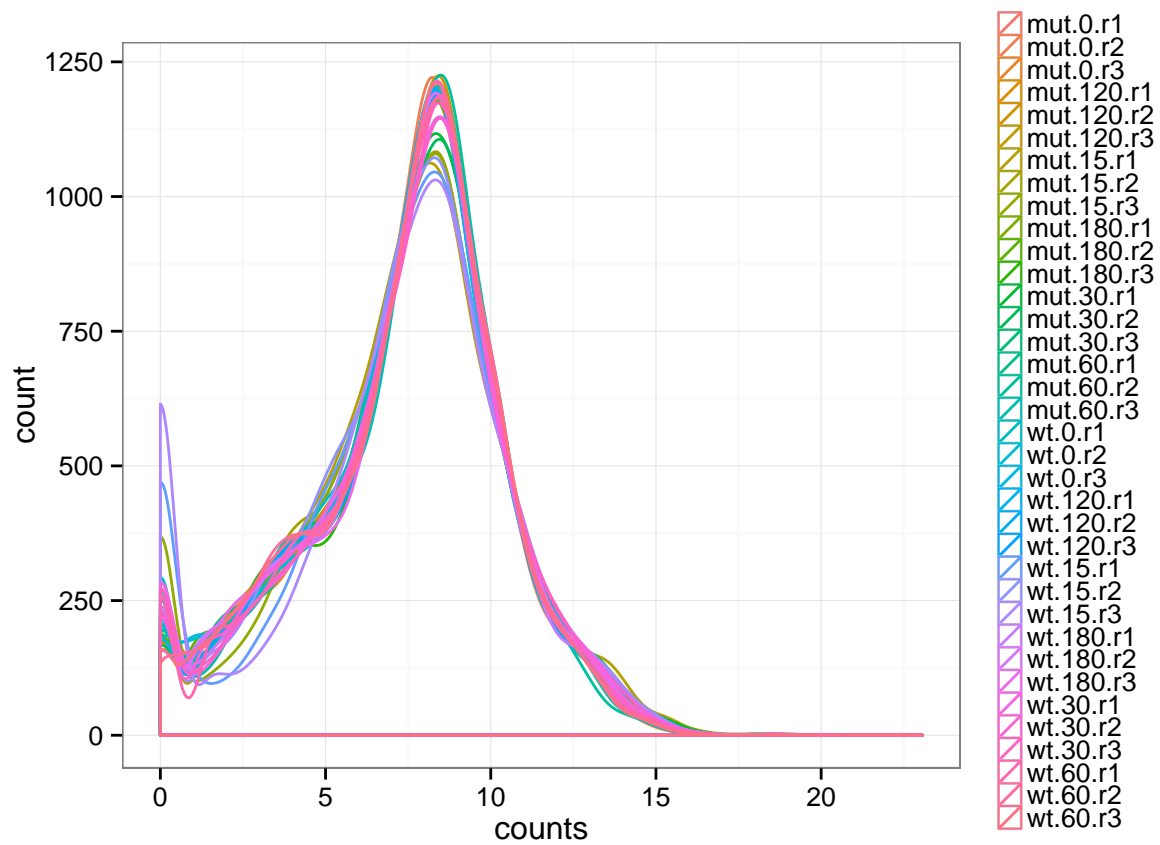
```
hpgl_density_plot(expt=norm_expt)
```

```
## This plot looks neat if you do position='fill' or position='stack'
```



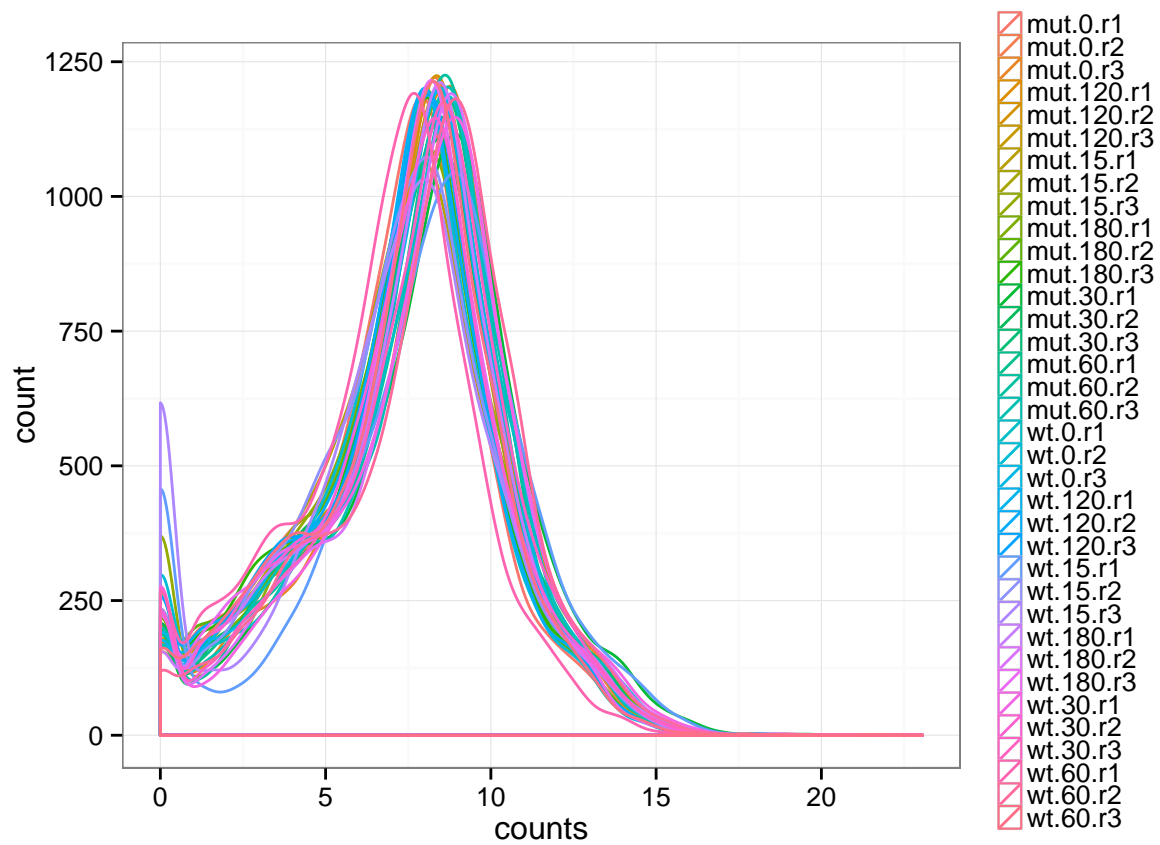
```
hpgl_density_plot(expt=sf_expt)
```

```
## This plot looks neat if you do position='fill' or position='stack'
```

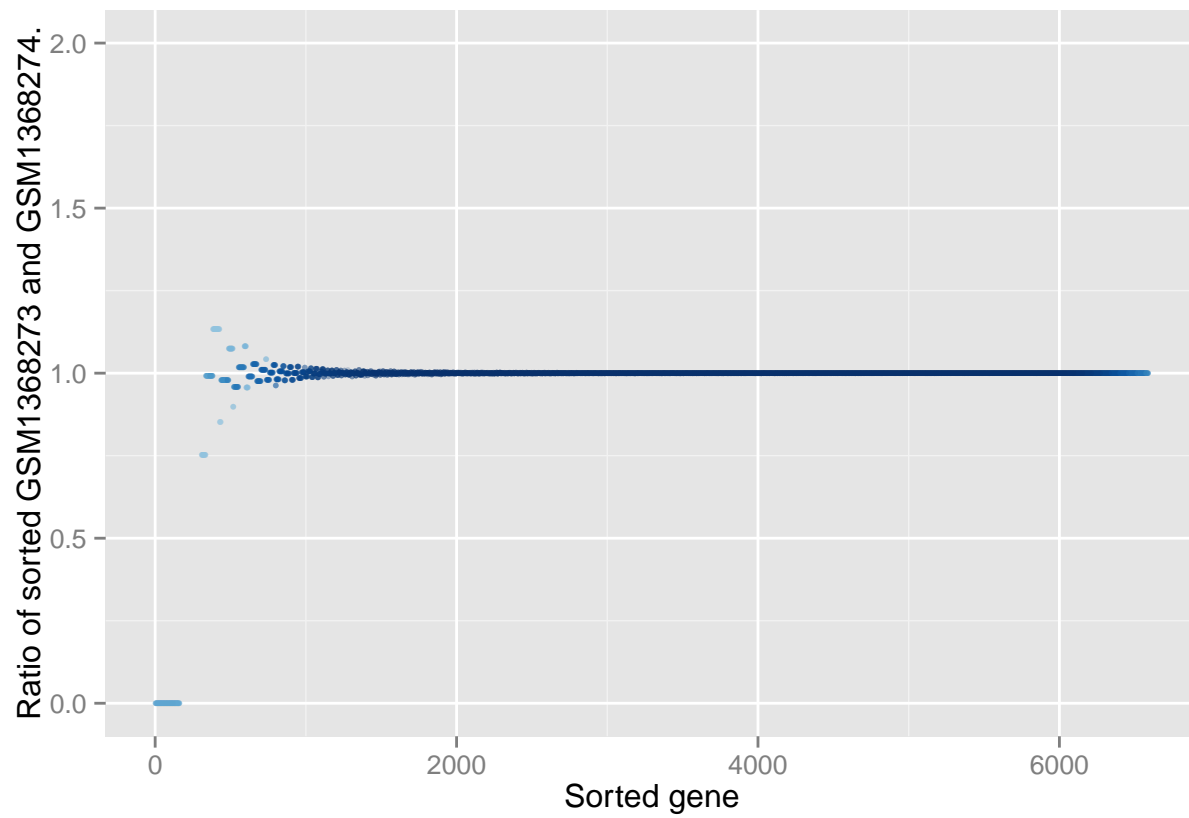


```
hpgl_density_plot(expt=tm_expt)
```

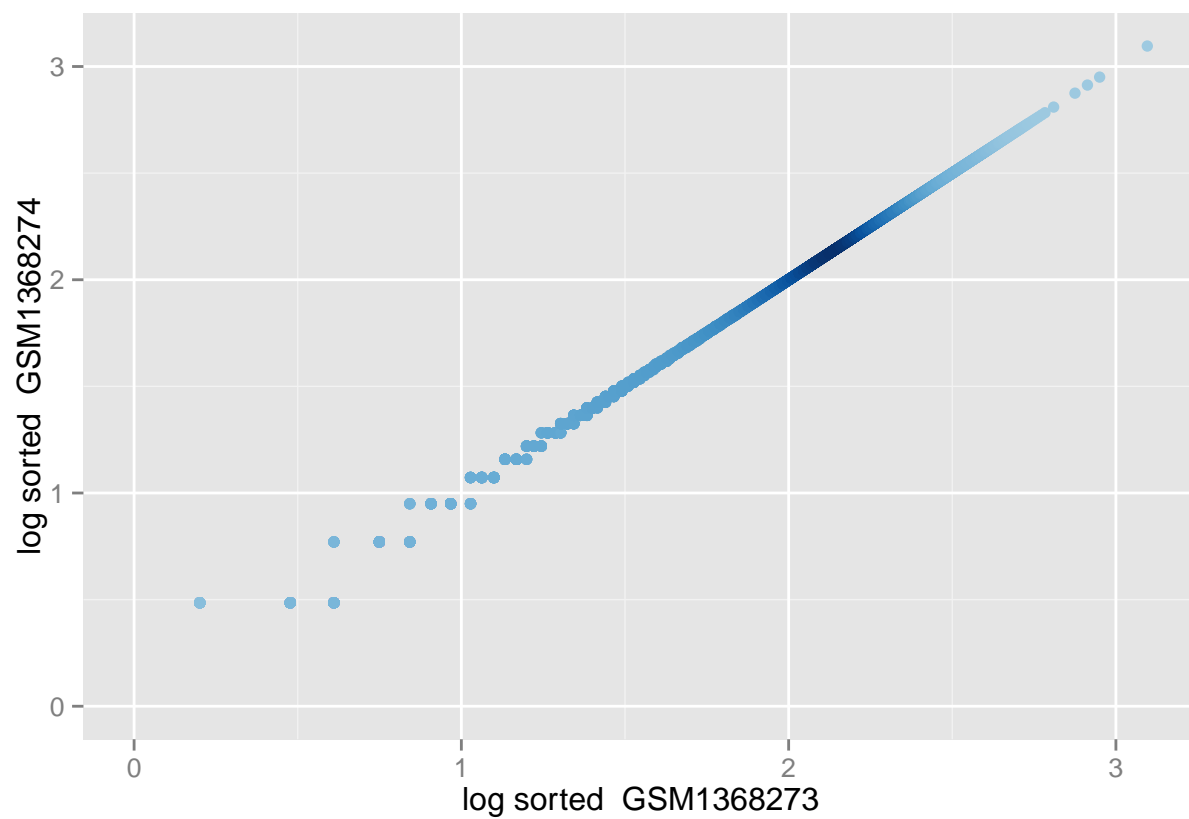
```
## This plot looks neat if you do position='fill' or position='stack'
```



```
compare_12 = hpgl_qq_plot(exprs(norm_expt$expressionset), x=1, y=2)
compare_12$ratio
```



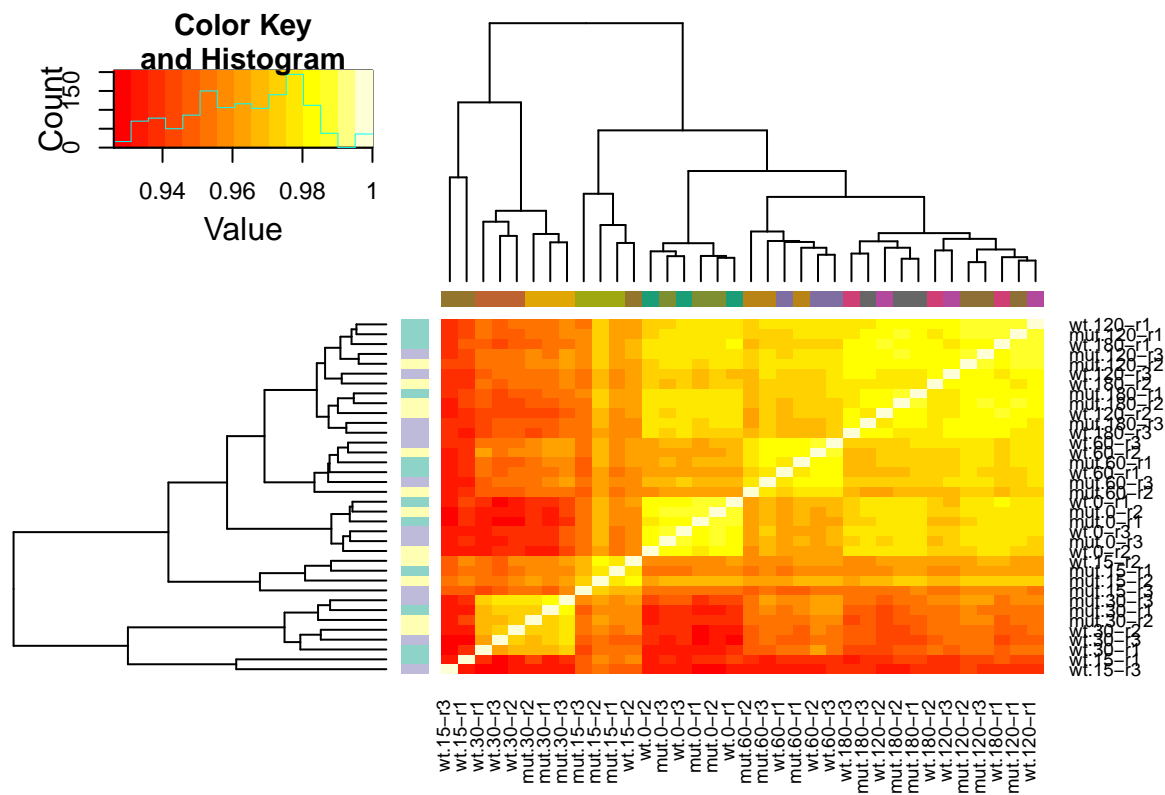
```
compare_12$log
```



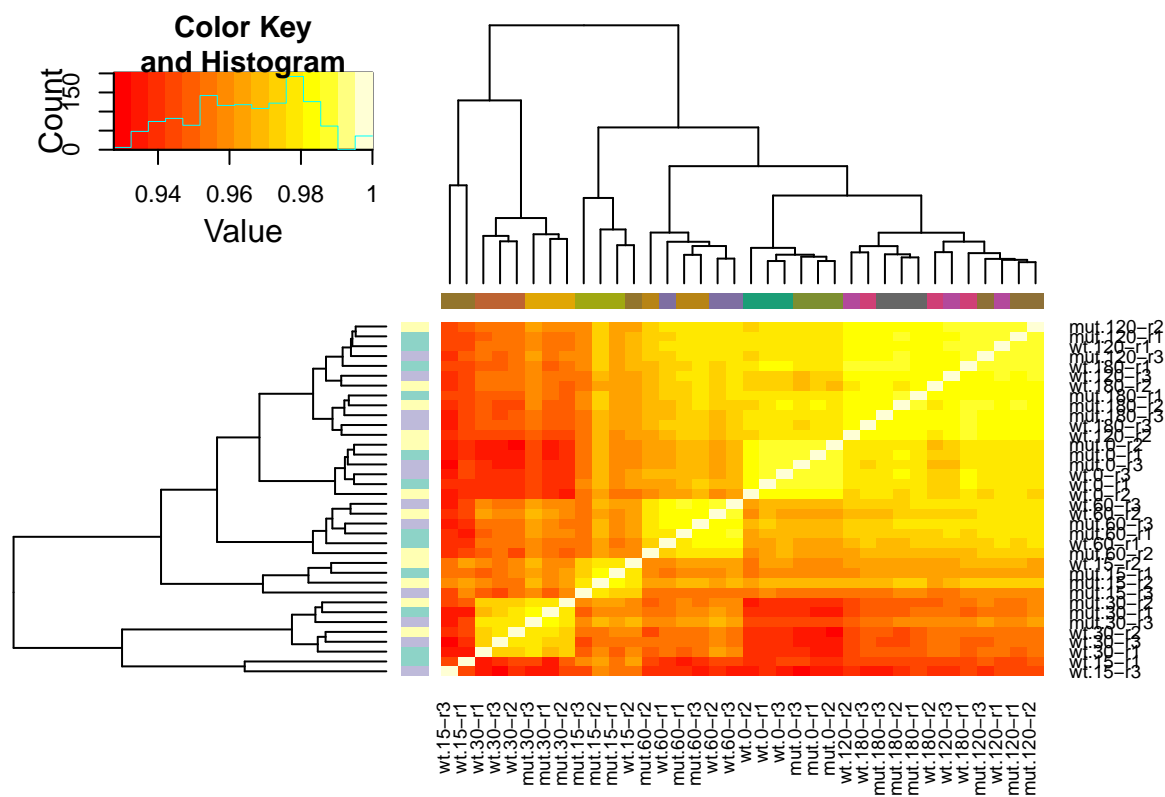
See how they cluster

Ok, so we can further check out how the data cluster with respect to one another...

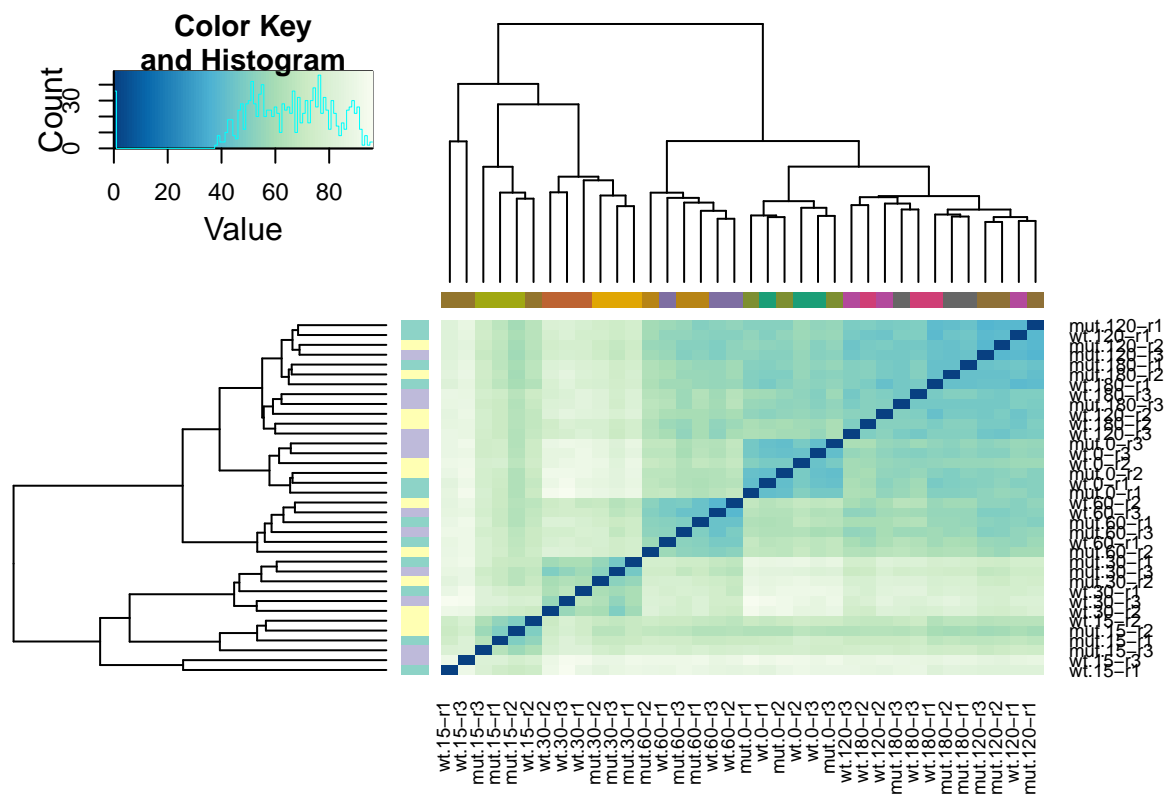
```
hpgl_corheat(expt=norm_expt)
```



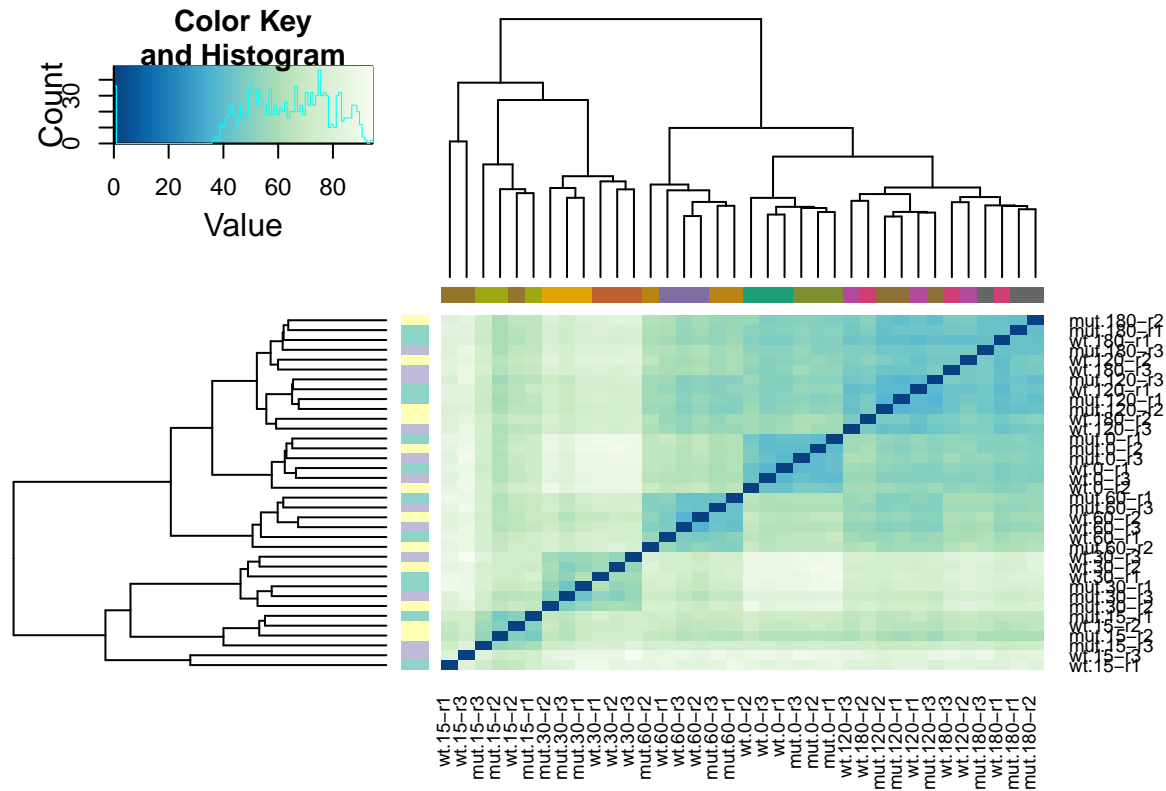
```
hpgl_corheat(expt=batchnorm_expt)
```

`hpgl_disheat(expt=norm_expt)`



```
hpgl_disheat(expt=batchnorm_expt)
```



Some simple differential expression analyses

```
all_pairwise = balanced_pairwise(exprs(norm_expt$expressionset), norm_expt$conditions, norm_expt$batch)
```

```
## [1] "As a reference, the identity is: mut.0 = mut.0,"
## [1] "As a reference, the identity is: mut.120 = mut.120,"
## [1] "As a reference, the identity is: mut.15 = mut.15,"
## [1] "As a reference, the identity is: mut.180 = mut.180,"
## [1] "As a reference, the identity is: mut.30 = mut.30,"
## [1] "As a reference, the identity is: mut.60 = mut.60,"
## [1] "As a reference, the identity is: wt.0 = wt.0,"
## [1] "As a reference, the identity is: wt.120 = wt.120,"
## [1] "As a reference, the identity is: wt.15 = wt.15,"
## [1] "As a reference, the identity is: wt.180 = wt.180,"
## [1] "As a reference, the identity is: wt.30 = wt.30,"
## [1] "As a reference, the identity is: wt.60 = wt.60,"
```

```
## Printing table: mut.0
## The qvalue estimation failed for mut.0.
## Printing table: mut.120
## The qvalue estimation failed for mut.120.
## Printing table: mut.15
```

```

## The qvalue estimation failed for mut.15.
## Printing table: mut.180
## The qvalue estimation failed for mut.180.
## Printing table: mut.30
## The qvalue estimation failed for mut.30.
## Printing table: mut.60
## The qvalue estimation failed for mut.60.
## Printing table: wt.0
## The qvalue estimation failed for wt.0.
## Printing table: wt.120
## The qvalue estimation failed for wt.120.
## Printing table: wt.15
## The qvalue estimation failed for wt.15.
## Printing table: wt.180
## The qvalue estimation failed for wt.180.
## Printing table: wt.30
## The qvalue estimation failed for wt.30.
## Printing table: wt.60
## The qvalue estimation failed for wt.60.
## Printing table: mut.120_minus_mut.0
## The qvalue estimation failed for mut.120_minus_mut.0.
## Printing table: mut.15_minus_mut.0
## The qvalue estimation failed for mut.15_minus_mut.0.
## Printing table: mut.180_minus_mut.0
## The qvalue estimation failed for mut.180_minus_mut.0.
## Printing table: mut.30_minus_mut.0
## The qvalue estimation failed for mut.30_minus_mut.0.
## Printing table: mut.60_minus_mut.0
## The qvalue estimation failed for mut.60_minus_mut.0.
## Printing table: wt.0_minus_mut.0
## The qvalue estimation failed for wt.0_minus_mut.0.
## Printing table: wt.120_minus_mut.0
## The qvalue estimation failed for wt.120_minus_mut.0.
## Printing table: wt.15_minus_mut.0
## The qvalue estimation failed for wt.15_minus_mut.0.
## Printing table: wt.180_minus_mut.0
## The qvalue estimation failed for wt.180_minus_mut.0.
## Printing table: wt.30_minus_mut.0
## The qvalue estimation failed for wt.30_minus_mut.0.
## Printing table: wt.60_minus_mut.0
## The qvalue estimation failed for wt.60_minus_mut.0.
## Printing table: mut.15_minus_mut.120
## The qvalue estimation failed for mut.15_minus_mut.120.
## Printing table: mut.180_minus_mut.120
## The qvalue estimation failed for mut.180_minus_mut.120.
## Printing table: mut.30_minus_mut.120
## The qvalue estimation failed for mut.30_minus_mut.120.
## Printing table: mut.60_minus_mut.120
## The qvalue estimation failed for mut.60_minus_mut.120.
## Printing table: wt.0_minus_mut.120
## The qvalue estimation failed for wt.0_minus_mut.120.
## Printing table: wt.120_minus_mut.120
## The qvalue estimation failed for wt.120_minus_mut.120.
## Printing table: wt.15_minus_mut.120

```

```

## The qvalue estimation failed for wt.15_minus_mut.120.
## Printing table: wt.180_minus_mut.120
## The qvalue estimation failed for wt.180_minus_mut.120.
## Printing table: wt.30_minus_mut.120
## The qvalue estimation failed for wt.30_minus_mut.120.
## Printing table: wt.60_minus_mut.120
## The qvalue estimation failed for wt.60_minus_mut.120.
## Printing table: mut.180_minus_mut.15
## The qvalue estimation failed for mut.180_minus_mut.15.
## Printing table: mut.30_minus_mut.15
## The qvalue estimation failed for mut.30_minus_mut.15.
## Printing table: mut.60_minus_mut.15
## The qvalue estimation failed for mut.60_minus_mut.15.
## Printing table: wt.0_minus_mut.15
## The qvalue estimation failed for wt.0_minus_mut.15.
## Printing table: wt.120_minus_mut.15
## The qvalue estimation failed for wt.120_minus_mut.15.
## Printing table: wt.15_minus_mut.15
## The qvalue estimation failed for wt.15_minus_mut.15.
## Printing table: wt.180_minus_mut.15
## The qvalue estimation failed for wt.180_minus_mut.15.
## Printing table: wt.30_minus_mut.15
## The qvalue estimation failed for wt.30_minus_mut.15.
## Printing table: wt.60_minus_mut.15
## The qvalue estimation failed for wt.60_minus_mut.15.
## Printing table: mut.30_minus_mut.180
## The qvalue estimation failed for mut.30_minus_mut.180.
## Printing table: mut.60_minus_mut.180
## The qvalue estimation failed for mut.60_minus_mut.180.
## Printing table: wt.0_minus_mut.180
## The qvalue estimation failed for wt.0_minus_mut.180.
## Printing table: wt.120_minus_mut.180
## The qvalue estimation failed for wt.120_minus_mut.180.
## Printing table: wt.15_minus_mut.180
## The qvalue estimation failed for wt.15_minus_mut.180.
## Printing table: wt.180_minus_mut.180
## The qvalue estimation failed for wt.180_minus_mut.180.
## Printing table: wt.30_minus_mut.180
## The qvalue estimation failed for wt.30_minus_mut.180.
## Printing table: wt.60_minus_mut.180
## The qvalue estimation failed for wt.60_minus_mut.180.
## Printing table: mut.60_minus_mut.30
## The qvalue estimation failed for mut.60_minus_mut.30.
## Printing table: wt.0_minus_mut.30
## The qvalue estimation failed for wt.0_minus_mut.30.
## Printing table: wt.120_minus_mut.30
## The qvalue estimation failed for wt.120_minus_mut.30.
## Printing table: wt.15_minus_mut.30
## The qvalue estimation failed for wt.15_minus_mut.30.
## Printing table: wt.180_minus_mut.30
## The qvalue estimation failed for wt.180_minus_mut.30.
## Printing table: wt.30_minus_mut.30
## The qvalue estimation failed for wt.30_minus_mut.30.
## Printing table: wt.60_minus_mut.30

```

```

## The qvalue estimation failed for wt.60_minus_mut.30.
## Printing table: wt.0_minus_mut.60
## The qvalue estimation failed for wt.0_minus_mut.60.
## Printing table: wt.120_minus_mut.60
## The qvalue estimation failed for wt.120_minus_mut.60.
## Printing table: wt.15_minus_mut.60
## The qvalue estimation failed for wt.15_minus_mut.60.
## Printing table: wt.180_minus_mut.60
## The qvalue estimation failed for wt.180_minus_mut.60.
## Printing table: wt.30_minus_mut.60
## The qvalue estimation failed for wt.30_minus_mut.60.
## Printing table: wt.60_minus_mut.60
## The qvalue estimation failed for wt.60_minus_mut.60.
## Printing table: wt.120_minus_wt.0
## The qvalue estimation failed for wt.120_minus_wt.0.
## Printing table: wt.15_minus_wt.0
## The qvalue estimation failed for wt.15_minus_wt.0.
## Printing table: wt.180_minus_wt.0
## The qvalue estimation failed for wt.180_minus_wt.0.
## Printing table: wt.30_minus_wt.0
## The qvalue estimation failed for wt.30_minus_wt.0.
## Printing table: wt.60_minus_wt.0
## The qvalue estimation failed for wt.60_minus_wt.0.
## Printing table: wt.15_minus_wt.120
## The qvalue estimation failed for wt.15_minus_wt.120.
## Printing table: wt.180_minus_wt.120
## The qvalue estimation failed for wt.180_minus_wt.120.
## Printing table: wt.30_minus_wt.120
## The qvalue estimation failed for wt.30_minus_wt.120.
## Printing table: wt.60_minus_wt.120
## The qvalue estimation failed for wt.60_minus_wt.120.
## Printing table: wt.180_minus_wt.15
## The qvalue estimation failed for wt.180_minus_wt.15.
## Printing table: wt.30_minus_wt.15
## The qvalue estimation failed for wt.30_minus_wt.15.
## Printing table: wt.60_minus_wt.15
## The qvalue estimation failed for wt.60_minus_wt.15.
## Printing table: wt.30_minus_wt.180
## The qvalue estimation failed for wt.30_minus_wt.180.
## Printing table: wt.60_minus_wt.180
## The qvalue estimation failed for wt.60_minus_wt.180.
## Printing table: wt.60_minus_wt.30
## The qvalue estimation failed for wt.60_minus_wt.30.

## I have the following elements in this list:
#### conditions_table      : how many replicates are there of each condition
#### batches_table        : how many replicates are there of each batch
#### conditions            : a factor of all the conditions
#### batches              : a factor of all the batches
#### model                 : the model of the data used for voom etc.
#### fit                   : the result of lmfit()
#### voom_result           : the result of voom()
#### voom_design           : the design matrix fed to voom()
#### identities            : the strings fed to makeContrasts() which describe each sample alone

```

```

### all_pairwise      : the strings describing all the subtractions fed to makeContrasts()
### contrast_string   : the entire string fed to makeContrasts() including the design etc.
### pairwise_fits     : the result of contrasts.fit()
### pairwise_comparisons : the result from eBayes()
### limma_result      : a list of toptable()s corresponding to each pairwise comparison

```

```
names(all_pairwise$limma_result)
```

```

## [1] "mut.0"           "mut.120"
## [3] "mut.15"          "mut.180"
## [5] "mut.30"          "mut.60"
## [7] "wt.0"            "wt.120"
## [9] "wt.15"           "wt.180"
## [11] "wt.30"           "wt.60"
## [13] "mut.120_minus_mut.0" "mut.15_minus_mut.0"
## [15] "mut.180_minus_mut.0" "mut.30_minus_mut.0"
## [17] "mut.60_minus_mut.0"  "wt.0_minus_mut.0"
## [19] "wt.120_minus_mut.0"  "wt.15_minus_mut.0"
## [21] "wt.180_minus_mut.0"  "wt.30_minus_mut.0"
## [23] "wt.60_minus_mut.0"   "mut.15_minus_mut.120"
## [25] "mut.180_minus_mut.120" "mut.30_minus_mut.120"
## [27] "mut.60_minus_mut.120" "wt.0_minus_mut.120"
## [29] "wt.120_minus_mut.120" "wt.15_minus_mut.120"
## [31] "wt.180_minus_mut.120" "wt.30_minus_mut.120"
## [33] "wt.60_minus_mut.120"  "mut.180_minus_mut.15"
## [35] "mut.30_minus_mut.15"   "mut.60_minus_mut.15"
## [37] "wt.0_minus_mut.15"     "wt.120_minus_mut.15"
## [39] "wt.15_minus_mut.15"    "wt.180_minus_mut.15"
## [41] "wt.30_minus_mut.15"    "wt.60_minus_mut.15"
## [43] "mut.30_minus_mut.180"  "mut.60_minus_mut.180"
## [45] "wt.0_minus_mut.180"    "wt.120_minus_mut.180"
## [47] "wt.15_minus_mut.180"   "wt.180_minus_mut.180"
## [49] "wt.30_minus_mut.180"   "wt.60_minus_mut.180"
## [51] "mut.60_minus_mut.30"   "wt.0_minus_mut.30"
## [53] "wt.120_minus_mut.30"   "wt.15_minus_mut.30"
## [55] "wt.180_minus_mut.30"   "wt.30_minus_mut.30"
## [57] "wt.60_minus_mut.30"    "wt.0_minus_mut.60"
## [59] "wt.120_minus_mut.60"   "wt.15_minus_mut.60"
## [61] "wt.180_minus_mut.60"   "wt.30_minus_mut.60"
## [63] "wt.60_minus_mut.60"    "wt.120_minus_wt.0"
## [65] "wt.15_minus_wt.0"      "wt.180_minus_wt.0"
## [67] "wt.30_minus_wt.0"      "wt.60_minus_wt.0"
## [69] "wt.15_minus_wt.120"    "wt.180_minus_wt.120"
## [71] "wt.30_minus_wt.120"    "wt.60_minus_wt.120"
## [73] "wt.180_minus_wt.15"    "wt.30_minus_wt.15"
## [75] "wt.60_minus_wt.15"     "wt.30_minus_wt.180"
## [77] "wt.60_minus_wt.180"    "wt.60_minus_wt.30"

```

```
summary(all_pairwise$limma_result$wt.120_minus_mut.120)
```

```

##      logFC      AveExpr      t
## Min.   :-2.236373  Min.   : 0.1848  Min.   :-4.53160

```

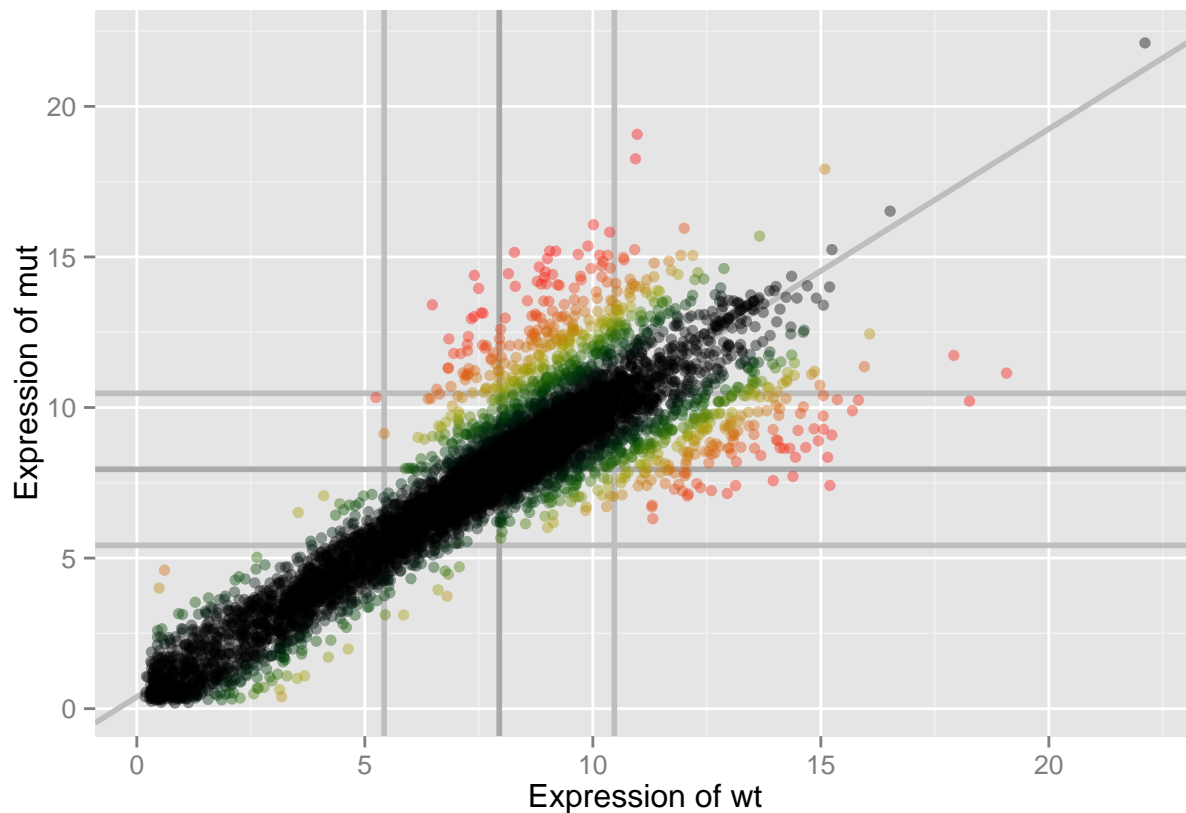
```
## 1st Qu.: -0.118798 1st Qu.: 5.7021 1st Qu.: -0.61288
## Median : -0.003815 Median : 7.9479 Median : -0.02258
## Mean : -0.001487 Mean : 7.4612 Mean : -0.03391
## 3rd Qu.: 0.114127 3rd Qu.: 9.3395 3rd Qu.: 0.56782
## Max. : 4.028325 Max. : 22.1079 Max. : 4.94838
## P.Value adj.P.Val B qvalue
## Min. : 0.0000268 Min. : 0.1767 Min. : -5.8006 Min. : 1
## 1st Qu.: 0.2966106 1st Qu.: 1.0000 1st Qu.: -5.4078 1st Qu.: 1
## Median : 0.5585114 Median : 1.0000 Median : -5.0354 Median : 1
## Mean : 0.5409978 Mean : 0.9995 Mean : -5.0103 Mean : 1
## 3rd Qu.: 0.7899764 3rd Qu.: 1.0000 3rd Qu.: -4.6900 3rd Qu.: 1
## Max. : 1.0000000 Max. : 1.0000 Max. : 0.9168 Max. : 1
```

```
wt_120 = all_pairwise$limma_result$wt.120
mut_120 = all_pairwise$limma_result$mut.120

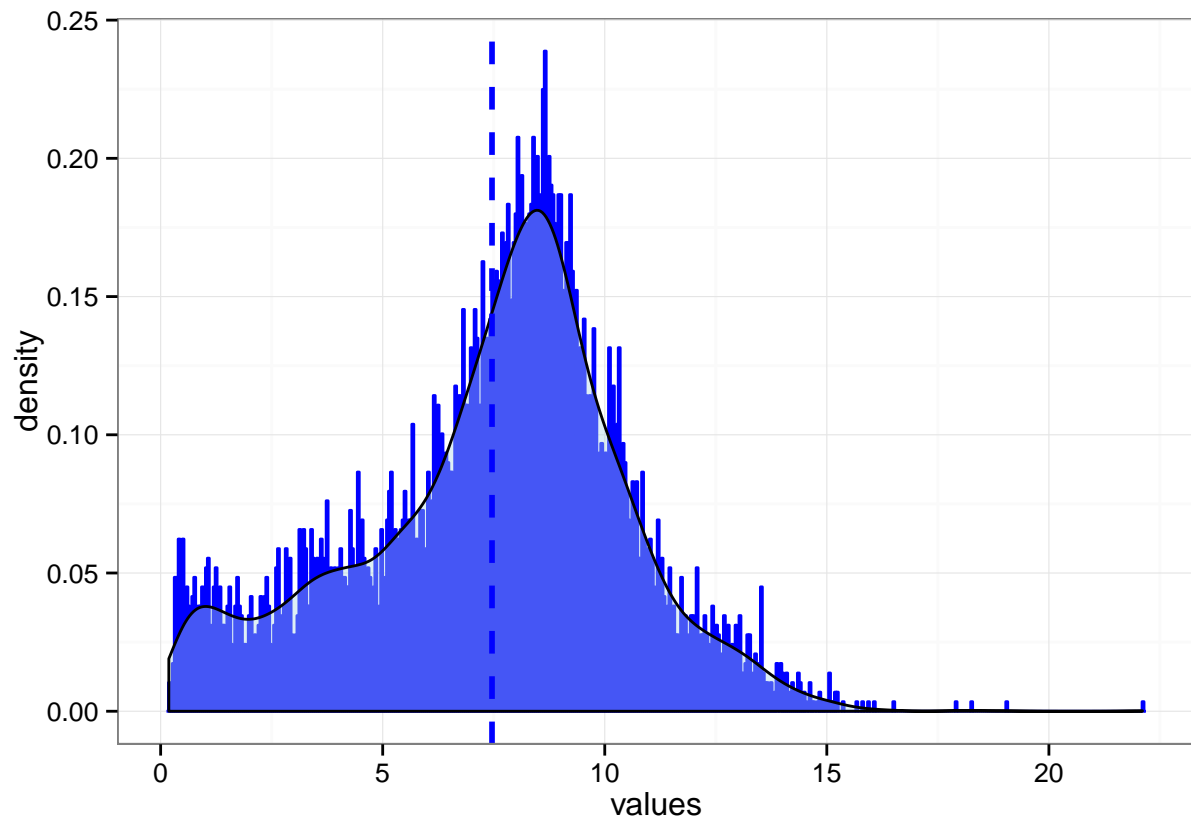
hpgl_linear_scatter(df=data.frame(wt=wt_120$AveExpr, mut=mut_120$AveExpr))
```

```
## No binwidth nor bins provided, setting it to 0.0438462191548365 in order to have 500 bins.
```

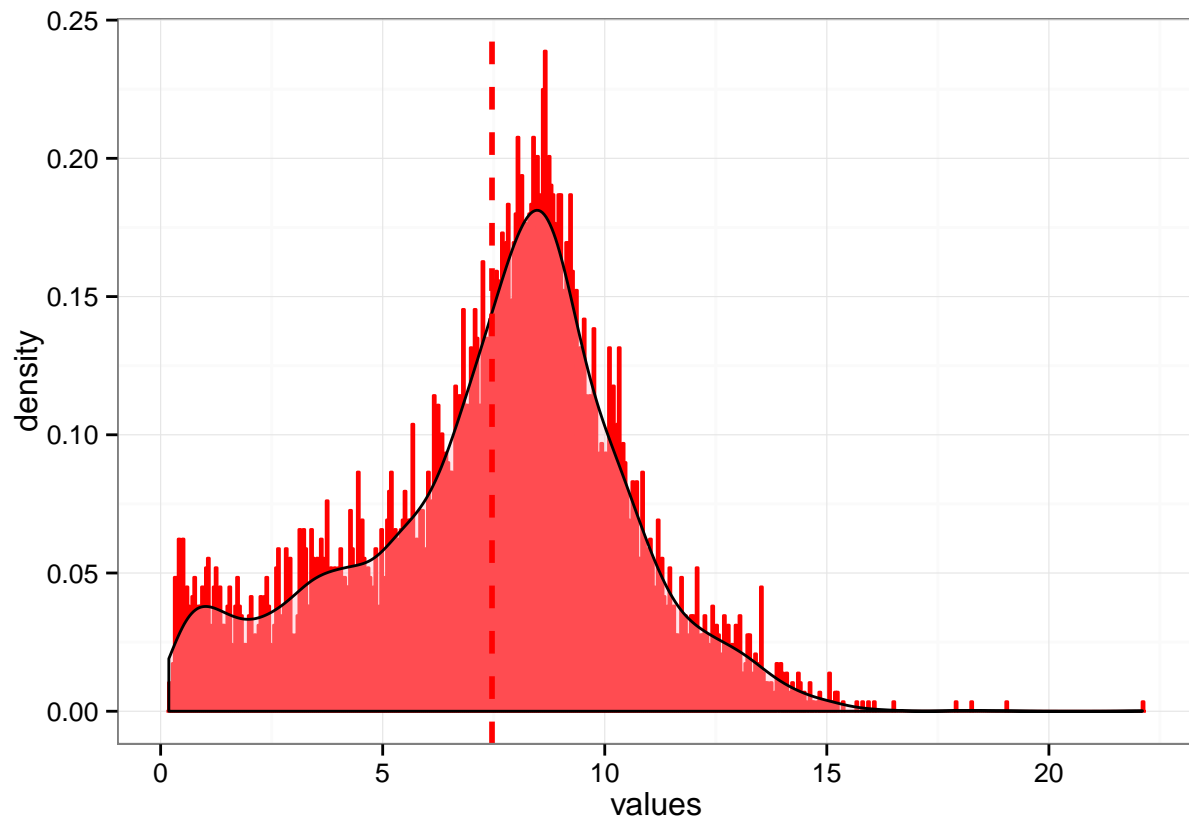
```
## $scatter
```



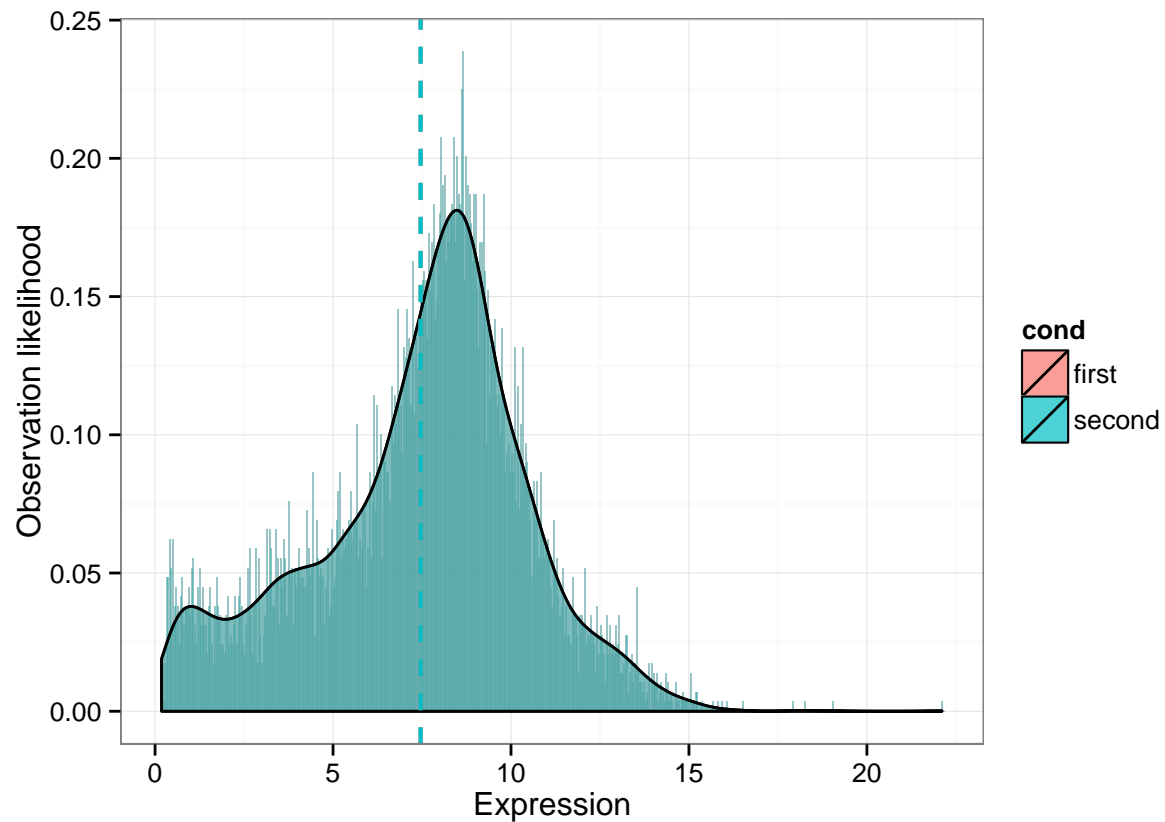
```
##
## $x_histogram
```



```
##  
## $y_histogram
```

```
##  
## $both_histogram  
## $both_histogram$plot
```



```
##
## $both_histogram$data_summary
##      first      second
## Min.   : 0.1848  Min.   : 0.1848
## 1st Qu.: 5.7021  1st Qu.: 5.7021
## Median : 7.9479  Median : 7.9479
## Mean   : 7.4612  Mean   : 7.4612
## 3rd Qu.: 9.3395  3rd Qu.: 9.3395
## Max.   :22.1079  Max.   :22.1079
##
## $both_histogram$uncor_t
##
## Pairwise comparisons using t tests with pooled SD
##
## data:  play_all$expression and play_all$cond
##
##      first
## second 1
##
## P value adjustment method: none
##
## $both_histogram$bon_t
##
## Pairwise comparisons using t tests with pooled SD
##
## data:  play_all$expression and play_all$cond
##
```

```

##          first
## second 1
##
## P value adjustment method: bonferroni
##
##
## $correlation
##
## Pearson's product-moment correlation
##
## data: df[, 1] and df[, 2]
## t = 176.5977, df = 6588, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.9043188 0.9127446
## sample estimates:
##          cor
## 0.9086241
##
##
## $lm_model
##
## Call:
## robustbase::lmrob(formula = second ~ first, data = df, method = "SMDM")
##
## Coefficients:
## (Intercept)          first
##      0.3901          0.9430
##
##
## $lm_summary
##
## Call:
## robustbase::lmrob(formula = second ~ first, data = df, method = "SMDM")
## \--> method = "SMDM"
## Residuals:
##      Min        1Q    Median        3Q       Max
## -7.39795 -0.50925  0.01641  0.51406  8.33501
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 0.390106   0.029274   13.33  <2e-16 ***
## first       0.942982   0.003743  251.90  <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Robust residual standard error: 0.9169
## Multiple R-squared:  0.9008, Adjusted R-squared:  0.9008
## Convergence in 10 IRWLS iterations
##
## Robustness weights:
##  5 observations c(236,248,745,749,3274)
##  are outliers with |weight| = 0 ( < 1.5e-05);
##  4815 weights are ~ = 1. The remaining 1770 ones are summarized as

```

```

##      Min.   1st Qu.   Median     Mean   3rd Qu.     Max.
## 0.0002502 0.4630000 0.8379000 0.7000000 0.9620000 0.9990000
## Algorithmic parameters:
##      tuning.chi1      tuning.chi2      tuning.chi3      tuning.chi4
##      -5.000e-01      1.500e+00      NA      5.000e-01
##      bb      tuning.psi1      tuning.psi2      tuning.psi3
##      5.000e-01      -5.000e-01      1.500e+00      9.500e-01
##      tuning.psi4      refine.tol      rel.tol      solve.tol
##      NA      1.000e-07      1.000e-07      1.000e-07
##      eps.outlier      eps.x warn.limit.reject warn.limit.meanrw
##      1.517e-05      4.021e-11      5.000e-01      5.000e-01
##      nResample      max.it      best.r.s      k.fast.s      k.max
##      500      50      2      1      200
##      maxit.scale      trace.lev      mts      compute.rd      numpoints
##      200      0      1000      0      10
## fast.s.large.n
##      2000
##      psi      subsampling      cov
##      "lqq"      "nonsingular"      ".vcov.w"
## compute.outlier.stats
##      "SMDM"
## seed : int(0)
##
## $lm_weights
##      1      2      3      4      5      6      7      8
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      9      10      11      12      13      14      15      16
## 1.000000 1.000000 1.000000 1.000000 1.000000 0.981876 1.000000 1.000000
##      17      18      19      20      21      22      23      24
## 1.000000 0.970669 0.732017 1.000000 1.000000 0.978505 0.767749 1.000000
##      25      26      27      28      29      30      31      32
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      33      34      35      36      37      38      39      40
## 1.000000 1.000000 1.000000 1.000000 1.000000 0.903222 0.992795 0.560788
##      41      42      43      44      45      46      47      48
## 1.000000 0.817006 0.862599 1.000000 0.572249 1.000000 0.994280 0.225051
##      49      50      51      52      53      54      55      56
## 0.948088 1.000000 1.000000 0.458766 0.339289 1.000000 1.000000 1.000000
##      57      58      59      60      61      62      63      64
## 1.000000 0.981071 1.000000 0.968071 1.000000 0.369862 1.000000 0.963679
##      65      66      67      68      69      70      71      72
## 1.000000 0.997343 1.000000 0.453131 0.962478 0.821919 0.085927 0.974636
##      73      74      75      76      77      78      79      80
## 0.982075 1.000000 0.954945 0.883269 1.000000 1.000000 0.976489 0.930194
##      81      82      83      84      85      86      87      88
## 1.000000 1.000000 0.529358 1.000000 1.000000 1.000000 1.000000 1.000000
##      89      90      91      92      93      94      95      96
## 1.000000 0.902067 0.654116 0.545754 1.000000 0.997598 1.000000 0.410659
##      97      98      99      100      101      102      103      104
## 1.000000 1.000000 1.000000 0.251558 1.000000 1.000000 1.000000 0.559135
##      105      106      107      108      109      110      111      112
## 0.241276 0.948332 0.999712 1.000000 0.203075 0.641296 1.000000 1.000000
##      113      114      115      116      117      118      119      120
## 0.777802 1.000000 0.804291 0.392833 1.000000 0.232145 1.000000 1.000000

```

##	121	122	123	124	125	126	127	128
##	1.000000	1.000000	1.000000	0.616110	1.000000	1.000000	1.000000	1.000000
##	129	130	131	132	133	134	135	136
##	0.471930	0.999998	0.785381	1.000000	1.000000	1.000000	0.926795	1.000000
##	137	138	139	140	141	142	143	144
##	1.000000	0.204550	0.166298	1.000000	0.245246	1.000000	0.897235	1.000000
##	145	146	147	148	149	150	151	152
##	0.995329	0.961312	1.000000	0.662058	0.348446	0.304357	0.754015	0.212016
##	153	154	155	156	157	158	159	160
##	0.918753	0.172338	0.802137	1.000000	0.191826	0.999976	0.852146	1.000000
##	161	162	163	164	165	166	167	168
##	1.000000	1.000000	0.931853	1.000000	1.000000	0.318360	0.339818	1.000000
##	169	170	171	172	173	174	175	176
##	0.968326	1.000000	0.807884	1.000000	0.601995	0.499783	0.994774	0.484221
##	177	178	179	180	181	182	183	184
##	0.676667	1.000000	0.525276	0.796777	1.000000	0.087207	0.773654	0.969926
##	185	186	187	188	189	190	191	192
##	0.945269	0.829445	0.911921	1.000000	1.000000	1.000000	1.000000	1.000000
##	193	194	195	196	197	198	199	200
##	0.891545	0.990273	1.000000	0.551507	1.000000	1.000000	0.945261	0.767219
##	201	202	203	204	205	206	207	208
##	0.998793	0.889380	0.971783	1.000000	1.000000	1.000000	0.930082	0.637063
##	209	210	211	212	213	214	215	216
##	1.000000	0.912686	1.000000	1.000000	0.626477	1.000000	0.951626	0.113610
##	217	218	219	220	221	222	223	224
##	0.561668	0.872823	0.320262	1.000000	0.859225	0.521199	0.770169	1.000000
##	225	226	227	228	229	230	231	232
##	0.460529	1.000000	1.000000	0.996313	1.000000	1.000000	0.997289	1.000000
##	233	234	235	236	237	238	239	240
##	1.000000	1.000000	0.276482	0.000000	0.571616	1.000000	1.000000	1.000000
##	241	242	243	244	245	246	247	248
##	1.000000	1.000000	0.516534	0.792581	0.510594	1.000000	1.000000	0.000000
##	249	250	251	252	253	254	255	256
##	0.861891	1.000000	0.779759	0.997517	1.000000	0.975974	0.851557	1.000000
##	257	258	259	260	261	262	263	264
##	1.000000	0.999993	0.930195	0.332522	1.000000	1.000000	1.000000	1.000000
##	265	266	267	268	269	270	271	272
##	0.777339	1.000000	0.802263	0.975096	0.560113	0.845200	0.705021	1.000000
##	273	274	275	276	277	278	279	280
##	0.961766	0.460356	0.874179	0.973860	1.000000	1.000000	1.000000	0.739936
##	281	282	283	284	285	286	287	288
##	0.894334	0.367790	0.968316	1.000000	0.316188	1.000000	1.000000	0.395218
##	289	290	291	292	293	294	295	296
##	0.955889	1.000000	0.582386	0.992235	1.000000	0.762799	1.000000	1.000000
##	297	298	299	300	301	302	303	304
##	0.232373	1.000000	0.542932	0.754267	0.830969	1.000000	1.000000	1.000000
##	305	306	307	308	309	310	311	312
##	1.000000	1.000000	1.000000	1.000000	0.605606	0.507448	0.907083	0.997280
##	313	314	315	316	317	318	319	320
##	0.913056	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	321	322	323	324	325	326	327	328
##	0.533331	1.000000	1.000000	0.366552	0.926265	1.000000	1.000000	0.906889
##	329	330	331	332	333	334	335	336
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.322780	1.000000	1.000000

##	337	338	339	340	341	342	343	344
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.927406	1.000000	1.000000
##	345	346	347	348	349	350	351	352
##	0.946616	1.000000	1.000000	0.310274	1.000000	0.578302	1.000000	1.000000
##	353	354	355	356	357	358	359	360
##	0.993480	0.124625	1.000000	0.288833	1.000000	1.000000	1.000000	1.000000
##	361	362	363	364	365	366	367	368
##	0.474332	1.000000	1.000000	0.925840	0.150376	1.000000	0.627846	1.000000
##	369	370	371	372	373	374	375	376
##	1.000000	1.000000	1.000000	0.964833	1.000000	1.000000	0.597514	1.000000
##	377	378	379	380	381	382	383	384
##	1.000000	0.276633	1.000000	0.364654	1.000000	1.000000	0.931186	1.000000
##	385	386	387	388	389	390	391	392
##	1.000000	1.000000	1.000000	1.000000	0.518468	0.876262	1.000000	1.000000
##	393	394	395	396	397	398	399	400
##	0.612969	0.837390	1.000000	0.999900	1.000000	0.643532	1.000000	0.951092
##	401	402	403	404	405	406	407	408
##	1.000000	1.000000	0.990645	1.000000	0.965827	0.707242	0.317925	1.000000
##	409	410	411	412	413	414	415	416
##	0.239657	1.000000	1.000000	0.965072	0.511422	1.000000	1.000000	1.000000
##	417	418	419	420	421	422	423	424
##	1.000000	1.000000	0.592278	1.000000	1.000000	1.000000	1.000000	0.795969
##	425	426	427	428	429	430	431	432
##	1.000000	0.725647	1.000000	1.000000	1.000000	1.000000	1.000000	0.433318
##	433	434	435	436	437	438	439	440
##	0.990135	1.000000	0.903009	0.553833	1.000000	1.000000	1.000000	1.000000
##	441	442	443	444	445	446	447	448
##	1.000000	1.000000	0.968690	0.329652	1.000000	0.727651	1.000000	1.000000
##	449	450	451	452	453	454	455	456
##	1.000000	1.000000	0.710564	0.500934	1.000000	1.000000	1.000000	1.000000
##	457	458	459	460	461	462	463	464
##	1.000000	1.000000	0.844165	1.000000	0.992629	1.000000	1.000000	0.121220
##	465	466	467	468	469	470	471	472
##	1.000000	0.104282	1.000000	0.863533	1.000000	1.000000	0.157442	1.000000
##	473	474	475	476	477	478	479	480
##	0.999896	0.795791	0.958532	0.568244	1.000000	0.909238	0.079953	0.940931
##	481	482	483	484	485	486	487	488
##	1.000000	0.998893	1.000000	1.000000	1.000000	0.067143	1.000000	1.000000
##	489	490	491	492	493	494	495	496
##	1.000000	0.554731	0.668748	0.767207	1.000000	1.000000	0.043811	1.000000
##	497	498	499	500	501	502	503	504
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.273664
##	505	506	507	508	509	510	511	512
##	1.000000	1.000000	0.572871	0.059468	1.000000	0.978085	0.341514	1.000000
##	513	514	515	516	517	518	519	520
##	1.000000	0.497235	0.841096	1.000000	0.723145	1.000000	1.000000	0.579530
##	521	522	523	524	525	526	527	528
##	1.000000	0.997271	1.000000	1.000000	0.817826	1.000000	0.995163	1.000000
##	529	530	531	532	533	534	535	536
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.916011	1.000000	1.000000
##	537	538	539	540	541	542	543	544
##	0.950986	0.963595	0.693101	1.000000	0.388297	0.917560	1.000000	1.000000
##	545	546	547	548	549	550	551	552
##	0.523590	0.874271	0.061295	0.274089	1.000000	0.546990	1.000000	1.000000

##	553	554	555	556	557	558	559	560
##	0.999992	0.337336	0.095888	0.999912	0.220065	0.516702	0.991410	0.783589
##	561	562	563	564	565	566	567	568
##	0.936326	0.470510	0.876846	0.461807	0.610931	1.000000	0.007579	1.000000
##	569	570	571	572	573	574	575	576
##	1.000000	0.748714	1.000000	0.383829	1.000000	1.000000	1.000000	1.000000
##	577	578	579	580	581	582	583	584
##	0.341034	1.000000	1.000000	1.000000	0.141109	1.000000	1.000000	1.000000
##	585	586	587	588	589	590	591	592
##	1.000000	0.370714	0.861643	0.324785	1.000000	1.000000	1.000000	0.983592
##	593	594	595	596	597	598	599	600
##	0.594822	1.000000	0.577323	1.000000	0.679939	1.000000	1.000000	1.000000
##	601	602	603	604	605	606	607	608
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.109545
##	609	610	611	612	613	614	615	616
##	0.270932	1.000000	0.999700	1.000000	1.000000	1.000000	0.710564	1.000000
##	617	618	619	620	621	622	623	624
##	0.044116	1.000000	1.000000	0.717670	1.000000	0.766086	0.982228	1.000000
##	625	626	627	628	629	630	631	632
##	0.557846	1.000000	1.000000	0.444901	1.000000	1.000000	0.218384	0.992539
##	633	634	635	636	637	638	639	640
##	1.000000	0.364253	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	641	642	643	644	645	646	647	648
##	1.000000	1.000000	0.998743	1.000000	1.000000	1.000000	1.000000	1.000000
##	649	650	651	652	653	654	655	656
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.996321	1.000000	1.000000
##	657	658	659	660	661	662	663	664
##	1.000000	1.000000	0.165750	0.999454	1.000000	1.000000	1.000000	1.000000
##	665	666	667	668	669	670	671	672
##	1.000000	1.000000	1.000000	1.000000	0.073341	1.000000	1.000000	0.244513
##	673	674	675	676	677	678	679	680
##	0.895727	1.000000	0.194705	1.000000	1.000000	0.823460	1.000000	1.000000
##	681	682	683	684	685	686	687	688
##	0.903692	1.000000	1.000000	0.193149	0.950288	1.000000	1.000000	1.000000
##	689	690	691	692	693	694	695	696
##	0.798946	1.000000	1.000000	1.000000	1.000000	0.278911	1.000000	0.989537
##	697	698	699	700	701	702	703	704
##	1.000000	0.471103	0.994204	0.247115	0.331937	1.000000	0.021815	1.000000
##	705	706	707	708	709	710	711	712
##	0.674856	0.802931	1.000000	0.135458	1.000000	1.000000	0.079459	1.000000
##	713	714	715	716	717	718	719	720
##	1.000000	0.244728	0.992565	1.000000	1.000000	1.000000	0.425975	1.000000
##	721	722	723	724	725	726	727	728
##	0.967770	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.034875
##	729	730	731	732	733	734	735	736
##	1.000000	1.000000	0.905188	1.000000	0.881064	0.885148	0.879239	1.000000
##	737	738	739	740	741	742	743	744
##	1.000000	1.000000	0.861628	1.000000	1.000000	1.000000	0.651154	0.924213
##	745	746	747	748	749	750	751	752
##	0.000000	0.536359	0.475329	1.000000	0.000000	1.000000	0.995893	1.000000
##	753	754	755	756	757	758	759	760
##	1.000000	1.000000	0.962137	1.000000	1.000000	0.974388	1.000000	1.000000
##	761	762	763	764	765	766	767	768
##	1.000000	1.000000	0.577149	0.978818	1.000000	0.794384	0.726071	1.000000

##	769	770	771	772	773	774	775	776
##	1.000000	0.601006	0.952755	0.284218	1.000000	1.000000	1.000000	0.368382
##	777	778	779	780	781	782	783	784
##	0.983112	1.000000	1.000000	0.362394	1.000000	1.000000	0.155354	0.833674
##	785	786	787	788	789	790	791	792
##	0.886220	0.672193	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	793	794	795	796	797	798	799	800
##	1.000000	1.000000	1.000000	0.296959	1.000000	0.987782	1.000000	0.990439
##	801	802	803	804	805	806	807	808
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.975903
##	809	810	811	812	813	814	815	816
##	1.000000	1.000000	0.460996	0.999817	1.000000	1.000000	1.000000	0.260765
##	817	818	819	820	821	822	823	824
##	0.020847	1.000000	0.045431	0.184465	1.000000	1.000000	0.973865	1.000000
##	825	826	827	828	829	830	831	832
##	0.021455	0.429228	0.820184	0.077723	0.982122	0.151460	1.000000	0.174486
##	833	834	835	836	837	838	839	840
##	0.943073	1.000000	1.000000	1.000000	1.000000	0.404991	1.000000	1.000000
##	841	842	843	844	845	846	847	848
##	0.616320	0.527196	0.827827	0.766399	0.422836	1.000000	0.058830	0.466466
##	849	850	851	852	853	854	855	856
##	1.000000	1.000000	0.845013	0.372370	0.149198	0.648448	1.000000	0.988435
##	857	858	859	860	861	862	863	864
##	0.985067	1.000000	0.240214	0.801945	1.000000	1.000000	1.000000	1.000000
##	865	866	867	868	869	870	871	872
##	0.971394	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	873	874	875	876	877	878	879	880
##	0.799486	1.000000	1.000000	0.799978	1.000000	1.000000	0.971172	1.000000
##	881	882	883	884	885	886	887	888
##	1.000000	0.328347	0.949087	1.000000	1.000000	1.000000	0.501203	1.000000
##	889	890	891	892	893	894	895	896
##	1.000000	0.489227	0.859818	0.009359	0.337221	0.260260	1.000000	1.000000
##	897	898	899	900	901	902	903	904
##	1.000000	1.000000	1.000000	0.911580	0.991583	0.751583	1.000000	1.000000
##	905	906	907	908	909	910	911	912
##	1.000000	1.000000	1.000000	0.988601	0.395540	1.000000	1.000000	1.000000
##	913	914	915	916	917	918	919	920
##	0.913023	1.000000	0.052665	1.000000	1.000000	1.000000	1.000000	0.535299
##	921	922	923	924	925	926	927	928
##	1.000000	0.921670	0.960443	1.000000	1.000000	1.000000	0.903494	0.912200
##	929	930	931	932	933	934	935	936
##	1.000000	1.000000	1.000000	1.000000	0.932159	0.823740	1.000000	1.000000
##	937	938	939	940	941	942	943	944
##	0.543615	1.000000	0.761161	1.000000	1.000000	1.000000	0.033967	1.000000
##	945	946	947	948	949	950	951	952
##	0.996662	1.000000	1.000000	0.989596	1.000000	0.979074	1.000000	0.999315
##	953	954	955	956	957	958	959	960
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.994910	0.940939	0.978731
##	961	962	963	964	965	966	967	968
##	1.000000	0.876319	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	969	970	971	972	973	974	975	976
##	0.885437	1.000000	0.948276	0.998640	0.758942	1.000000	1.000000	0.778464
##	977	978	979	980	981	982	983	984
##	0.697038	1.000000	1.000000	0.697201	0.398874	1.000000	1.000000	1.000000

##	985	986	987	988	989	990	991	992
##	0.423863	1.000000	1.000000	0.739057	1.000000	0.056832	0.980699	1.000000
##	993	994	995	996	997	998	999	1000
##	0.940109	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1001	1002	1003	1004	1005	1006	1007	1008
##	1.000000	1.000000	1.000000	0.098361	1.000000	1.000000	1.000000	1.000000
##	1009	1010	1011	1012	1013	1014	1015	1016
##	1.000000	1.000000	0.950936	1.000000	1.000000	1.000000	1.000000	0.927947
##	1017	1018	1019	1020	1021	1022	1023	1024
##	0.853089	1.000000	1.000000	1.000000	1.000000	0.775455	1.000000	1.000000
##	1025	1026	1027	1028	1029	1030	1031	1032
##	1.000000	0.364619	0.925236	0.855344	1.000000	1.000000	1.000000	1.000000
##	1033	1034	1035	1036	1037	1038	1039	1040
##	1.000000	1.000000	1.000000	0.943298	0.986608	0.260363	1.000000	1.000000
##	1041	1042	1043	1044	1045	1046	1047	1048
##	0.407341	1.000000	0.447982	0.272691	0.491297	1.000000	1.000000	1.000000
##	1049	1050	1051	1052	1053	1054	1055	1056
##	0.286969	0.826841	1.000000	0.265960	0.024769	1.000000	1.000000	1.000000
##	1057	1058	1059	1060	1061	1062	1063	1064
##	0.024267	1.000000	1.000000	1.000000	1.000000	0.947124	1.000000	1.000000
##	1065	1066	1067	1068	1069	1070	1071	1072
##	1.000000	0.941802	0.884775	1.000000	1.000000	1.000000	1.000000	1.000000
##	1073	1074	1075	1076	1077	1078	1079	1080
##	0.857103	0.233230	0.555563	1.000000	1.000000	1.000000	1.000000	0.636514
##	1081	1082	1083	1084	1085	1086	1087	1088
##	0.824098	1.000000	1.000000	1.000000	1.000000	1.000000	0.326259	1.000000
##	1089	1090	1091	1092	1093	1094	1095	1096
##	1.000000	0.106123	1.000000	0.611020	1.000000	1.000000	0.220398	1.000000
##	1097	1098	1099	1100	1101	1102	1103	1104
##	0.374006	1.000000	1.000000	1.000000	1.000000	1.000000	0.945344	1.000000
##	1105	1106	1107	1108	1109	1110	1111	1112
##	1.000000	0.891166	1.000000	1.000000	1.000000	1.000000	1.000000	0.700605
##	1113	1114	1115	1116	1117	1118	1119	1120
##	0.993936	0.747931	1.000000	1.000000	0.999991	1.000000	0.165553	1.000000
##	1121	1122	1123	1124	1125	1126	1127	1128
##	1.000000	1.000000	0.972222	1.000000	1.000000	0.236934	1.000000	1.000000
##	1129	1130	1131	1132	1133	1134	1135	1136
##	1.000000	0.740103	0.989185	1.000000	0.986619	1.000000	1.000000	1.000000
##	1137	1138	1139	1140	1141	1142	1143	1144
##	1.000000	1.000000	1.000000	0.032612	1.000000	1.000000	1.000000	1.000000
##	1145	1146	1147	1148	1149	1150	1151	1152
##	1.000000	1.000000	1.000000	0.999992	1.000000	1.000000	0.404961	1.000000
##	1153	1154	1155	1156	1157	1158	1159	1160
##	1.000000	0.996761	1.000000	1.000000	1.000000	0.266405	1.000000	1.000000
##	1161	1162	1163	1164	1165	1166	1167	1168
##	1.000000	1.000000	1.000000	1.000000	0.964035	1.000000	1.000000	1.000000
##	1169	1170	1171	1172	1173	1174	1175	1176
##	0.253278	0.566323	1.000000	0.930178	0.893622	0.333683	1.000000	0.972612
##	1177	1178	1179	1180	1181	1182	1183	1184
##	0.541232	1.000000	1.000000	0.882992	1.000000	1.000000	0.590543	1.000000
##	1185	1186	1187	1188	1189	1190	1191	1192
##	0.996183	0.247723	1.000000	0.996857	1.000000	1.000000	1.000000	0.957659
##	1193	1194	1195	1196	1197	1198	1199	1200
##	1.000000	1.000000	0.628329	0.291966	1.000000	0.952744	1.000000	1.000000

##	1201	1202	1203	1204	1205	1206	1207	1208
##	0.150666	0.996818	0.701691	0.985414	1.000000	1.000000	1.000000	1.000000
##	1209	1210	1211	1212	1213	1214	1215	1216
##	0.858431	1.000000	1.000000	1.000000	1.000000	1.000000	0.594020	1.000000
##	1217	1218	1219	1220	1221	1222	1223	1224
##	1.000000	0.562416	1.000000	1.000000	1.000000	0.578497	1.000000	0.172962
##	1225	1226	1227	1228	1229	1230	1231	1232
##	0.933390	1.000000	1.000000	1.000000	0.475840	1.000000	1.000000	1.000000
##	1233	1234	1235	1236	1237	1238	1239	1240
##	0.994824	0.990570	0.869811	1.000000	1.000000	1.000000	1.000000	0.972348
##	1241	1242	1243	1244	1245	1246	1247	1248
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.991137	1.000000	0.258254
##	1249	1250	1251	1252	1253	1254	1255	1256
##	1.000000	0.998576	0.838827	0.979167	0.822124	0.914782	0.445092	0.358834
##	1257	1258	1259	1260	1261	1262	1263	1264
##	0.978727	0.951288	0.927358	1.000000	1.000000	0.434437	1.000000	1.000000
##	1265	1266	1267	1268	1269	1270	1271	1272
##	1.000000	0.973783	1.000000	0.758135	0.287572	1.000000	1.000000	1.000000
##	1273	1274	1275	1276	1277	1278	1279	1280
##	1.000000	0.029204	0.471767	0.191631	0.507222	1.000000	0.717693	1.000000
##	1281	1282	1283	1284	1285	1286	1287	1288
##	1.000000	1.000000	1.000000	0.084474	0.171788	0.196091	1.000000	1.000000
##	1289	1290	1291	1292	1293	1294	1295	1296
##	0.852354	0.800903	0.988058	0.349873	1.000000	1.000000	1.000000	1.000000
##	1297	1298	1299	1300	1301	1302	1303	1304
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1305	1306	1307	1308	1309	1310	1311	1312
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1313	1314	1315	1316	1317	1318	1319	1320
##	0.049653	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1321	1322	1323	1324	1325	1326	1327	1328
##	0.991152	0.109274	0.070228	1.000000	1.000000	0.718232	1.000000	1.000000
##	1329	1330	1331	1332	1333	1334	1335	1336
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1337	1338	1339	1340	1341	1342	1343	1344
##	1.000000	0.261852	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1345	1346	1347	1348	1349	1350	1351	1352
##	1.000000	1.000000	1.000000	0.174011	1.000000	1.000000	0.214395	1.000000
##	1353	1354	1355	1356	1357	1358	1359	1360
##	1.000000	1.000000	0.974548	0.976184	1.000000	0.848509	1.000000	1.000000
##	1361	1362	1363	1364	1365	1366	1367	1368
##	1.000000	1.000000	0.620012	1.000000	1.000000	0.441688	1.000000	0.985713
##	1369	1370	1371	1372	1373	1374	1375	1376
##	1.000000	1.000000	1.000000	1.000000	0.999546	1.000000	0.668567	1.000000
##	1377	1378	1379	1380	1381	1382	1383	1384
##	0.997241	1.000000	1.000000	1.000000	1.000000	1.000000	0.083293	1.000000
##	1385	1386	1387	1388	1389	1390	1391	1392
##	0.980785	0.633100	1.000000	0.916136	1.000000	1.000000	0.138561	1.000000
##	1393	1394	1395	1396	1397	1398	1399	1400
##	1.000000	0.609631	0.397401	1.000000	1.000000	1.000000	1.000000	0.727446
##	1401	1402	1403	1404	1405	1406	1407	1408
##	1.000000	1.000000	1.000000	0.260781	1.000000	1.000000	0.756267	0.860682
##	1409	1410	1411	1412	1413	1414	1415	1416
##	1.000000	0.968091	0.101271	0.141208	1.000000	0.182129	1.000000	1.000000

##	1417	1418	1419	1420	1421	1422	1423	1424
##	0.162174	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.183708
##	1425	1426	1427	1428	1429	1430	1431	1432
##	1.000000	0.539165	0.124383	0.723238	1.000000	1.000000	0.830851	1.000000
##	1433	1434	1435	1436	1437	1438	1439	1440
##	1.000000	1.000000	0.999956	1.000000	1.000000	1.000000	0.970297	0.223976
##	1441	1442	1443	1444	1445	1446	1447	1448
##	0.975735	1.000000	1.000000	1.000000	0.998302	1.000000	0.918289	1.000000
##	1449	1450	1451	1452	1453	1454	1455	1456
##	1.000000	0.999192	1.000000	1.000000	1.000000	1.000000	0.945802	0.476145
##	1457	1458	1459	1460	1461	1462	1463	1464
##	0.856751	0.455039	1.000000	0.995731	0.065422	0.316549	0.502626	0.661124
##	1465	1466	1467	1468	1469	1470	1471	1472
##	1.000000	0.958094	1.000000	1.000000	0.149339	0.940135	0.767206	0.999728
##	1473	1474	1475	1476	1477	1478	1479	1480
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1481	1482	1483	1484	1485	1486	1487	1488
##	1.000000	0.819074	0.072763	0.999805	1.000000	1.000000	0.988112	0.811726
##	1489	1490	1491	1492	1493	1494	1495	1496
##	1.000000	0.193221	1.000000	0.946839	1.000000	1.000000	1.000000	1.000000
##	1497	1498	1499	1500	1501	1502	1503	1504
##	0.998694	0.601195	1.000000	1.000000	1.000000	1.000000	0.247636	1.000000
##	1505	1506	1507	1508	1509	1510	1511	1512
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.992238	0.992111
##	1513	1514	1515	1516	1517	1518	1519	1520
##	0.999723	1.000000	0.481517	1.000000	1.000000	1.000000	0.199998	0.528181
##	1521	1522	1523	1524	1525	1526	1527	1528
##	0.052848	1.000000	0.064032	1.000000	1.000000	1.000000	0.068464	1.000000
##	1529	1530	1531	1532	1533	1534	1535	1536
##	1.000000	0.010807	1.000000	0.995891	1.000000	1.000000	1.000000	0.988815
##	1537	1538	1539	1540	1541	1542	1543	1544
##	1.000000	0.182870	0.239360	1.000000	1.000000	0.745240	1.000000	1.000000
##	1545	1546	1547	1548	1549	1550	1551	1552
##	0.903053	1.000000	1.000000	0.147321	0.356863	1.000000	0.105058	1.000000
##	1553	1554	1555	1556	1557	1558	1559	1560
##	0.129623	1.000000	1.000000	0.932174	0.023573	1.000000	1.000000	1.000000
##	1561	1562	1563	1564	1565	1566	1567	1568
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1569	1570	1571	1572	1573	1574	1575	1576
##	0.996513	1.000000	0.619688	1.000000	1.000000	0.252247	1.000000	1.000000
##	1577	1578	1579	1580	1581	1582	1583	1584
##	1.000000	0.188182	1.000000	0.450771	1.000000	1.000000	0.901347	1.000000
##	1585	1586	1587	1588	1589	1590	1591	1592
##	1.000000	1.000000	0.985001	1.000000	0.139465	0.724990	0.016936	0.319882
##	1593	1594	1595	1596	1597	1598	1599	1600
##	1.000000	1.000000	1.000000	0.987886	1.000000	0.708574	0.819421	1.000000
##	1601	1602	1603	1604	1605	1606	1607	1608
##	0.974482	0.736018	1.000000	0.972719	1.000000	1.000000	1.000000	0.316823
##	1609	1610	1611	1612	1613	1614	1615	1616
##	1.000000	0.294498	1.000000	1.000000	1.000000	1.000000	0.900260	1.000000
##	1617	1618	1619	1620	1621	1622	1623	1624
##	1.000000	1.000000	1.000000	0.804809	1.000000	1.000000	1.000000	1.000000
##	1625	1626	1627	1628	1629	1630	1631	1632
##	1.000000	1.000000	0.931665	0.613450	0.695034	0.047323	1.000000	1.000000

##	1633	1634	1635	1636	1637	1638	1639	1640
##	1.000000	0.108240	1.000000	0.177821	1.000000	0.611404	1.000000	1.000000
##	1641	1642	1643	1644	1645	1646	1647	1648
##	1.000000	1.000000	1.000000	0.970098	1.000000	0.873421	1.000000	0.534257
##	1649	1650	1651	1652	1653	1654	1655	1656
##	1.000000	0.936316	1.000000	1.000000	0.247728	1.000000	0.993761	1.000000
##	1657	1658	1659	1660	1661	1662	1663	1664
##	1.000000	0.036951	1.000000	0.834052	1.000000	1.000000	1.000000	0.788281
##	1665	1666	1667	1668	1669	1670	1671	1672
##	1.000000	0.670647	0.436365	1.000000	1.000000	1.000000	1.000000	0.531106
##	1673	1674	1675	1676	1677	1678	1679	1680
##	0.795166	0.789966	1.000000	1.000000	1.000000	0.960299	0.805444	1.000000
##	1681	1682	1683	1684	1685	1686	1687	1688
##	1.000000	1.000000	0.404940	0.605754	0.309381	0.714127	1.000000	0.829984
##	1689	1690	1691	1692	1693	1694	1695	1696
##	1.000000	1.000000	0.773588	1.000000	0.494350	1.000000	1.000000	1.000000
##	1697	1698	1699	1700	1701	1702	1703	1704
##	1.000000	1.000000	1.000000	0.200641	1.000000	1.000000	1.000000	1.000000
##	1705	1706	1707	1708	1709	1710	1711	1712
##	1.000000	1.000000	1.000000	1.000000	0.107347	1.000000	1.000000	1.000000
##	1713	1714	1715	1716	1717	1718	1719	1720
##	1.000000	1.000000	1.000000	0.091838	0.013198	1.000000	1.000000	0.024989
##	1721	1722	1723	1724	1725	1726	1727	1728
##	0.999888	1.000000	1.000000	0.927805	1.000000	1.000000	0.979069	1.000000
##	1729	1730	1731	1732	1733	1734	1735	1736
##	0.327622	0.289885	0.366107	0.875179	0.999998	1.000000	1.000000	0.984520
##	1737	1738	1739	1740	1741	1742	1743	1744
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1745	1746	1747	1748	1749	1750	1751	1752
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1753	1754	1755	1756	1757	1758	1759	1760
##	1.000000	1.000000	0.947923	1.000000	1.000000	1.000000	1.000000	0.168172
##	1761	1762	1763	1764	1765	1766	1767	1768
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.995806	1.000000	1.000000
##	1769	1770	1771	1772	1773	1774	1775	1776
##	0.798668	1.000000	1.000000	1.000000	0.215997	0.759613	1.000000	1.000000
##	1777	1778	1779	1780	1781	1782	1783	1784
##	1.000000	1.000000	0.175944	1.000000	1.000000	1.000000	1.000000	1.000000
##	1785	1786	1787	1788	1789	1790	1791	1792
##	0.989713	1.000000	1.000000	1.000000	0.988736	1.000000	0.954501	1.000000
##	1793	1794	1795	1796	1797	1798	1799	1800
##	0.810055	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1801	1802	1803	1804	1805	1806	1807	1808
##	1.000000	1.000000	1.000000	0.958283	1.000000	1.000000	1.000000	0.206694
##	1809	1810	1811	1812	1813	1814	1815	1816
##	0.775905	1.000000	0.322339	1.000000	1.000000	1.000000	1.000000	0.347907
##	1817	1818	1819	1820	1821	1822	1823	1824
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.169731	1.000000	1.000000
##	1825	1826	1827	1828	1829	1830	1831	1832
##	1.000000	1.000000	0.123425	1.000000	1.000000	1.000000	1.000000	0.036880
##	1833	1834	1835	1836	1837	1838	1839	1840
##	1.000000	1.000000	1.000000	0.125537	1.000000	1.000000	1.000000	1.000000
##	1841	1842	1843	1844	1845	1846	1847	1848
##	1.000000	0.872117	1.000000	1.000000	1.000000	1.000000	0.646163	1.000000

##	1849	1850	1851	1852	1853	1854	1855	1856
##	1.000000	1.000000	1.000000	1.000000	0.471647	1.000000	0.999959	1.000000
##	1857	1858	1859	1860	1861	1862	1863	1864
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.999876	1.000000	1.000000
##	1865	1866	1867	1868	1869	1870	1871	1872
##	1.000000	1.000000	1.000000	0.932022	0.856697	1.000000	1.000000	1.000000
##	1873	1874	1875	1876	1877	1878	1879	1880
##	0.360535	1.000000	1.000000	1.000000	1.000000	0.269217	1.000000	1.000000
##	1881	1882	1883	1884	1885	1886	1887	1888
##	1.000000	0.995735	1.000000	1.000000	0.903362	1.000000	0.026345	1.000000
##	1889	1890	1891	1892	1893	1894	1895	1896
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1897	1898	1899	1900	1901	1902	1903	1904
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.267506	1.000000
##	1905	1906	1907	1908	1909	1910	1911	1912
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.637461	0.997890	0.769976
##	1913	1914	1915	1916	1917	1918	1919	1920
##	0.879321	0.334693	0.961659	1.000000	1.000000	0.292921	1.000000	1.000000
##	1921	1922	1923	1924	1925	1926	1927	1928
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.687697	1.000000	1.000000
##	1929	1930	1931	1932	1933	1934	1935	1936
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.132269	1.000000	1.000000
##	1937	1938	1939	1940	1941	1942	1943	1944
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.163592	1.000000
##	1945	1946	1947	1948	1949	1950	1951	1952
##	1.000000	0.634125	0.910648	1.000000	0.922848	1.000000	1.000000	1.000000
##	1953	1954	1955	1956	1957	1958	1959	1960
##	1.000000	1.000000	0.578612	1.000000	1.000000	0.599206	0.860348	0.506638
##	1961	1962	1963	1964	1965	1966	1967	1968
##	0.517615	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1969	1970	1971	1972	1973	1974	1975	1976
##	0.564784	1.000000	1.000000	1.000000	1.000000	1.000000	0.248137	1.000000
##	1977	1978	1979	1980	1981	1982	1983	1984
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.790915
##	1985	1986	1987	1988	1989	1990	1991	1992
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	1993	1994	1995	1996	1997	1998	1999	2000
##	1.000000	1.000000	0.867011	1.000000	0.723064	0.381398	1.000000	1.000000
##	2001	2002	2003	2004	2005	2006	2007	2008
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2009	2010	2011	2012	2013	2014	2015	2016
##	0.910406	1.000000	0.909937	0.358959	1.000000	1.000000	1.000000	0.261244
##	2017	2018	2019	2020	2021	2022	2023	2024
##	0.448687	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2025	2026	2027	2028	2029	2030	2031	2032
##	0.292763	1.000000	0.944426	1.000000	1.000000	0.632389	1.000000	0.527679
##	2033	2034	2035	2036	2037	2038	2039	2040
##	1.000000	1.000000	0.853039	1.000000	1.000000	1.000000	1.000000	1.000000
##	2041	2042	2043	2044	2045	2046	2047	2048
##	1.000000	1.000000	1.000000	0.396594	0.055325	1.000000	0.960704	1.000000
##	2049	2050	2051	2052	2053	2054	2055	2056
##	0.607160	0.374125	1.000000	0.949975	1.000000	1.000000	0.795099	1.000000
##	2057	2058	2059	2060	2061	2062	2063	2064
##	1.000000	0.383655	1.000000	1.000000	0.993187	1.000000	0.376760	1.000000

##	2065	2066	2067	2068	2069	2070	2071	2072
##	1.000000	0.164432	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2073	2074	2075	2076	2077	2078	2079	2080
##	0.435135	1.000000	1.000000	0.668281	1.000000	1.000000	0.495390	1.000000
##	2081	2082	2083	2084	2085	2086	2087	2088
##	1.000000	1.000000	0.444418	0.356709	1.000000	0.149491	1.000000	1.000000
##	2089	2090	2091	2092	2093	2094	2095	2096
##	1.000000	1.000000	1.000000	0.988602	0.327558	1.000000	1.000000	0.831467
##	2097	2098	2099	2100	2101	2102	2103	2104
##	1.000000	1.000000	0.739414	0.356594	1.000000	0.999952	1.000000	1.000000
##	2105	2106	2107	2108	2109	2110	2111	2112
##	0.828762	1.000000	1.000000	1.000000	1.000000	1.000000	0.237624	1.000000
##	2113	2114	2115	2116	2117	2118	2119	2120
##	0.966581	0.840323	0.604201	1.000000	1.000000	1.000000	1.000000	1.000000
##	2121	2122	2123	2124	2125	2126	2127	2128
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2129	2130	2131	2132	2133	2134	2135	2136
##	1.000000	0.468085	1.000000	1.000000	1.000000	1.000000	0.977259	1.000000
##	2137	2138	2139	2140	2141	2142	2143	2144
##	0.964062	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2145	2146	2147	2148	2149	2150	2151	2152
##	0.925356	0.272645	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2153	2154	2155	2156	2157	2158	2159	2160
##	1.000000	1.000000	1.000000	1.000000	0.817298	1.000000	0.860165	0.025976
##	2161	2162	2163	2164	2165	2166	2167	2168
##	0.114064	0.856255	0.042282	1.000000	1.000000	0.499116	1.000000	1.000000
##	2169	2170	2171	2172	2173	2174	2175	2176
##	1.000000	1.000000	0.348466	1.000000	1.000000	1.000000	1.000000	1.000000
##	2177	2178	2179	2180	2181	2182	2183	2184
##	1.000000	1.000000	1.000000	0.467172	0.727999	1.000000	0.916979	1.000000
##	2185	2186	2187	2188	2189	2190	2191	2192
##	1.000000	1.000000	0.146956	0.987446	1.000000	0.972571	1.000000	1.000000
##	2193	2194	2195	2196	2197	2198	2199	2200
##	1.000000	1.000000	0.689073	1.000000	1.000000	1.000000	0.999967	1.000000
##	2201	2202	2203	2204	2205	2206	2207	2208
##	1.000000	1.000000	1.000000	1.000000	0.975717	1.000000	0.337587	1.000000
##	2209	2210	2211	2212	2213	2214	2215	2216
##	1.000000	1.000000	1.000000	0.554398	1.000000	1.000000	1.000000	1.000000
##	2217	2218	2219	2220	2221	2222	2223	2224
##	1.000000	1.000000	1.000000	1.000000	0.282215	0.925309	1.000000	1.000000
##	2225	2226	2227	2228	2229	2230	2231	2232
##	1.000000	0.851694	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2233	2234	2235	2236	2237	2238	2239	2240
##	1.000000	1.000000	1.000000	0.887776	1.000000	1.000000	1.000000	0.021260
##	2241	2242	2243	2244	2245	2246	2247	2248
##	1.000000	1.000000	0.936245	1.000000	1.000000	1.000000	1.000000	1.000000
##	2249	2250	2251	2252	2253	2254	2255	2256
##	1.000000	0.845708	1.000000	1.000000	1.000000	1.000000	0.265896	1.000000
##	2257	2258	2259	2260	2261	2262	2263	2264
##	0.825693	1.000000	0.922610	1.000000	0.991589	1.000000	1.000000	1.000000
##	2265	2266	2267	2268	2269	2270	2271	2272
##	1.000000	0.147507	1.000000	1.000000	0.976453	0.999239	0.373243	0.927091
##	2273	2274	2275	2276	2277	2278	2279	2280
##	1.000000	1.000000	0.796568	1.000000	1.000000	0.959631	1.000000	1.000000

##	2281	2282	2283	2284	2285	2286	2287	2288
##	1.000000	0.445395	1.000000	1.000000	1.000000	0.992285	0.983990	1.000000
##	2289	2290	2291	2292	2293	2294	2295	2296
##	0.005538	1.000000	0.987431	0.535050	1.000000	1.000000	1.000000	1.000000
##	2297	2298	2299	2300	2301	2302	2303	2304
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.486067	1.000000	1.000000
##	2305	2306	2307	2308	2309	2310	2311	2312
##	1.000000	1.000000	1.000000	0.867766	1.000000	0.721326	1.000000	1.000000
##	2313	2314	2315	2316	2317	2318	2319	2320
##	0.947552	1.000000	1.000000	1.000000	1.000000	0.989651	0.581089	0.989252
##	2321	2322	2323	2324	2325	2326	2327	2328
##	0.615455	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2329	2330	2331	2332	2333	2334	2335	2336
##	1.000000	1.000000	0.477566	1.000000	1.000000	0.781845	1.000000	0.449363
##	2337	2338	2339	2340	2341	2342	2343	2344
##	1.000000	1.000000	0.347976	1.000000	1.000000	1.000000	1.000000	1.000000
##	2345	2346	2347	2348	2349	2350	2351	2352
##	1.000000	1.000000	0.837256	1.000000	1.000000	1.000000	0.996436	1.000000
##	2353	2354	2355	2356	2357	2358	2359	2360
##	1.000000	1.000000	1.000000	0.059413	1.000000	1.000000	1.000000	1.000000
##	2361	2362	2363	2364	2365	2366	2367	2368
##	1.000000	0.230881	1.000000	1.000000	1.000000	0.542867	0.790772	1.000000
##	2369	2370	2371	2372	2373	2374	2375	2376
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.967969	1.000000	0.926991
##	2377	2378	2379	2380	2381	2382	2383	2384
##	1.000000	1.000000	1.000000	1.000000	0.873475	1.000000	1.000000	1.000000
##	2385	2386	2387	2388	2389	2390	2391	2392
##	0.021299	1.000000	1.000000	1.000000	1.000000	0.181635	0.997656	1.000000
##	2393	2394	2395	2396	2397	2398	2399	2400
##	1.000000	0.997752	1.000000	0.387872	1.000000	1.000000	0.402074	1.000000
##	2401	2402	2403	2404	2405	2406	2407	2408
##	0.283035	0.582053	1.000000	0.980368	1.000000	1.000000	1.000000	0.582139
##	2409	2410	2411	2412	2413	2414	2415	2416
##	1.000000	1.000000	0.555363	0.852907	1.000000	0.917801	1.000000	1.000000
##	2417	2418	2419	2420	2421	2422	2423	2424
##	1.000000	1.000000	0.869587	1.000000	0.987144	0.999989	0.933861	1.000000
##	2425	2426	2427	2428	2429	2430	2431	2432
##	1.000000	1.000000	1.000000	0.583556	1.000000	1.000000	1.000000	1.000000
##	2433	2434	2435	2436	2437	2438	2439	2440
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.154227
##	2441	2442	2443	2444	2445	2446	2447	2448
##	1.000000	0.006099	1.000000	1.000000	1.000000	0.638459	1.000000	0.992002
##	2449	2450	2451	2452	2453	2454	2455	2456
##	0.187158	1.000000	0.992276	0.090695	1.000000	1.000000	0.661649	1.000000
##	2457	2458	2459	2460	2461	2462	2463	2464
##	1.000000	0.979728	1.000000	0.000470	1.000000	1.000000	1.000000	1.000000
##	2465	2466	2467	2468	2469	2470	2471	2472
##	0.438417	1.000000	1.000000	0.972625	1.000000	1.000000	1.000000	1.000000
##	2473	2474	2475	2476	2477	2478	2479	2480
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.786506	0.730755
##	2481	2482	2483	2484	2485	2486	2487	2488
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.318134
##	2489	2490	2491	2492	2493	2494	2495	2496
##	1.000000	0.947977	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

##	2497	2498	2499	2500	2501	2502	2503	2504
##	1.000000	1.000000	1.000000	0.999946	1.000000	1.000000	1.000000	1.000000
##	2505	2506	2507	2508	2509	2510	2511	2512
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2513	2514	2515	2516	2517	2518	2519	2520
##	1.000000	1.000000	0.739595	1.000000	1.000000	0.982480	1.000000	1.000000
##	2521	2522	2523	2524	2525	2526	2527	2528
##	1.000000	1.000000	1.000000	0.995228	1.000000	0.967731	0.335965	0.204286
##	2529	2530	2531	2532	2533	2534	2535	2536
##	1.000000	1.000000	1.000000	1.000000	0.842642	0.804705	1.000000	1.000000
##	2537	2538	2539	2540	2541	2542	2543	2544
##	0.838394	1.000000	0.160482	0.244759	1.000000	1.000000	0.305537	1.000000
##	2545	2546	2547	2548	2549	2550	2551	2552
##	0.536311	1.000000	1.000000	0.905842	1.000000	1.000000	1.000000	1.000000
##	2553	2554	2555	2556	2557	2558	2559	2560
##	1.000000	0.935651	0.886001	1.000000	0.999961	1.000000	1.000000	1.000000
##	2561	2562	2563	2564	2565	2566	2567	2568
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.887970	1.000000
##	2569	2570	2571	2572	2573	2574	2575	2576
##	1.000000	1.000000	0.637460	1.000000	1.000000	0.579185	1.000000	1.000000
##	2577	2578	2579	2580	2581	2582	2583	2584
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.997818	0.213723
##	2585	2586	2587	2588	2589	2590	2591	2592
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2593	2594	2595	2596	2597	2598	2599	2600
##	1.000000	1.000000	1.000000	0.996250	1.000000	1.000000	0.865703	1.000000
##	2601	2602	2603	2604	2605	2606	2607	2608
##	0.783325	1.000000	1.000000	1.000000	0.912960	1.000000	1.000000	1.000000
##	2609	2610	2611	2612	2613	2614	2615	2616
##	1.000000	0.998180	0.198453	1.000000	1.000000	0.672060	1.000000	1.000000
##	2617	2618	2619	2620	2621	2622	2623	2624
##	1.000000	0.969459	1.000000	1.000000	0.921215	0.454712	1.000000	1.000000
##	2625	2626	2627	2628	2629	2630	2631	2632
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.304226	0.044942	1.000000
##	2633	2634	2635	2636	2637	2638	2639	2640
##	1.000000	0.228586	1.000000	1.000000	1.000000	0.979910	0.982900	1.000000
##	2641	2642	2643	2644	2645	2646	2647	2648
##	1.000000	1.000000	0.849386	1.000000	0.176446	1.000000	0.080971	1.000000
##	2649	2650	2651	2652	2653	2654	2655	2656
##	1.000000	0.939928	1.000000	1.000000	0.414840	0.999348	0.999242	1.000000
##	2657	2658	2659	2660	2661	2662	2663	2664
##	1.000000	0.974931	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2665	2666	2667	2668	2669	2670	2671	2672
##	0.795130	1.000000	1.000000	1.000000	0.996958	1.000000	1.000000	1.000000
##	2673	2674	2675	2676	2677	2678	2679	2680
##	0.942662	1.000000	1.000000	0.854206	1.000000	0.683823	1.000000	0.273279
##	2681	2682	2683	2684	2685	2686	2687	2688
##	0.353598	1.000000	1.000000	1.000000	1.000000	0.978386	1.000000	1.000000
##	2689	2690	2691	2692	2693	2694	2695	2696
##	1.000000	0.999004	1.000000	1.000000	1.000000	1.000000	0.991312	1.000000
##	2697	2698	2699	2700	2701	2702	2703	2704
##	1.000000	0.642787	1.000000	1.000000	1.000000	0.924109	1.000000	0.865897
##	2705	2706	2707	2708	2709	2710	2711	2712
##	1.000000	1.000000	0.932968	1.000000	1.000000	0.855979	0.973308	1.000000

##	2713	2714	2715	2716	2717	2718	2719	2720
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2721	2722	2723	2724	2725	2726	2727	2728
##	1.000000	1.000000	0.908450	0.928285	1.000000	1.000000	1.000000	0.999382
##	2729	2730	2731	2732	2733	2734	2735	2736
##	1.000000	0.838950	1.000000	1.000000	1.000000	0.873852	1.000000	1.000000
##	2737	2738	2739	2740	2741	2742	2743	2744
##	1.000000	1.000000	1.000000	0.905590	1.000000	0.993352	1.000000	1.000000
##	2745	2746	2747	2748	2749	2750	2751	2752
##	1.000000	0.993557	1.000000	0.137117	1.000000	0.998678	0.999915	1.000000
##	2753	2754	2755	2756	2757	2758	2759	2760
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.209785	1.000000
##	2761	2762	2763	2764	2765	2766	2767	2768
##	0.961509	0.964375	1.000000	1.000000	0.997420	1.000000	1.000000	1.000000
##	2769	2770	2771	2772	2773	2774	2775	2776
##	1.000000	1.000000	0.231079	0.903215	1.000000	1.000000	1.000000	0.999493
##	2777	2778	2779	2780	2781	2782	2783	2784
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.709577	1.000000	1.000000
##	2785	2786	2787	2788	2789	2790	2791	2792
##	1.000000	1.000000	1.000000	1.000000	0.887986	1.000000	0.998419	1.000000
##	2793	2794	2795	2796	2797	2798	2799	2800
##	1.000000	0.135709	1.000000	1.000000	0.051151	1.000000	0.916320	1.000000
##	2801	2802	2803	2804	2805	2806	2807	2808
##	0.999978	1.000000	1.000000	1.000000	1.000000	0.132826	0.262613	1.000000
##	2809	2810	2811	2812	2813	2814	2815	2816
##	1.000000	1.000000	1.000000	0.924845	0.567962	1.000000	1.000000	0.477700
##	2817	2818	2819	2820	2821	2822	2823	2824
##	0.998950	1.000000	0.987343	1.000000	1.000000	0.989213	1.000000	1.000000
##	2825	2826	2827	2828	2829	2830	2831	2832
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2833	2834	2835	2836	2837	2838	2839	2840
##	0.665778	1.000000	1.000000	1.000000	0.714145	1.000000	1.000000	0.946999
##	2841	2842	2843	2844	2845	2846	2847	2848
##	0.221879	0.997855	1.000000	1.000000	1.000000	1.000000	1.000000	0.955490
##	2849	2850	2851	2852	2853	2854	2855	2856
##	1.000000	0.989283	1.000000	1.000000	1.000000	1.000000	0.500226	0.999990
##	2857	2858	2859	2860	2861	2862	2863	2864
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2865	2866	2867	2868	2869	2870	2871	2872
##	0.893966	1.000000	1.000000	0.992197	1.000000	1.000000	1.000000	1.000000
##	2873	2874	2875	2876	2877	2878	2879	2880
##	0.881101	1.000000	1.000000	1.000000	0.995998	1.000000	1.000000	1.000000
##	2881	2882	2883	2884	2885	2886	2887	2888
##	1.000000	0.293482	1.000000	0.388370	1.000000	1.000000	1.000000	0.784813
##	2889	2890	2891	2892	2893	2894	2895	2896
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.948399	1.000000
##	2897	2898	2899	2900	2901	2902	2903	2904
##	0.722283	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.648562
##	2905	2906	2907	2908	2909	2910	2911	2912
##	0.999337	1.000000	1.000000	1.000000	1.000000	0.695531	0.960857	1.000000
##	2913	2914	2915	2916	2917	2918	2919	2920
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2921	2922	2923	2924	2925	2926	2927	2928
##	0.987495	0.917685	0.880841	1.000000	0.850297	1.000000	1.000000	1.000000

##	2929	2930	2931	2932	2933	2934	2935	2936
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.762001	1.000000	1.000000
##	2937	2938	2939	2940	2941	2942	2943	2944
##	1.000000	0.767976	1.000000	1.000000	0.952862	1.000000	1.000000	0.991650
##	2945	2946	2947	2948	2949	2950	2951	2952
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2953	2954	2955	2956	2957	2958	2959	2960
##	1.000000	0.973587	1.000000	1.000000	1.000000	1.000000	1.000000	0.703035
##	2961	2962	2963	2964	2965	2966	2967	2968
##	1.000000	1.000000	0.929231	1.000000	1.000000	0.758718	1.000000	0.748276
##	2969	2970	2971	2972	2973	2974	2975	2976
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2977	2978	2979	2980	2981	2982	2983	2984
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2985	2986	2987	2988	2989	2990	2991	2992
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	2993	2994	2995	2996	2997	2998	2999	3000
##	0.993668	1.000000	0.208604	1.000000	1.000000	1.000000	1.000000	0.286895
##	3001	3002	3003	3004	3005	3006	3007	3008
##	1.000000	1.000000	0.920675	0.681462	1.000000	1.000000	0.894198	1.000000
##	3009	3010	3011	3012	3013	3014	3015	3016
##	1.000000	0.891652	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3017	3018	3019	3020	3021	3022	3023	3024
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.942337	1.000000	1.000000
##	3025	3026	3027	3028	3029	3030	3031	3032
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.314178	1.000000
##	3033	3034	3035	3036	3037	3038	3039	3040
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.999586	0.548501	0.883776
##	3041	3042	3043	3044	3045	3046	3047	3048
##	1.000000	1.000000	0.336575	1.000000	1.000000	0.986446	1.000000	0.999781
##	3049	3050	3051	3052	3053	3054	3055	3056
##	0.865662	1.000000	1.000000	1.000000	1.000000	1.000000	0.362725	1.000000
##	3057	3058	3059	3060	3061	3062	3063	3064
##	1.000000	1.000000	1.000000	0.376116	1.000000	0.909877	1.000000	1.000000
##	3065	3066	3067	3068	3069	3070	3071	3072
##	1.000000	1.000000	0.377823	0.845970	1.000000	1.000000	1.000000	0.938261
##	3073	3074	3075	3076	3077	3078	3079	3080
##	0.900487	1.000000	1.000000	0.131629	1.000000	1.000000	1.000000	1.000000
##	3081	3082	3083	3084	3085	3086	3087	3088
##	0.177593	0.116235	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3089	3090	3091	3092	3093	3094	3095	3096
##	1.000000	1.000000	1.000000	0.882348	1.000000	1.000000	1.000000	1.000000
##	3097	3098	3099	3100	3101	3102	3103	3104
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.773001	0.999491	1.000000
##	3105	3106	3107	3108	3109	3110	3111	3112
##	1.000000	0.772377	1.000000	1.000000	1.000000	0.983878	1.000000	1.000000
##	3113	3114	3115	3116	3117	3118	3119	3120
##	1.000000	1.000000	1.000000	0.962354	1.000000	1.000000	1.000000	1.000000
##	3121	3122	3123	3124	3125	3126	3127	3128
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.989489	1.000000	1.000000
##	3129	3130	3131	3132	3133	3134	3135	3136
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.989969	0.996958	1.000000
##	3137	3138	3139	3140	3141	3142	3143	3144
##	0.680723	1.000000	1.000000	1.000000	0.999700	1.000000	1.000000	1.000000

##	3145	3146	3147	3148	3149	3150	3151	3152
##	0.984985	1.000000	0.999999	1.000000	1.000000	0.664515	0.934036	0.262125
##	3153	3154	3155	3156	3157	3158	3159	3160
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.993517	1.000000
##	3161	3162	3163	3164	3165	3166	3167	3168
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.963119	1.000000	1.000000
##	3169	3170	3171	3172	3173	3174	3175	3176
##	1.000000	1.000000	1.000000	1.000000	0.850033	1.000000	0.909673	0.998623
##	3177	3178	3179	3180	3181	3182	3183	3184
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.845222	1.000000	0.984369
##	3185	3186	3187	3188	3189	3190	3191	3192
##	0.911084	1.000000	0.976108	1.000000	1.000000	1.000000	1.000000	1.000000
##	3193	3194	3195	3196	3197	3198	3199	3200
##	0.888689	1.000000	1.000000	1.000000	0.989344	1.000000	1.000000	0.793759
##	3201	3202	3203	3204	3205	3206	3207	3208
##	1.000000	1.000000	1.000000	0.206440	1.000000	1.000000	1.000000	1.000000
##	3209	3210	3211	3212	3213	3214	3215	3216
##	0.878423	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3217	3218	3219	3220	3221	3222	3223	3224
##	1.000000	1.000000	0.949925	0.287114	0.708913	1.000000	1.000000	1.000000
##	3225	3226	3227	3228	3229	3230	3231	3232
##	1.000000	1.000000	0.997959	1.000000	1.000000	1.000000	1.000000	1.000000
##	3233	3234	3235	3236	3237	3238	3239	3240
##	1.000000	0.999980	0.997061	1.000000	1.000000	1.000000	1.000000	1.000000
##	3241	3242	3243	3244	3245	3246	3247	3248
##	0.287062	0.720021	1.000000	1.000000	1.000000	0.145892	1.000000	1.000000
##	3249	3250	3251	3252	3253	3254	3255	3256
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.257333
##	3257	3258	3259	3260	3261	3262	3263	3264
##	0.994469	1.000000	0.022003	1.000000	0.997642	1.000000	1.000000	1.000000
##	3265	3266	3267	3268	3269	3270	3271	3272
##	1.000000	1.000000	0.967680	0.148535	1.000000	1.000000	1.000000	1.000000
##	3273	3274	3275	3276	3277	3278	3279	3280
##	1.000000	0.000000	1.000000	0.998516	0.997517	1.000000	1.000000	0.494801
##	3281	3282	3283	3284	3285	3286	3287	3288
##	1.000000	1.000000	0.981784	1.000000	1.000000	1.000000	0.643754	1.000000
##	3289	3290	3291	3292	3293	3294	3295	3296
##	0.990769	1.000000	1.000000	1.000000	1.000000	0.075392	1.000000	1.000000
##	3297	3298	3299	3300	3301	3302	3303	3304
##	1.000000	1.000000	1.000000	0.445275	0.710825	0.714506	1.000000	1.000000
##	3305	3306	3307	3308	3309	3310	3311	3312
##	1.000000	1.000000	0.771162	0.138677	1.000000	0.990310	1.000000	1.000000
##	3313	3314	3315	3316	3317	3318	3319	3320
##	1.000000	1.000000	0.768911	1.000000	1.000000	0.007012	1.000000	1.000000
##	3321	3322	3323	3324	3325	3326	3327	3328
##	0.995702	1.000000	1.000000	0.772806	1.000000	1.000000	1.000000	1.000000
##	3329	3330	3331	3332	3333	3334	3335	3336
##	1.000000	0.997932	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3337	3338	3339	3340	3341	3342	3343	3344
##	0.960294	1.000000	1.000000	0.124725	1.000000	0.186441	1.000000	1.000000
##	3345	3346	3347	3348	3349	3350	3351	3352
##	1.000000	1.000000	0.951976	1.000000	0.868978	1.000000	1.000000	1.000000
##	3353	3354	3355	3356	3357	3358	3359	3360
##	1.000000	1.000000	1.000000	0.970342	1.000000	1.000000	1.000000	1.000000

##	3361	3362	3363	3364	3365	3366	3367	3368
##	0.031849	1.000000	1.000000	1.000000	1.000000	1.000000	0.985920	0.023923
##	3369	3370	3371	3372	3373	3374	3375	3376
##	1.000000	0.993320	0.161736	1.000000	1.000000	1.000000	0.996975	1.000000
##	3377	3378	3379	3380	3381	3382	3383	3384
##	1.000000	0.810832	0.636235	0.801129	1.000000	1.000000	1.000000	1.000000
##	3385	3386	3387	3388	3389	3390	3391	3392
##	1.000000	1.000000	0.962453	1.000000	1.000000	0.012666	1.000000	1.000000
##	3393	3394	3395	3396	3397	3398	3399	3400
##	1.000000	1.000000	1.000000	1.000000	0.976738	1.000000	1.000000	1.000000
##	3401	3402	3403	3404	3405	3406	3407	3408
##	1.000000	0.003881	1.000000	1.000000	1.000000	1.000000	0.976793	0.635749
##	3409	3410	3411	3412	3413	3414	3415	3416
##	1.000000	1.000000	1.000000	1.000000	0.996293	1.000000	0.560330	0.912249
##	3417	3418	3419	3420	3421	3422	3423	3424
##	1.000000	1.000000	0.873740	0.998963	1.000000	1.000000	0.857298	1.000000
##	3425	3426	3427	3428	3429	3430	3431	3432
##	0.821027	1.000000	0.948699	1.000000	1.000000	1.000000	1.000000	0.992255
##	3433	3434	3435	3436	3437	3438	3439	3440
##	1.000000	0.757809	1.000000	0.874431	0.989188	0.656741	1.000000	0.832774
##	3441	3442	3443	3444	3445	3446	3447	3448
##	0.981769	1.000000	1.000000	0.819285	1.000000	1.000000	1.000000	1.000000
##	3449	3450	3451	3452	3453	3454	3455	3456
##	0.978070	0.830788	1.000000	0.999992	1.000000	1.000000	1.000000	1.000000
##	3457	3458	3459	3460	3461	3462	3463	3464
##	1.000000	0.999977	0.144023	0.999987	1.000000	1.000000	1.000000	1.000000
##	3465	3466	3467	3468	3469	3470	3471	3472
##	1.000000	1.000000	0.000250	1.000000	0.793508	1.000000	0.867806	0.734673
##	3473	3474	3475	3476	3477	3478	3479	3480
##	1.000000	0.976492	1.000000	1.000000	1.000000	0.982603	1.000000	1.000000
##	3481	3482	3483	3484	3485	3486	3487	3488
##	0.996864	0.983211	1.000000	0.970044	1.000000	1.000000	1.000000	1.000000
##	3489	3490	3491	3492	3493	3494	3495	3496
##	0.938651	1.000000	0.974121	1.000000	1.000000	1.000000	1.000000	0.218750
##	3497	3498	3499	3500	3501	3502	3503	3504
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.200951	0.007387	1.000000
##	3505	3506	3507	3508	3509	3510	3511	3512
##	0.999489	0.938471	1.000000	0.982226	1.000000	1.000000	0.843362	1.000000
##	3513	3514	3515	3516	3517	3518	3519	3520
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.992736
##	3521	3522	3523	3524	3525	3526	3527	3528
##	1.000000	0.911116	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3529	3530	3531	3532	3533	3534	3535	3536
##	1.000000	0.247667	1.000000	1.000000	1.000000	0.688754	1.000000	0.185267
##	3537	3538	3539	3540	3541	3542	3543	3544
##	0.894448	1.000000	0.379565	1.000000	1.000000	1.000000	1.000000	1.000000
##	3545	3546	3547	3548	3549	3550	3551	3552
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.068338
##	3553	3554	3555	3556	3557	3558	3559	3560
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.327316	1.000000
##	3561	3562	3563	3564	3565	3566	3567	3568
##	0.220088	0.967516	0.983389	1.000000	1.000000	1.000000	0.454827	1.000000
##	3569	3570	3571	3572	3573	3574	3575	3576
##	0.803837	0.997064	1.000000	0.933337	0.815318	0.913329	1.000000	1.000000

##	3577	3578	3579	3580	3581	3582	3583	3584
##	1.000000	0.221817	1.000000	1.000000	1.000000	1.000000	0.809672	1.000000
##	3585	3586	3587	3588	3589	3590	3591	3592
##	0.994188	1.000000	1.000000	0.627432	1.000000	1.000000	1.000000	1.000000
##	3593	3594	3595	3596	3597	3598	3599	3600
##	1.000000	0.087302	1.000000	0.376301	0.998909	1.000000	1.000000	1.000000
##	3601	3602	3603	3604	3605	3606	3607	3608
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.313566	1.000000	0.957618
##	3609	3610	3611	3612	3613	3614	3615	3616
##	0.196527	0.776145	1.000000	0.950198	1.000000	0.493707	1.000000	1.000000
##	3617	3618	3619	3620	3621	3622	3623	3624
##	0.893905	1.000000	1.000000	1.000000	1.000000	0.998993	1.000000	1.000000
##	3625	3626	3627	3628	3629	3630	3631	3632
##	1.000000	0.893904	0.847865	0.047380	1.000000	1.000000	1.000000	1.000000
##	3633	3634	3635	3636	3637	3638	3639	3640
##	0.388734	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.057311
##	3641	3642	3643	3644	3645	3646	3647	3648
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.043171	0.168443	1.000000
##	3649	3650	3651	3652	3653	3654	3655	3656
##	1.000000	1.000000	1.000000	0.611811	1.000000	1.000000	1.000000	1.000000
##	3657	3658	3659	3660	3661	3662	3663	3664
##	1.000000	1.000000	0.066815	1.000000	1.000000	1.000000	0.366439	1.000000
##	3665	3666	3667	3668	3669	3670	3671	3672
##	0.151932	1.000000	0.066465	1.000000	1.000000	1.000000	1.000000	1.000000
##	3673	3674	3675	3676	3677	3678	3679	3680
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.634728	1.000000
##	3681	3682	3683	3684	3685	3686	3687	3688
##	1.000000	0.750023	0.788576	1.000000	1.000000	1.000000	1.000000	1.000000
##	3689	3690	3691	3692	3693	3694	3695	3696
##	1.000000	1.000000	1.000000	0.901386	1.000000	1.000000	0.344608	1.000000
##	3697	3698	3699	3700	3701	3702	3703	3704
##	1.000000	0.968213	1.000000	1.000000	0.999868	1.000000	1.000000	1.000000
##	3705	3706	3707	3708	3709	3710	3711	3712
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.740816	0.444267
##	3713	3714	3715	3716	3717	3718	3719	3720
##	1.000000	1.000000	1.000000	0.884178	1.000000	0.552482	1.000000	1.000000
##	3721	3722	3723	3724	3725	3726	3727	3728
##	0.985893	1.000000	1.000000	1.000000	0.741447	1.000000	0.977968	1.000000
##	3729	3730	3731	3732	3733	3734	3735	3736
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.500517	1.000000
##	3737	3738	3739	3740	3741	3742	3743	3744
##	1.000000	1.000000	1.000000	0.936338	0.984695	0.700310	1.000000	1.000000
##	3745	3746	3747	3748	3749	3750	3751	3752
##	1.000000	1.000000	0.881210	1.000000	1.000000	1.000000	1.000000	1.000000
##	3753	3754	3755	3756	3757	3758	3759	3760
##	0.148717	1.000000	1.000000	1.000000	0.067303	0.657986	1.000000	1.000000
##	3761	3762	3763	3764	3765	3766	3767	3768
##	0.967631	1.000000	0.704922	1.000000	1.000000	1.000000	1.000000	1.000000
##	3769	3770	3771	3772	3773	3774	3775	3776
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3777	3778	3779	3780	3781	3782	3783	3784
##	0.339770	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3785	3786	3787	3788	3789	3790	3791	3792
##	0.560938	1.000000	1.000000	0.251447	1.000000	1.000000	1.000000	1.000000

##	3793	3794	3795	3796	3797	3798	3799	3800
##	1.000000	0.092138	1.000000	1.000000	1.000000	1.000000	1.000000	0.964722
##	3801	3802	3803	3804	3805	3806	3807	3808
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3809	3810	3811	3812	3813	3814	3815	3816
##	1.000000	1.000000	1.000000	0.086299	0.552379	1.000000	1.000000	1.000000
##	3817	3818	3819	3820	3821	3822	3823	3824
##	1.000000	0.616054	1.000000	1.000000	1.000000	1.000000	0.106371	1.000000
##	3825	3826	3827	3828	3829	3830	3831	3832
##	1.000000	1.000000	1.000000	0.285074	1.000000	1.000000	1.000000	0.029092
##	3833	3834	3835	3836	3837	3838	3839	3840
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.951457	1.000000
##	3841	3842	3843	3844	3845	3846	3847	3848
##	1.000000	0.145601	1.000000	1.000000	1.000000	1.000000	1.000000	0.266417
##	3849	3850	3851	3852	3853	3854	3855	3856
##	0.021375	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.079589
##	3857	3858	3859	3860	3861	3862	3863	3864
##	0.149144	1.000000	1.000000	0.998070	1.000000	0.321621	1.000000	1.000000
##	3865	3866	3867	3868	3869	3870	3871	3872
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3873	3874	3875	3876	3877	3878	3879	3880
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.144050	0.269004	1.000000
##	3881	3882	3883	3884	3885	3886	3887	3888
##	1.000000	1.000000	0.082502	1.000000	1.000000	1.000000	0.069814	1.000000
##	3889	3890	3891	3892	3893	3894	3895	3896
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	3897	3898	3899	3900	3901	3902	3903	3904
##	0.998846	1.000000	1.000000	1.000000	1.000000	0.978294	1.000000	0.393508
##	3905	3906	3907	3908	3909	3910	3911	3912
##	1.000000	0.056573	1.000000	1.000000	0.976418	0.246813	1.000000	1.000000
##	3913	3914	3915	3916	3917	3918	3919	3920
##	1.000000	1.000000	1.000000	0.969217	1.000000	1.000000	1.000000	1.000000
##	3921	3922	3923	3924	3925	3926	3927	3928
##	0.886723	1.000000	0.984011	1.000000	1.000000	1.000000	1.000000	1.000000
##	3929	3930	3931	3932	3933	3934	3935	3936
##	1.000000	1.000000	0.128203	1.000000	0.830591	1.000000	0.999999	0.293649
##	3937	3938	3939	3940	3941	3942	3943	3944
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.989440	1.000000	1.000000
##	3945	3946	3947	3948	3949	3950	3951	3952
##	1.000000	1.000000	0.194293	0.997362	1.000000	1.000000	1.000000	1.000000
##	3953	3954	3955	3956	3957	3958	3959	3960
##	1.000000	1.000000	1.000000	1.000000	0.113078	1.000000	1.000000	1.000000
##	3961	3962	3963	3964	3965	3966	3967	3968
##	1.000000	0.125445	1.000000	1.000000	0.490822	1.000000	1.000000	1.000000
##	3969	3970	3971	3972	3973	3974	3975	3976
##	0.824137	0.422274	0.222698	0.228676	0.926230	1.000000	0.994425	1.000000
##	3977	3978	3979	3980	3981	3982	3983	3984
##	1.000000	1.000000	1.000000	1.000000	0.021919	0.253367	1.000000	1.000000
##	3985	3986	3987	3988	3989	3990	3991	3992
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.859103
##	3993	3994	3995	3996	3997	3998	3999	4000
##	0.474603	0.070548	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4001	4002	4003	4004	4005	4006	4007	4008
##	1.000000	1.000000	1.000000	0.716482	1.000000	1.000000	1.000000	1.000000

##	4009	4010	4011	4012	4013	4014	4015	4016
##	1.000000	0.802149	1.000000	0.992023	1.000000	0.301316	0.790142	0.095300
##	4017	4018	4019	4020	4021	4022	4023	4024
##	1.000000	1.000000	0.989852	0.966521	1.000000	1.000000	0.829315	1.000000
##	4025	4026	4027	4028	4029	4030	4031	4032
##	1.000000	0.028464	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4033	4034	4035	4036	4037	4038	4039	4040
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.979440	0.882370	1.000000
##	4041	4042	4043	4044	4045	4046	4047	4048
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.933025	1.000000	0.346095
##	4049	4050	4051	4052	4053	4054	4055	4056
##	1.000000	1.000000	1.000000	0.684305	1.000000	0.999639	0.999386	1.000000
##	4057	4058	4059	4060	4061	4062	4063	4064
##	0.812362	1.000000	1.000000	1.000000	0.710153	1.000000	1.000000	1.000000
##	4065	4066	4067	4068	4069	4070	4071	4072
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.926001	1.000000	1.000000
##	4073	4074	4075	4076	4077	4078	4079	4080
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.993053
##	4081	4082	4083	4084	4085	4086	4087	4088
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.667209	1.000000
##	4089	4090	4091	4092	4093	4094	4095	4096
##	1.000000	1.000000	0.946596	1.000000	1.000000	1.000000	0.486457	1.000000
##	4097	4098	4099	4100	4101	4102	4103	4104
##	1.000000	0.715313	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4105	4106	4107	4108	4109	4110	4111	4112
##	1.000000	0.600858	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4113	4114	4115	4116	4117	4118	4119	4120
##	1.000000	1.000000	1.000000	0.999120	0.427285	0.956113	0.708711	1.000000
##	4121	4122	4123	4124	4125	4126	4127	4128
##	1.000000	0.749092	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4129	4130	4131	4132	4133	4134	4135	4136
##	1.000000	1.000000	0.385865	1.000000	1.000000	1.000000	1.000000	1.000000
##	4137	4138	4139	4140	4141	4142	4143	4144
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.896285
##	4145	4146	4147	4148	4149	4150	4151	4152
##	1.000000	1.000000	1.000000	0.997893	0.563505	1.000000	0.687190	1.000000
##	4153	4154	4155	4156	4157	4158	4159	4160
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.999315	1.000000
##	4161	4162	4163	4164	4165	4166	4167	4168
##	0.977124	1.000000	0.154756	1.000000	1.000000	1.000000	1.000000	1.000000
##	4169	4170	4171	4172	4173	4174	4175	4176
##	1.000000	0.921735	0.991636	1.000000	1.000000	0.992161	0.753986	1.000000
##	4177	4178	4179	4180	4181	4182	4183	4184
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.988209	1.000000	1.000000
##	4185	4186	4187	4188	4189	4190	4191	4192
##	1.000000	1.000000	0.974873	0.128175	1.000000	1.000000	1.000000	1.000000
##	4193	4194	4195	4196	4197	4198	4199	4200
##	0.871809	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4201	4202	4203	4204	4205	4206	4207	4208
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4209	4210	4211	4212	4213	4214	4215	4216
##	0.615888	1.000000	1.000000	0.100086	1.000000	0.427240	1.000000	1.000000
##	4217	4218	4219	4220	4221	4222	4223	4224
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.361251	1.000000

##	4225	4226	4227	4228	4229	4230	4231	4232
##	0.944888	1.000000	0.998442	1.000000	0.453258	1.000000	1.000000	1.000000
##	4233	4234	4235	4236	4237	4238	4239	4240
##	1.000000	1.000000	0.215795	1.000000	1.000000	1.000000	1.000000	0.084002
##	4241	4242	4243	4244	4245	4246	4247	4248
##	1.000000	1.000000	0.626068	0.987664	1.000000	1.000000	1.000000	1.000000
##	4249	4250	4251	4252	4253	4254	4255	4256
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.960371	1.000000
##	4257	4258	4259	4260	4261	4262	4263	4264
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4265	4266	4267	4268	4269	4270	4271	4272
##	1.000000	1.000000	0.990655	1.000000	1.000000	1.000000	1.000000	1.000000
##	4273	4274	4275	4276	4277	4278	4279	4280
##	1.000000	0.996740	0.997973	1.000000	1.000000	0.063977	0.083619	1.000000
##	4281	4282	4283	4284	4285	4286	4287	4288
##	1.000000	1.000000	1.000000	0.999909	1.000000	1.000000	1.000000	1.000000
##	4289	4290	4291	4292	4293	4294	4295	4296
##	1.000000	1.000000	0.589350	1.000000	1.000000	0.149931	1.000000	1.000000
##	4297	4298	4299	4300	4301	4302	4303	4304
##	0.959358	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4305	4306	4307	4308	4309	4310	4311	4312
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4313	4314	4315	4316	4317	4318	4319	4320
##	1.000000	1.000000	1.000000	0.408083	1.000000	1.000000	1.000000	1.000000
##	4321	4322	4323	4324	4325	4326	4327	4328
##	1.000000	1.000000	1.000000	0.805895	1.000000	1.000000	0.481673	1.000000
##	4329	4330	4331	4332	4333	4334	4335	4336
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4337	4338	4339	4340	4341	4342	4343	4344
##	1.000000	1.000000	1.000000	1.000000	0.841644	1.000000	1.000000	1.000000
##	4345	4346	4347	4348	4349	4350	4351	4352
##	1.000000	0.756519	1.000000	1.000000	1.000000	1.000000	0.917106	1.000000
##	4353	4354	4355	4356	4357	4358	4359	4360
##	0.276357	1.000000	1.000000	1.000000	0.998287	1.000000	1.000000	1.000000
##	4361	4362	4363	4364	4365	4366	4367	4368
##	0.980662	1.000000	1.000000	1.000000	0.984796	1.000000	1.000000	1.000000
##	4369	4370	4371	4372	4373	4374	4375	4376
##	1.000000	1.000000	0.780513	1.000000	0.905617	0.998526	0.469654	1.000000
##	4377	4378	4379	4380	4381	4382	4383	4384
##	1.000000	0.392758	0.957426	0.717412	1.000000	1.000000	1.000000	1.000000
##	4385	4386	4387	4388	4389	4390	4391	4392
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.254073	0.000636	0.999990
##	4393	4394	4395	4396	4397	4398	4399	4400
##	1.000000	1.000000	0.641861	1.000000	1.000000	1.000000	1.000000	1.000000
##	4401	4402	4403	4404	4405	4406	4407	4408
##	1.000000	1.000000	1.000000	1.000000	0.988379	0.549071	0.434985	1.000000
##	4409	4410	4411	4412	4413	4414	4415	4416
##	0.449772	0.980809	0.999927	1.000000	1.000000	1.000000	1.000000	0.845773
##	4417	4418	4419	4420	4421	4422	4423	4424
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.369820	1.000000
##	4425	4426	4427	4428	4429	4430	4431	4432
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.633720	0.928715	1.000000
##	4433	4434	4435	4436	4437	4438	4439	4440
##	1.000000	1.000000	1.000000	0.968534	1.000000	0.848132	1.000000	1.000000

##	4441	4442	4443	4444	4445	4446	4447	4448
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.144752
##	4449	4450	4451	4452	4453	4454	4455	4456
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4457	4458	4459	4460	4461	4462	4463	4464
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.330364	0.906919
##	4465	4466	4467	4468	4469	4470	4471	4472
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.992699
##	4473	4474	4475	4476	4477	4478	4479	4480
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.816474
##	4481	4482	4483	4484	4485	4486	4487	4488
##	0.959998	1.000000	1.000000	0.990388	1.000000	1.000000	1.000000	1.000000
##	4489	4490	4491	4492	4493	4494	4495	4496
##	1.000000	0.959458	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4497	4498	4499	4500	4501	4502	4503	4504
##	1.000000	1.000000	0.997480	1.000000	0.928928	1.000000	1.000000	1.000000
##	4505	4506	4507	4508	4509	4510	4511	4512
##	1.000000	0.765869	1.000000	1.000000	1.000000	1.000000	1.000000	0.997645
##	4513	4514	4515	4516	4517	4518	4519	4520
##	0.699803	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4521	4522	4523	4524	4525	4526	4527	4528
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.769297
##	4529	4530	4531	4532	4533	4534	4535	4536
##	1.000000	1.000000	0.348968	1.000000	1.000000	1.000000	1.000000	1.000000
##	4537	4538	4539	4540	4541	4542	4543	4544
##	1.000000	1.000000	0.994966	1.000000	0.892824	0.940135	1.000000	1.000000
##	4545	4546	4547	4548	4549	4550	4551	4552
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4553	4554	4555	4556	4557	4558	4559	4560
##	1.000000	0.959564	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4561	4562	4563	4564	4565	4566	4567	4568
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4569	4570	4571	4572	4573	4574	4575	4576
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4577	4578	4579	4580	4581	4582	4583	4584
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4585	4586	4587	4588	4589	4590	4591	4592
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4593	4594	4595	4596	4597	4598	4599	4600
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.936889	1.000000
##	4601	4602	4603	4604	4605	4606	4607	4608
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.985727
##	4609	4610	4611	4612	4613	4614	4615	4616
##	1.000000	1.000000	1.000000	0.981200	1.000000	1.000000	1.000000	1.000000
##	4617	4618	4619	4620	4621	4622	4623	4624
##	0.968691	1.000000	1.000000	1.000000	0.988073	1.000000	1.000000	1.000000
##	4625	4626	4627	4628	4629	4630	4631	4632
##	1.000000	1.000000	1.000000	1.000000	0.843502	1.000000	1.000000	1.000000
##	4633	4634	4635	4636	4637	4638	4639	4640
##	1.000000	1.000000	1.000000	1.000000	0.932405	1.000000	0.533706	1.000000
##	4641	4642	4643	4644	4645	4646	4647	4648
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.651089	1.000000	1.000000
##	4649	4650	4651	4652	4653	4654	4655	4656
##	1.000000	1.000000	1.000000	0.983485	0.929634	1.000000	0.991780	1.000000

##	4657	4658	4659	4660	4661	4662	4663	4664
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4665	4666	4667	4668	4669	4670	4671	4672
##	1.000000	1.000000	0.976874	0.999167	1.000000	1.000000	1.000000	1.000000
##	4673	4674	4675	4676	4677	4678	4679	4680
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4681	4682	4683	4684	4685	4686	4687	4688
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4689	4690	4691	4692	4693	4694	4695	4696
##	1.000000	0.989816	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4697	4698	4699	4700	4701	4702	4703	4704
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.950643
##	4705	4706	4707	4708	4709	4710	4711	4712
##	1.000000	0.821786	1.000000	1.000000	1.000000	1.000000	1.000000	0.882851
##	4713	4714	4715	4716	4717	4718	4719	4720
##	1.000000	1.000000	0.826751	1.000000	1.000000	1.000000	1.000000	1.000000
##	4721	4722	4723	4724	4725	4726	4727	4728
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.949003	0.651477	1.000000
##	4729	4730	4731	4732	4733	4734	4735	4736
##	1.000000	1.000000	0.874168	0.997347	1.000000	1.000000	0.999994	1.000000
##	4737	4738	4739	4740	4741	4742	4743	4744
##	1.000000	0.958442	1.000000	0.804068	1.000000	0.804881	0.756567	1.000000
##	4745	4746	4747	4748	4749	4750	4751	4752
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.924229	1.000000
##	4753	4754	4755	4756	4757	4758	4759	4760
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.879202	1.000000
##	4761	4762	4763	4764	4765	4766	4767	4768
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4769	4770	4771	4772	4773	4774	4775	4776
##	0.987010	1.000000	1.000000	0.869067	1.000000	1.000000	1.000000	1.000000
##	4777	4778	4779	4780	4781	4782	4783	4784
##	0.789110	1.000000	1.000000	1.000000	0.990090	1.000000	1.000000	1.000000
##	4785	4786	4787	4788	4789	4790	4791	4792
##	0.842891	1.000000	0.610258	0.943276	0.671460	1.000000	1.000000	1.000000
##	4793	4794	4795	4796	4797	4798	4799	4800
##	1.000000	1.000000	1.000000	1.000000	0.049092	1.000000	0.999907	1.000000
##	4801	4802	4803	4804	4805	4806	4807	4808
##	0.861325	1.000000	1.000000	1.000000	1.000000	1.000000	0.866187	0.971916
##	4809	4810	4811	4812	4813	4814	4815	4816
##	1.000000	0.939970	1.000000	1.000000	0.946264	1.000000	1.000000	1.000000
##	4817	4818	4819	4820	4821	4822	4823	4824
##	0.983543	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4825	4826	4827	4828	4829	4830	4831	4832
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4833	4834	4835	4836	4837	4838	4839	4840
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4841	4842	4843	4844	4845	4846	4847	4848
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4849	4850	4851	4852	4853	4854	4855	4856
##	0.883742	1.000000	0.999984	1.000000	1.000000	0.988205	0.987872	1.000000
##	4857	4858	4859	4860	4861	4862	4863	4864
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.732412
##	4865	4866	4867	4868	4869	4870	4871	4872
##	0.945239	1.000000	0.994842	1.000000	1.000000	1.000000	0.931507	1.000000

##	4873	4874	4875	4876	4877	4878	4879	4880
##	1.000000	1.000000	0.342141	0.984581	1.000000	1.000000	0.978518	1.000000
##	4881	4882	4883	4884	4885	4886	4887	4888
##	1.000000	1.000000	1.000000	0.865705	1.000000	1.000000	1.000000	0.999414
##	4889	4890	4891	4892	4893	4894	4895	4896
##	0.966995	0.860898	1.000000	1.000000	1.000000	1.000000	0.987022	1.000000
##	4897	4898	4899	4900	4901	4902	4903	4904
##	1.000000	0.783770	0.999932	0.724692	1.000000	1.000000	1.000000	1.000000
##	4905	4906	4907	4908	4909	4910	4911	4912
##	1.000000	0.936094	1.000000	1.000000	0.669954	1.000000	0.980654	1.000000
##	4913	4914	4915	4916	4917	4918	4919	4920
##	0.948810	1.000000	0.938134	1.000000	1.000000	1.000000	1.000000	0.977772
##	4921	4922	4923	4924	4925	4926	4927	4928
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.927680	1.000000	1.000000
##	4929	4930	4931	4932	4933	4934	4935	4936
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.995787	1.000000
##	4937	4938	4939	4940	4941	4942	4943	4944
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.997359	0.941620	0.955815
##	4945	4946	4947	4948	4949	4950	4951	4952
##	1.000000	1.000000	1.000000	1.000000	0.898427	1.000000	1.000000	1.000000
##	4953	4954	4955	4956	4957	4958	4959	4960
##	1.000000	1.000000	1.000000	0.998045	1.000000	1.000000	1.000000	1.000000
##	4961	4962	4963	4964	4965	4966	4967	4968
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	4969	4970	4971	4972	4973	4974	4975	4976
##	1.000000	1.000000	0.901534	1.000000	1.000000	0.737352	1.000000	1.000000
##	4977	4978	4979	4980	4981	4982	4983	4984
##	1.000000	1.000000	0.988941	0.992202	1.000000	1.000000	1.000000	0.891454
##	4985	4986	4987	4988	4989	4990	4991	4992
##	1.000000	0.982890	1.000000	1.000000	0.999965	1.000000	1.000000	1.000000
##	4993	4994	4995	4996	4997	4998	4999	5000
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5001	5002	5003	5004	5005	5006	5007	5008
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.990536	1.000000	1.000000
##	5009	5010	5011	5012	5013	5014	5015	5016
##	1.000000	0.919372	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5017	5018	5019	5020	5021	5022	5023	5024
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5025	5026	5027	5028	5029	5030	5031	5032
##	1.000000	1.000000	1.000000	1.000000	0.996775	1.000000	1.000000	1.000000
##	5033	5034	5035	5036	5037	5038	5039	5040
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5041	5042	5043	5044	5045	5046	5047	5048
##	1.000000	1.000000	0.999978	1.000000	0.900327	1.000000	1.000000	0.936016
##	5049	5050	5051	5052	5053	5054	5055	5056
##	1.000000	1.000000	1.000000	1.000000	0.868560	1.000000	1.000000	1.000000
##	5057	5058	5059	5060	5061	5062	5063	5064
##	1.000000	0.913422	1.000000	1.000000	1.000000	1.000000	0.998394	1.000000
##	5065	5066	5067	5068	5069	5070	5071	5072
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5073	5074	5075	5076	5077	5078	5079	5080
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.696718	1.000000	1.000000
##	5081	5082	5083	5084	5085	5086	5087	5088
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.973607	1.000000	1.000000

##	5089	5090	5091	5092	5093	5094	5095	5096
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5097	5098	5099	5100	5101	5102	5103	5104
##	0.996793	0.177593	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5105	5106	5107	5108	5109	5110	5111	5112
##	0.987895	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5113	5114	5115	5116	5117	5118	5119	5120
##	0.997891	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5121	5122	5123	5124	5125	5126	5127	5128
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5129	5130	5131	5132	5133	5134	5135	5136
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5137	5138	5139	5140	5141	5142	5143	5144
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5145	5146	5147	5148	5149	5150	5151	5152
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5153	5154	5155	5156	5157	5158	5159	5160
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.985753
##	5161	5162	5163	5164	5165	5166	5167	5168
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5169	5170	5171	5172	5173	5174	5175	5176
##	1.000000	1.000000	0.964909	1.000000	1.000000	1.000000	1.000000	0.980838
##	5177	5178	5179	5180	5181	5182	5183	5184
##	1.000000	1.000000	0.943891	1.000000	1.000000	1.000000	0.973378	1.000000
##	5185	5186	5187	5188	5189	5190	5191	5192
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.998807
##	5193	5194	5195	5196	5197	5198	5199	5200
##	1.000000	0.978565	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5201	5202	5203	5204	5205	5206	5207	5208
##	1.000000	1.000000	1.000000	0.980982	1.000000	0.997792	1.000000	1.000000
##	5209	5210	5211	5212	5213	5214	5215	5216
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5217	5218	5219	5220	5221	5222	5223	5224
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.996192
##	5225	5226	5227	5228	5229	5230	5231	5232
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.925788	0.994318
##	5233	5234	5235	5236	5237	5238	5239	5240
##	1.000000	1.000000	1.000000	1.000000	0.937590	1.000000	1.000000	1.000000
##	5241	5242	5243	5244	5245	5246	5247	5248
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5249	5250	5251	5252	5253	5254	5255	5256
##	1.000000	0.947853	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5257	5258	5259	5260	5261	5262	5263	5264
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.980562
##	5265	5266	5267	5268	5269	5270	5271	5272
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.882066
##	5273	5274	5275	5276	5277	5278	5279	5280
##	1.000000	1.000000	1.000000	0.939543	1.000000	1.000000	1.000000	1.000000
##	5281	5282	5283	5284	5285	5286	5287	5288
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.977259	1.000000
##	5289	5290	5291	5292	5293	5294	5295	5296
##	1.000000	1.000000	0.934068	1.000000	1.000000	1.000000	0.896483	1.000000
##	5297	5298	5299	5300	5301	5302	5303	5304
##	0.505825	1.000000	1.000000	0.930452	1.000000	1.000000	0.990523	1.000000

##	5305	5306	5307	5308	5309	5310	5311	5312
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5313	5314	5315	5316	5317	5318	5319	5320
##	0.981393	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5321	5322	5323	5324	5325	5326	5327	5328
##	1.000000	1.000000	1.000000	0.498240	1.000000	0.943307	0.920617	1.000000
##	5329	5330	5331	5332	5333	5334	5335	5336
##	1.000000	0.985929	1.000000	0.999554	1.000000	1.000000	1.000000	1.000000
##	5337	5338	5339	5340	5341	5342	5343	5344
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5345	5346	5347	5348	5349	5350	5351	5352
##	1.000000	0.873464	1.000000	1.000000	1.000000	1.000000	0.947593	1.000000
##	5353	5354	5355	5356	5357	5358	5359	5360
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.766175	1.000000	0.981842
##	5361	5362	5363	5364	5365	5366	5367	5368
##	1.000000	1.000000	0.345264	1.000000	1.000000	1.000000	0.945284	1.000000
##	5369	5370	5371	5372	5373	5374	5375	5376
##	0.988164	1.000000	1.000000	1.000000	0.880233	1.000000	1.000000	0.984983
##	5377	5378	5379	5380	5381	5382	5383	5384
##	1.000000	1.000000	0.919294	1.000000	1.000000	1.000000	1.000000	1.000000
##	5385	5386	5387	5388	5389	5390	5391	5392
##	1.000000	1.000000	0.936883	0.993987	1.000000	1.000000	0.975274	1.000000
##	5393	5394	5395	5396	5397	5398	5399	5400
##	1.000000	0.962148	1.000000	1.000000	1.000000	0.996731	1.000000	0.676426
##	5401	5402	5403	5404	5405	5406	5407	5408
##	1.000000	0.999966	0.566861	1.000000	1.000000	1.000000	1.000000	1.000000
##	5409	5410	5411	5412	5413	5414	5415	5416
##	1.000000	1.000000	0.911390	0.734278	1.000000	1.000000	1.000000	0.997137
##	5417	5418	5419	5420	5421	5422	5423	5424
##	1.000000	0.932928	1.000000	0.840842	0.858289	0.952675	1.000000	1.000000
##	5425	5426	5427	5428	5429	5430	5431	5432
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.997054	1.000000
##	5433	5434	5435	5436	5437	5438	5439	5440
##	1.000000	1.000000	0.943569	0.893258	0.998263	0.998318	1.000000	1.000000
##	5441	5442	5443	5444	5445	5446	5447	5448
##	0.982917	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5449	5450	5451	5452	5453	5454	5455	5456
##	1.000000	1.000000	1.000000	0.874940	1.000000	1.000000	1.000000	1.000000
##	5457	5458	5459	5460	5461	5462	5463	5464
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.996677	1.000000
##	5465	5466	5467	5468	5469	5470	5471	5472
##	1.000000	0.745847	1.000000	1.000000	1.000000	1.000000	0.971486	1.000000
##	5473	5474	5475	5476	5477	5478	5479	5480
##	1.000000	1.000000	1.000000	1.000000	0.802157	1.000000	1.000000	1.000000
##	5481	5482	5483	5484	5485	5486	5487	5488
##	0.996157	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5489	5490	5491	5492	5493	5494	5495	5496
##	1.000000	1.000000	1.000000	1.000000	0.989620	1.000000	0.773999	1.000000
##	5497	5498	5499	5500	5501	5502	5503	5504
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5505	5506	5507	5508	5509	5510	5511	5512
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.893782
##	5513	5514	5515	5516	5517	5518	5519	5520
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

##	5521	5522	5523	5524	5525	5526	5527	5528
##	1.000000	1.000000	1.000000	1.000000	0.922213	1.000000	1.000000	1.000000
##	5529	5530	5531	5532	5533	5534	5535	5536
##	0.576454	1.000000	1.000000	0.829325	1.000000	1.000000	1.000000	0.993024
##	5537	5538	5539	5540	5541	5542	5543	5544
##	0.866867	0.761876	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5545	5546	5547	5548	5549	5550	5551	5552
##	1.000000	1.000000	1.000000	0.920458	1.000000	1.000000	1.000000	1.000000
##	5553	5554	5555	5556	5557	5558	5559	5560
##	1.000000	0.944900	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5561	5562	5563	5564	5565	5566	5567	5568
##	1.000000	1.000000	1.000000	0.731099	1.000000	1.000000	1.000000	1.000000
##	5569	5570	5571	5572	5573	5574	5575	5576
##	1.000000	1.000000	1.000000	0.998346	1.000000	1.000000	1.000000	1.000000
##	5577	5578	5579	5580	5581	5582	5583	5584
##	1.000000	0.991132	1.000000	0.717790	0.777740	1.000000	0.969835	1.000000
##	5585	5586	5587	5588	5589	5590	5591	5592
##	0.998344	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.966233
##	5593	5594	5595	5596	5597	5598	5599	5600
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5601	5602	5603	5604	5605	5606	5607	5608
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5609	5610	5611	5612	5613	5614	5615	5616
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.752218	1.000000
##	5617	5618	5619	5620	5621	5622	5623	5624
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.482152	1.000000	1.000000
##	5625	5626	5627	5628	5629	5630	5631	5632
##	0.962149	1.000000	1.000000	1.000000	0.281399	1.000000	0.984657	1.000000
##	5633	5634	5635	5636	5637	5638	5639	5640
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5641	5642	5643	5644	5645	5646	5647	5648
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.947338
##	5649	5650	5651	5652	5653	5654	5655	5656
##	0.990966	0.932730	1.000000	1.000000	1.000000	1.000000	1.000000	0.996151
##	5657	5658	5659	5660	5661	5662	5663	5664
##	0.353686	1.000000	1.000000	0.691689	1.000000	1.000000	1.000000	1.000000
##	5665	5666	5667	5668	5669	5670	5671	5672
##	1.000000	1.000000	1.000000	1.000000	0.999989	1.000000	1.000000	1.000000
##	5673	5674	5675	5676	5677	5678	5679	5680
##	0.982867	1.000000	1.000000	1.000000	0.997064	1.000000	1.000000	1.000000
##	5681	5682	5683	5684	5685	5686	5687	5688
##	1.000000	1.000000	0.907328	1.000000	1.000000	1.000000	1.000000	1.000000
##	5689	5690	5691	5692	5693	5694	5695	5696
##	1.000000	1.000000	1.000000	0.991728	0.595983	1.000000	1.000000	1.000000
##	5697	5698	5699	5700	5701	5702	5703	5704
##	0.985377	1.000000	1.000000	1.000000	1.000000	1.000000	0.940829	1.000000
##	5705	5706	5707	5708	5709	5710	5711	5712
##	0.994734	0.953553	1.000000	1.000000	0.962432	1.000000	1.000000	1.000000
##	5713	5714	5715	5716	5717	5718	5719	5720
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.991916	1.000000	1.000000
##	5721	5722	5723	5724	5725	5726	5727	5728
##	1.000000	1.000000	0.993508	1.000000	1.000000	1.000000	1.000000	1.000000
##	5729	5730	5731	5732	5733	5734	5735	5736
##	1.000000	1.000000	1.000000	1.000000	0.999149	1.000000	1.000000	1.000000

##	5737	5738	5739	5740	5741	5742	5743	5744
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.918335	0.910065
##	5745	5746	5747	5748	5749	5750	5751	5752
##	1.000000	1.000000	1.000000	0.914834	1.000000	1.000000	1.000000	1.000000
##	5753	5754	5755	5756	5757	5758	5759	5760
##	0.735542	1.000000	0.980172	1.000000	1.000000	1.000000	0.990733	0.903445
##	5761	5762	5763	5764	5765	5766	5767	5768
##	1.000000	1.000000	1.000000	0.917033	1.000000	1.000000	0.994930	1.000000
##	5769	5770	5771	5772	5773	5774	5775	5776
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.979942
##	5777	5778	5779	5780	5781	5782	5783	5784
##	1.000000	1.000000	1.000000	1.000000	0.880681	1.000000	1.000000	1.000000
##	5785	5786	5787	5788	5789	5790	5791	5792
##	1.000000	0.858078	1.000000	1.000000	1.000000	1.000000	0.814000	1.000000
##	5793	5794	5795	5796	5797	5798	5799	5800
##	1.000000	1.000000	1.000000	0.999905	0.176914	1.000000	0.929273	1.000000
##	5801	5802	5803	5804	5805	5806	5807	5808
##	1.000000	1.000000	0.752173	1.000000	1.000000	1.000000	1.000000	1.000000
##	5809	5810	5811	5812	5813	5814	5815	5816
##	1.000000	1.000000	0.953854	1.000000	1.000000	1.000000	1.000000	0.977750
##	5817	5818	5819	5820	5821	5822	5823	5824
##	1.000000	1.000000	0.993354	1.000000	0.387884	1.000000	1.000000	1.000000
##	5825	5826	5827	5828	5829	5830	5831	5832
##	1.000000	1.000000	1.000000	0.918461	1.000000	0.762971	0.956610	1.000000
##	5833	5834	5835	5836	5837	5838	5839	5840
##	1.000000	0.977207	1.000000	0.919120	1.000000	1.000000	1.000000	1.000000
##	5841	5842	5843	5844	5845	5846	5847	5848
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.882354	1.000000	1.000000
##	5849	5850	5851	5852	5853	5854	5855	5856
##	1.000000	1.000000	1.000000	1.000000	0.981384	1.000000	1.000000	1.000000
##	5857	5858	5859	5860	5861	5862	5863	5864
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.999937	0.978835
##	5865	5866	5867	5868	5869	5870	5871	5872
##	0.910340	1.000000	1.000000	1.000000	0.731064	1.000000	1.000000	0.990449
##	5873	5874	5875	5876	5877	5878	5879	5880
##	1.000000	1.000000	1.000000	0.999897	1.000000	1.000000	1.000000	1.000000
##	5881	5882	5883	5884	5885	5886	5887	5888
##	0.999503	0.652303	1.000000	1.000000	0.957628	1.000000	1.000000	1.000000
##	5889	5890	5891	5892	5893	5894	5895	5896
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5897	5898	5899	5900	5901	5902	5903	5904
##	1.000000	1.000000	0.997001	0.986912	1.000000	1.000000	1.000000	1.000000
##	5905	5906	5907	5908	5909	5910	5911	5912
##	0.936395	1.000000	1.000000	1.000000	0.725165	1.000000	1.000000	1.000000
##	5913	5914	5915	5916	5917	5918	5919	5920
##	1.000000	1.000000	1.000000	1.000000	0.988857	1.000000	1.000000	1.000000
##	5921	5922	5923	5924	5925	5926	5927	5928
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	5929	5930	5931	5932	5933	5934	5935	5936
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.915230	0.722269
##	5937	5938	5939	5940	5941	5942	5943	5944
##	1.000000	1.000000	0.776552	0.758835	1.000000	0.355759	1.000000	0.974193
##	5945	5946	5947	5948	5949	5950	5951	5952
##	0.907972	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.911438

##	5953	5954	5955	5956	5957	5958	5959	5960
##	0.815519	0.966218	1.000000	1.000000	0.999896	1.000000	1.000000	0.996732
##	5961	5962	5963	5964	5965	5966	5967	5968
##	1.000000	0.521710	0.263136	1.000000	0.979295	1.000000	1.000000	0.350661
##	5969	5970	5971	5972	5973	5974	5975	5976
##	0.773842	1.000000	1.000000	0.999975	1.000000	0.922548	1.000000	1.000000
##	5977	5978	5979	5980	5981	5982	5983	5984
##	0.995366	1.000000	1.000000	0.989403	1.000000	1.000000	1.000000	1.000000
##	5985	5986	5987	5988	5989	5990	5991	5992
##	1.000000	1.000000	1.000000	1.000000	0.975284	1.000000	0.999330	0.997435
##	5993	5994	5995	5996	5997	5998	5999	6000
##	1.000000	1.000000	1.000000	0.860302	0.942917	1.000000	1.000000	1.000000
##	6001	6002	6003	6004	6005	6006	6007	6008
##	0.725999	0.911596	0.999207	0.995591	1.000000	1.000000	1.000000	1.000000
##	6009	6010	6011	6012	6013	6014	6015	6016
##	0.737482	1.000000	1.000000	1.000000	1.000000	0.917201	1.000000	1.000000
##	6017	6018	6019	6020	6021	6022	6023	6024
##	1.000000	1.000000	0.884048	1.000000	1.000000	0.959980	1.000000	1.000000
##	6025	6026	6027	6028	6029	6030	6031	6032
##	0.898105	0.955147	0.999480	0.900204	1.000000	1.000000	1.000000	0.872429
##	6033	6034	6035	6036	6037	6038	6039	6040
##	0.967016	0.816416	1.000000	0.761751	0.993543	1.000000	0.921882	0.879544
##	6041	6042	6043	6044	6045	6046	6047	6048
##	0.964748	1.000000	0.855541	1.000000	0.993660	1.000000	1.000000	1.000000
##	6049	6050	6051	6052	6053	6054	6055	6056
##	0.965978	1.000000	1.000000	0.692657	0.990307	1.000000	1.000000	1.000000
##	6057	6058	6059	6060	6061	6062	6063	6064
##	1.000000	0.931513	0.996472	1.000000	0.881389	0.783198	0.987009	0.914655
##	6065	6066	6067	6068	6069	6070	6071	6072
##	1.000000	0.984765	0.999697	0.594953	1.000000	1.000000	0.915831	0.399096
##	6073	6074	6075	6076	6077	6078	6079	6080
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.999328
##	6081	6082	6083	6084	6085	6086	6087	6088
##	1.000000	1.000000	1.000000	1.000000	0.881681	0.958557	1.000000	1.000000
##	6089	6090	6091	6092	6093	6094	6095	6096
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.931119	1.000000
##	6097	6098	6099	6100	6101	6102	6103	6104
##	1.000000	0.748346	0.919755	1.000000	0.876822	0.923915	1.000000	1.000000
##	6105	6106	6107	6108	6109	6110	6111	6112
##	0.980990	0.889778	1.000000	1.000000	0.979497	0.985959	1.000000	1.000000
##	6113	6114	6115	6116	6117	6118	6119	6120
##	0.859161	1.000000	1.000000	1.000000	1.000000	1.000000	0.951479	1.000000
##	6121	6122	6123	6124	6125	6126	6127	6128
##	1.000000	1.000000	0.898895	1.000000	0.983513	1.000000	0.954763	0.299920
##	6129	6130	6131	6132	6133	6134	6135	6136
##	1.000000	0.994428	0.998930	1.000000	0.862344	1.000000	0.891015	1.000000
##	6137	6138	6139	6140	6141	6142	6143	6144
##	1.000000	0.881142	1.000000	0.993166	1.000000	1.000000	1.000000	0.959744
##	6145	6146	6147	6148	6149	6150	6151	6152
##	0.563002	1.000000	1.000000	0.914584	1.000000	1.000000	1.000000	1.000000
##	6153	6154	6155	6156	6157	6158	6159	6160
##	0.671072	0.945752	1.000000	0.378614	0.375738	0.891751	0.999872	0.928229
##	6161	6162	6163	6164	6165	6166	6167	6168
##	1.000000	0.708209	0.996012	1.000000	0.956242	1.000000	0.810856	1.000000

##	6169	6170	6171	6172	6173	6174	6175	6176
##	0.984462	0.962801	1.000000	0.577701	0.998243	0.932222	0.979220	1.000000
##	6177	6178	6179	6180	6181	6182	6183	6184
##	1.000000	1.000000	0.948511	1.000000	0.988407	1.000000	1.000000	1.000000
##	6185	6186	6187	6188	6189	6190	6191	6192
##	1.000000	1.000000	1.000000	0.607040	1.000000	0.993908	0.994523	0.545774
##	6193	6194	6195	6196	6197	6198	6199	6200
##	1.000000	0.979546	1.000000	1.000000	1.000000	0.523178	0.990092	1.000000
##	6201	6202	6203	6204	6205	6206	6207	6208
##	1.000000	1.000000	1.000000	0.585950	1.000000	0.358859	0.918894	1.000000
##	6209	6210	6211	6212	6213	6214	6215	6216
##	0.999573	1.000000	1.000000	1.000000	1.000000	0.821577	1.000000	1.000000
##	6217	6218	6219	6220	6221	6222	6223	6224
##	1.000000	0.767188	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	6225	6226	6227	6228	6229	6230	6231	6232
##	0.999519	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
##	6233	6234	6235	6236	6237	6238	6239	6240
##	1.000000	1.000000	1.000000	0.998902	0.991124	1.000000	1.000000	1.000000
##	6241	6242	6243	6244	6245	6246	6247	6248
##	1.000000	1.000000	0.980446	0.964097	0.482550	0.999941	0.886834	1.000000
##	6249	6250	6251	6252	6253	6254	6255	6256
##	1.000000	0.957181	1.000000	1.000000	1.000000	0.847683	1.000000	1.000000
##	6257	6258	6259	6260	6261	6262	6263	6264
##	0.882274	1.000000	1.000000	1.000000	0.977611	0.996824	1.000000	0.842463
##	6265	6266	6267	6268	6269	6270	6271	6272
##	1.000000	0.934009	1.000000	1.000000	0.896753	1.000000	1.000000	0.853681
##	6273	6274	6275	6276	6277	6278	6279	6280
##	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	0.956497	1.000000
##	6281	6282	6283	6284	6285	6286	6287	6288
##	0.960299	0.999829	1.000000	0.847285	1.000000	1.000000	1.000000	1.000000
##	6289	6290	6291	6292	6293	6294	6295	6296
##	0.733048	1.000000	1.000000	0.989745	1.000000	1.000000	0.958898	1.000000
##	6297	6298	6299	6300	6301	6302	6303	6304
##	1.000000	0.871750	1.000000	1.000000	1.000000	1.000000	0.978246	1.000000
##	6305	6306	6307	6308	6309	6310	6311	6312
##	1.000000	0.952583	1.000000	0.914293	1.000000	1.000000	1.000000	0.964527
##	6313	6314	6315	6316	6317	6318	6319	6320
##	1.000000	0.624146	1.000000	1.000000	1.000000	1.000000	0.992117	1.000000
##	6321	6322	6323	6324	6325	6326	6327	6328
##	1.000000	1.000000	1.000000	1.000000	1.000000	0.997971	0.983929	1.000000
##	6329	6330	6331	6332	6333	6334	6335	6336
##	0.848793	1.000000	1.000000	0.992460	1.000000	1.000000	0.961471	1.000000
##	6337	6338	6339	6340	6341	6342	6343	6344
##	1.000000	0.861071	1.000000	0.867004	0.845082	0.826921	1.000000	0.754683
##	6345	6346	6347	6348	6349	6350	6351	6352
##	1.000000	0.999864	1.000000	1.000000	0.754334	1.000000	1.000000	1.000000
##	6353	6354	6355	6356	6357	6358	6359	6360
##	1.000000	0.999844	0.998504	0.980164	1.000000	1.000000	1.000000	1.000000
##	6361	6362	6363	6364	6365	6366	6367	6368
##	1.000000	1.000000	0.953078	1.000000	0.987910	0.999447	1.000000	0.940281
##	6369	6370	6371	6372	6373	6374	6375	6376
##	1.000000	0.995375	1.000000	1.000000	0.895899	1.000000	0.967878	0.997995
##	6377	6378	6379	6380	6381	6382	6383	6384
##	0.999084	1.000000	1.000000	0.979963	1.000000	1.000000	1.000000	0.969725

```

##      6385      6386      6387      6388      6389      6390      6391      6392
## 1.000000 1.000000 1.000000 1.000000 1.000000 0.929196 1.000000 1.000000
##      6393      6394      6395      6396      6397      6398      6399      6400
## 0.965356 1.000000 1.000000 0.828138 1.000000 1.000000 1.000000 1.000000
##      6401      6402      6403      6404      6405      6406      6407      6408
## 1.000000 1.000000 0.971245 1.000000 1.000000 1.000000 1.000000 1.000000
##      6409      6410      6411      6412      6413      6414      6415      6416
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 0.719922
##      6417      6418      6419      6420      6421      6422      6423      6424
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 0.934975
##      6425      6426      6427      6428      6429      6430      6431      6432
## 0.847377 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6433      6434      6435      6436      6437      6438      6439      6440
## 0.996655 1.000000 1.000000 1.000000 0.965981 1.000000 1.000000 1.000000
##      6441      6442      6443      6444      6445      6446      6447      6448
## 1.000000 0.888183 1.000000 1.000000 1.000000 1.000000 1.000000 0.985270
##      6449      6450      6451      6452      6453      6454      6455      6456
## 1.000000 1.000000 1.000000 1.000000 1.000000 0.649332 0.975285 1.000000
##      6457      6458      6459      6460      6461      6462      6463      6464
## 1.000000 1.000000 1.000000 1.000000 1.000000 0.999736 1.000000 1.000000
##      6465      6466      6467      6468      6469      6470      6471      6472
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6473      6474      6475      6476      6477      6478      6479      6480
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 0.946442
##      6481      6482      6483      6484      6485      6486      6487      6488
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6489      6490      6491      6492      6493      6494      6495      6496
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6497      6498      6499      6500      6501      6502      6503      6504
## 1.000000 1.000000 1.000000 0.999300 1.000000 1.000000 1.000000 0.868891
##      6505      6506      6507      6508      6509      6510      6511      6512
## 1.000000 1.000000 1.000000 0.999827 1.000000 1.000000 0.730187 1.000000
##      6513      6514      6515      6516      6517      6518      6519      6520
## 1.000000 1.000000 0.988114 1.000000 0.943981 1.000000 1.000000 0.774182
##      6521      6522      6523      6524      6525      6526      6527      6528
## 1.000000 1.000000 1.000000 1.000000 0.999724 1.000000 1.000000 1.000000
##      6529      6530      6531      6532      6533      6534      6535      6536
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6537      6538      6539      6540      6541      6542      6543      6544
## 0.992095 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6545      6546      6547      6548      6549      6550      6551      6552
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6553      6554      6555      6556      6557      6558      6559      6560
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6561      6562      6563      6564      6565      6566      6567      6568
## 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6569      6570      6571      6572      6573      6574      6575      6576
## 1.000000 1.000000 1.000000 0.982740 1.000000 1.000000 1.000000 1.000000
##      6577      6578      6579      6580      6581      6582      6583      6584
## 1.000000 0.969990 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000
##      6585      6586      6587      6588      6589      6590
## 1.000000 1.000000 1.000000 0.998192 1.000000 0.961420
##
## $first_median

```

```
## Median
## 7.95
##
## $first_mad
## [1] 2.52
##
## $second_median
## Median
## 7.95
##
## $second_mad
## [1] 2.52
```