Projet

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Presentation de la base de donnÃ©es

La base de données que nous allons utilisée est du domaine sociale,il s'agit de la base "Drug consumption" tirée du site archive.ics.uci.edu/ml/datasets ,les auteurs sont: . Elaine Fehrman, (Trouble de la personnalitÃ© masculine et Direction nationale des femmes, Rampton Hospital, Retford) . Vincent Egan, (DÃ©partement de psychiatrie et de psychologie appliquÃ©e, Université de Nottingham) . Evgeny M. Mirkes (Department de Mathematiques, Université de Leicester).

La base contient 1885 observations (qui sont 1885 individus interogés) et 32 variables reels sans valeures manquantes.Toutes les variables sont initialement catégorielles et sont quantifiÃ©es. Après quoi elles peuvent Ãªtre considérées comme réelles. En outre, les participants ont été interrogés concernant leur utilisation de 18 drogues légales et illégales et pour chaque individu, on connait certaines mesures de personalité et aussi le niveau d'éducation, L'âge, le sexe, le pays de résidence et l'appartenance ethnique. Pour notree etude, nous allons nous contenter d'etudier 14 variables que sont : age, gender, education, ethnicity, Nscore, Escore, Oscore, Ascore, Cscore, Impulsive, Alcohol, amphet, caff, heroin.

Apercu de nos données:

```
d=d[,c(2,3,4,6,7,8,9,10,11,12,14,15,18,24)]
colnames(d)=c("Age","Gender","Education","Ethnicity","Nscore","Escore","Oscore","Ascore","Cscore","Impul
head(d)
```

```
##        Age   Gender Education Ethnicity   Nscore   Escore   Oscore
## 1  0.49788  0.48246  -0.05921   0.12600  0.31287 -0.57545 -0.58331
## 2 -0.07854 -0.48246   1.98437  -0.31685 -0.67825  1.93886  1.43533
## 3  0.49788 -0.48246  -0.05921  -0.31685 -0.46725  0.80523 -0.84732
## 4 -0.95197  0.48246   1.16365  -0.31685 -0.14882 -0.80615 -0.01928
## 5  0.49788  0.48246   1.98437  -0.31685  0.73545 -1.63340 -0.45174
## 6  2.59171  0.48246  -1.22751  -0.31685 -0.67825 -0.30033 -1.55521
##     Ascore   Cscore Impulsive Alcohol Amphet Caff Heroin
## 1 -0.91699 -0.00665  -0.21712     CL5    CL2  CL6    CL0
## 2  0.76096 -0.14277  -0.71126     CL5    CL2  CL6    CL0
## 3 -1.62090 -1.01450  -1.37983     CL6    CL0  CL6    CL0
## 4  0.59042  0.58489  -1.37983     CL4    CL0  CL5    CL0
## 5 -0.30172  1.30612  -0.21712     CL4    CL1  CL6    CL0
## 6  2.03972  1.63088  -1.37983     CL2    CL0  CL6    CL0
```

Description des variables d'etude

Age

Il s'agit de l'age des individus;on a 6 valeures et Ã chaque valeure, correspond une classe d'age: -0.95197 pour 18-24ans, -0.07854 pour 25-34ans, 0.49788 pour 35-44ans, 1.09449 pour 45-54ans , 1.82213 pour 55-64ans et 2.59171 pour 65ans et +

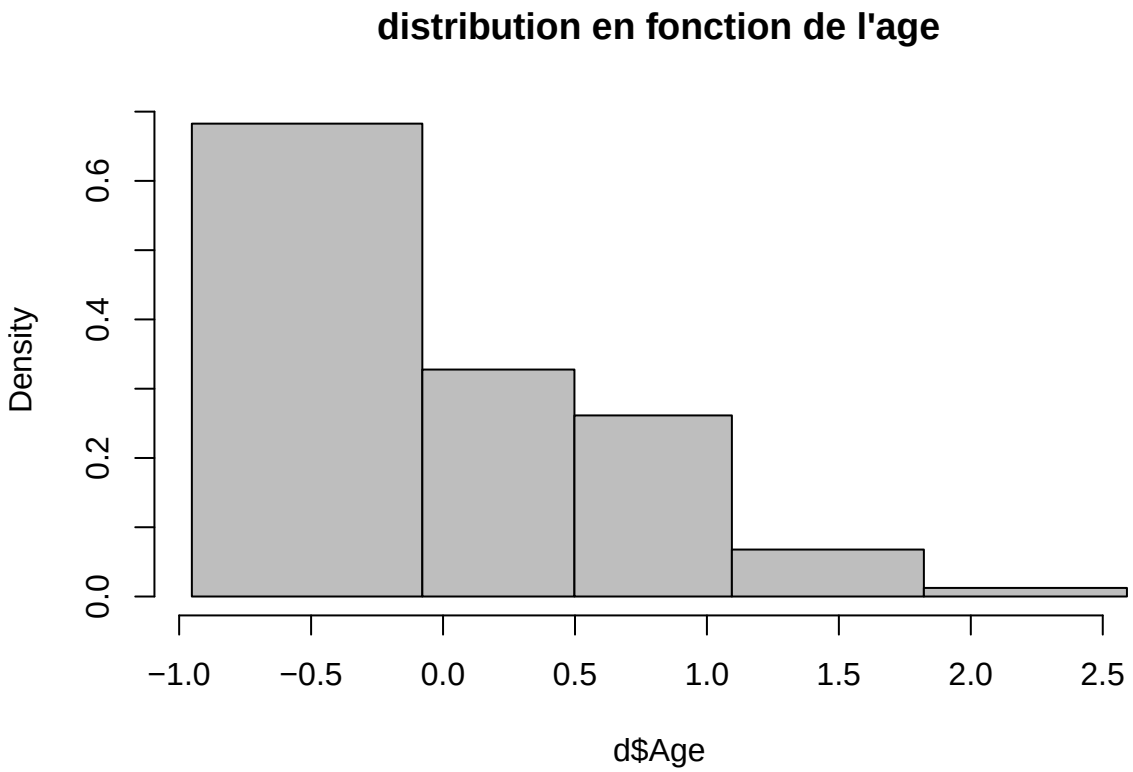
```r
summary(d$Age)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -0.95200 -0.95200 -0.07854  0.03461  0.49790  2.59200
```

```r
table(d$Age)
```

```
##
## -0.95197 -0.07854  0.49788  1.09449  1.82213  2.59171
##      643      481      356      294       93       18
```

```r
hist(d$Age, breaks = c(-0.95197,-0.07854,0.49788,1.09449,1.82213,2.59171),col ="gray", main ="distributi
```



La distribution nous montre que la population interrogée est essentiellement constituée de jeunes gens d'age compris entre 18 et 24 ans.

Gender

Comme son nom l'indique, cette variable precise le sexe des individus, comme suite 0.48246 pour Femme et -0.48246 pour Homme.

```r
table(d$Gender)
```

```
##
## -0.48246  0.48246
##      943      942
```

On a pratiquement le meme nombrede femme et d'homme dans la population.

Education

Elle indique le niveau d'etude des individus comme suite: -2.43591 pour un individu qui a quitté l'Ecole avant 16 ans, -1.73790 pour un individu qui a quitté l'Ecole à 16 ans, -1.43719 pour un individu qui a quitté l'Ecole à 17 ans, -1.22751 pour un individu qui a quitté l'Ecole à 18 ans, -0.61113 pour un individu qui est Ã un niveau collÃ¨ge ou une universitÃ©, sans certificat ni diplÃ´me, -0.05921 pour un individu qui a un Certificat professionnel / diplÃ´me, 0.45468 pour un individu qui a un DiplÃ´me universitaire, 1.16365 pour un individu qui a une MaÃ®trise, 1.98437 pour un individu qui a un Doctorat.

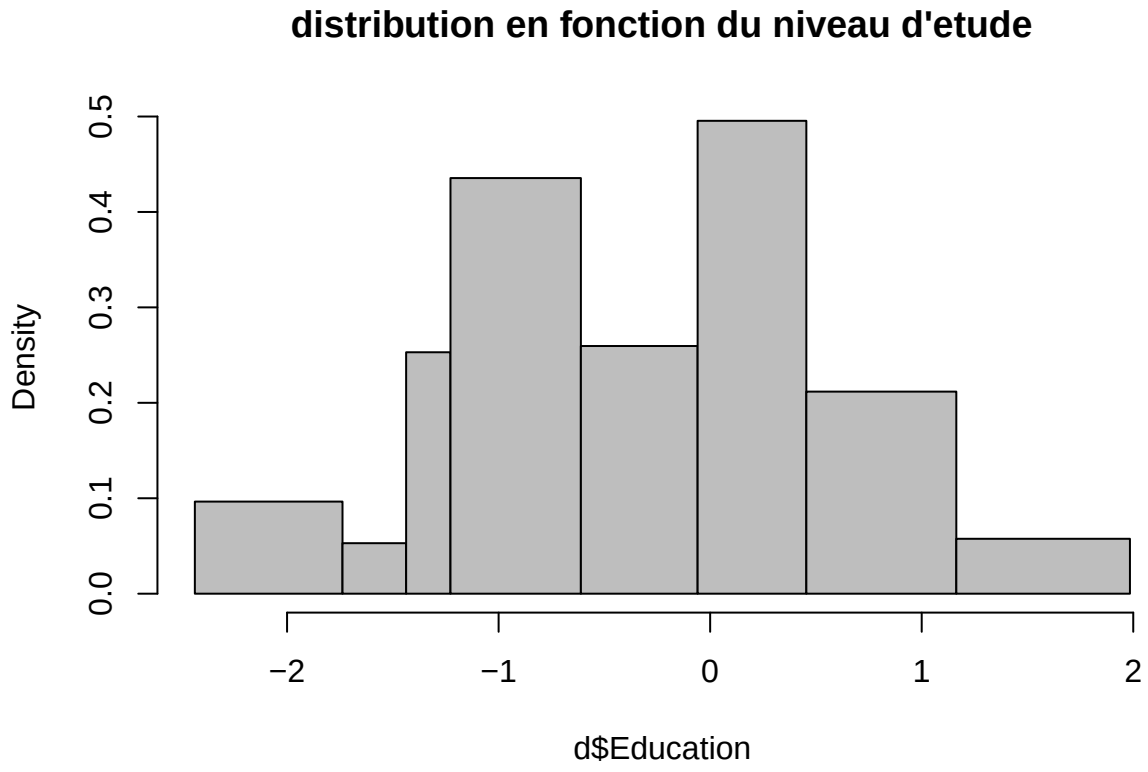
```
summary(d$Education)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -2.436000 -0.611100 -0.059210 -0.003806  0.454700  1.984000
```

```
table(d$Education)
```

```
##
## -2.43591  -1.7379 -1.43719 -1.22751 -0.61113 -0.05921  0.45468  1.16365
##       28       99       30      100      506      270      480      283
##  1.98437
##       89
```

```
hist(d$Education,breaks = c(-2.43591,-1.73790,-1.43719,-1.22751,-0.61113,-0.05921,0.45468,1.16365,1.984
```



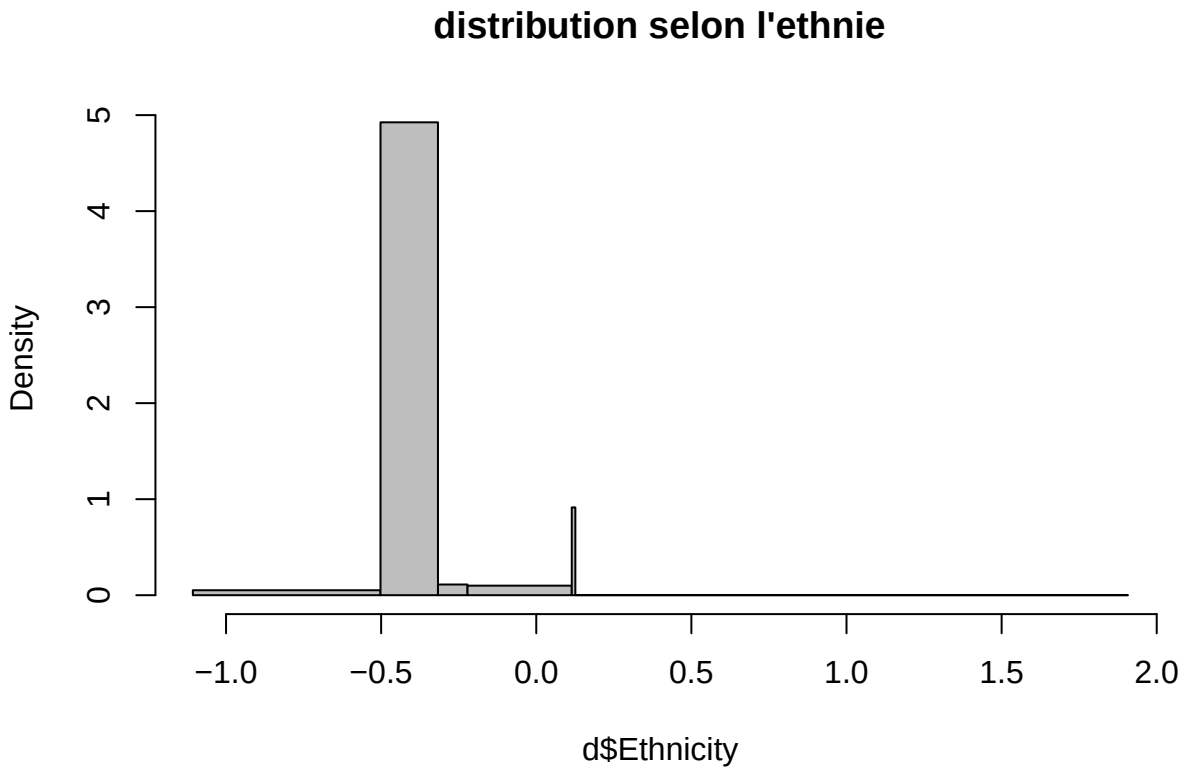
Ethnicity

elle indique l'appartenance ethnique,selon les valeures suivantes on a: -0.50212 pour Asiatique , -1.10702 pour noir, 1.90725 pour metisse noire/asiatique, 0.12600 pour metisse noir/asiatique, -0.22166 pour metisse blanc/noir, 0.11440 pour autres et -0.31685 pour blanc.

```
table(d$Ethnicity)
```

```
##
## -1.10702 -0.50212 -0.31685 -0.22166   0.1144    0.126  1.90725
##       33       26     1720       20       63       20        3
```

```
hist(d$Ethnicity,breaks = c(-0.50212,-1.10702,1.90725,0.12600,-0.22166,0.11440,-0.31685),main = "distril
```



Nscore

il s'agit du score obtenu suite au test du neuroticisme ,il caractérise une tendance persistante à l'expérience des émotions négatives. Les individus possédant un haut degré de neuroticisme peuvent faire l'expérience d'émotions telles que l'anxiété, la colère, la culpabilité et la déprime.

```
summary(d$Nscore)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -3.464000 -0.678200  0.042570  0.000047  0.629700  3.274000
```

Escore

il s'agit du score obtenu suite au test de l'Extraversion.L'extraversion c'est la tendance à s'intéresser aux objets externes (les autres, le monde).

```
summary(d$Escore)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -3.274000 -0.695100  0.003320 -0.000163  0.637800  3.274000
```

Oscore

score obtenu suite au test de l'Ouverture Ã l 'experience

```
summary(d$Oscore)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -3.274000 -0.717300 -0.019280 -0.000534  0.723300  2.902000
```

Ascore

score obtenu suite au test "Agreeableness" Les personnes qui obtiennent un score élevé sur cette dimension sont empathiques et altruistes, alors qu'un score de faible concordance se rapporte à un comportement égoïste et à un manque d'empathie. Ceux qui ont un score très faible sur l'agrément montrent des signes de comportement de triade sombre comme la manipulation et la concurrence avec d'autres plutôt que de coopérer.

```
summary(d$Ascore)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -3.464000 -0.606300 -0.017290 -0.000245  0.761000  3.464000
```

Cscore

score obtenue suite au test de Conscience

```
summary(d$Cscore)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -3.464000 -0.652500 -0.006650 -0.000386  0.584900  3.464000
```

Impulsive

score obtenue au test d'impulsivité

```
summary(d$Impulsive)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -2.555000 -0.711300 -0.217100  0.007216  0.529800  2.902000
```

Alcohol

C'est la classe de consommation d'alcool. C'est un attribut de sortie avec la distribution suivante des classes: CL0 jamais utilisÃ© CL1 utilisÃ© il y'a plus d'une DÃ©cennie CL2 utilisÃ© dans la derniÃ¨re dÃ©cennie

CL3 utilisÃ© dans la derniÃ¨re annÃ©e CL4 utilisÃ© dans le dernier mois CL5 utilisÃ© dans la derniÃ¨re semaine CL6 utilisÃ© dans le dernier jour

```
table(d$Alcohol)
```

```
##
## CL0 CL1 CL2 CL3 CL4 CL5 CL6
##  34  34  68 198 287 759 505
```

Amphet

C'est la classe de consommation d'amphetamine. C'est un attribut de sortie avec la distribution suivante des classes: CL0 jamais utilisÃ© CL1 utilisÃ© il y'a plus d'une DÃ©cennie CL2 utilisÃ© dans la derniÃ¨re dÃ©cennie CL3 utilisÃ© dans la derniÃ¨re annÃ©e CL4 utilisÃ© dans le dernier mois CL5 utilisÃ© dans la derniÃ¨re semaine CL6 utilisÃ© dans le dernier jour

```
table(d$Amphet)
```

```
##
## CL0 CL1 CL2 CL3 CL4 CL5 CL6
## 976 230 243 198  75  61 102
```

caff

C'est la classe de consommation de caffeine. C'est un attribut de sortie avec la distribution suivante des classes: CL0 jamais utilisÃ© CL1 utilisÃ© il y'a plus d'une DÃ©cennie CL2 utilisÃ© dans la derniÃ¨re dÃ©cennie CL3 utilisÃ© dans la derniÃ¨re annÃ©e CL4 utilisÃ© dans le dernier mois CL5 utilisÃ© dans la derniÃ¨re semaine CL6 utilisÃ© dans le dernier jour

```
table(d$Caff)
```

```
##
##  CL0  CL1  CL2  CL3  CL4  CL5  CL6
##   27   10   24   60  106  273 1385
```

Heroin

C'est la classe de consommation d'heroine. C'est un attribut de sortie avec la distribution suivante des classes: CL0 jamais utilisÃ© CL1 utilisÃ© il y'a plus d'une DÃ©cennie CL2 utilisÃ© dans la derniÃ¨re dÃ©cennie CL3 utilisÃ© dans la derniÃ¨re annÃ©e CL4 utilisÃ© dans le dernier mois CL5 utilisÃ© dans la derniÃ¨re semaine CL6 utilisÃ© dans le dernier jour

```
table(d$Heroin)
```

```
##
##  CL0  CL1  CL2  CL3  CL4  CL5  CL6
## 1605   68   94   65   24   16   13
```

Objectifs

Notre bute est d'etudier la correlation entre les variables et pouvoir ainsi savoir,quelle tranche d'age ou quelle ethnie consomme le plus quel type de drogue ou egalement selon lespersonnaalité..EN outr on pourait se demander si certaine drogue sont consomé ensemble en paralelle, c'est à dire si les consomateurs d'un certain

type de drogue consomme en plus un autre type ou pas. Pour repondre à ces differentes questions, nous allons realiser une annalyse des données à l'aide des ACP(Analyse en Composante Principale).

Analyse des données

De l'analyse preleminaire qui a été faite, on s'apercois que la drogue la moin consommée est l'heroine suivi des amphetamines tandisque la plus consommée n'est autre que la caffeine et l'alcool se place en deuxieme position. On peut tenter d'expliquer ceci par le fait que la caffeine et l'alcoolsont plutot frequent sur le marché,classées parmis les stupefiants autorisés, ce qui n'est pas le cas de l'heroine.

Afin de pouvoir realiser notre ACP et etudier la relation entre les variables decrivant la consommation des drogues et les autres variables, nous allons proceder a certaine modifications.Pour reussir a les representer sur un graphique, nos variables categorielles doivent etre numeric, à cet effet nous allons supprimé les lettre 'CL' et ne garder que les chiffres '1-2-3-4-5-6' comme attribus.

```
A<-regexpr("C",d$Alcohol)
d$Alcohol<-substr(d$Alcohol,start =A+2,stop = A+2)
d$Amphet<-substr(d$Amphet,start = A+2,stop = A+2)
d$Caff<-substr(d$Caff,start = A+2,stop = A+2)
d$Heroin<-substr(d$Heroin,start = A+2,stop = A+2)
d$Alcohol<-as.numeric(d$Alcohol)
d$Amphet=as.numeric(d$Amphet)
d$Caff=as.numeric(d$Caff)
d$Heroin=as.numeric(d$Heroin)
res.PCA=PCA(d,scale.unit = T,ncp = 10,quanti.sup = 11:14,graph = F)
d
```

```
##           Age   Gender Education Ethnicity   Nscore   Escore   Oscore
## 1     0.49788  0.48246  -0.05921   0.12600  0.31287 -0.57545 -0.58331
## 2    -0.07854 -0.48246   1.98437  -0.31685 -0.67825  1.93886  1.43533
## 3     0.49788 -0.48246  -0.05921  -0.31685 -0.46725  0.80523 -0.84732
## 4    -0.95197  0.48246   1.16365  -0.31685 -0.14882 -0.80615 -0.01928
## 5     0.49788  0.48246   1.98437  -0.31685  0.73545 -1.63340 -0.45174
## 6     2.59171  0.48246  -1.22751  -0.31685 -0.67825 -0.30033 -1.55521
## 7     1.09449 -0.48246   1.16365  -0.31685 -0.46725 -1.09207 -0.45174
## 8     0.49788 -0.48246  -1.73790  -0.31685 -1.32828  1.93886 -0.84732
## 9     0.49788  0.48246  -0.05921  -0.31685  0.62967  2.57309 -0.97631
## 10    1.82213 -0.48246   1.16365  -0.31685 -0.24649  0.00332 -1.42424
## 11   -0.07854  0.48246   0.45468  -0.31685 -1.05308  0.80523 -1.11902
## 12    1.09449 -0.48246  -0.61113  -0.31685 -1.32828  0.00332  0.14143
## 13    1.82213  0.48246   0.45468  -0.31685  2.28554  0.16767  0.44585
## 14    1.82213  0.48246  -0.05921  -0.31685 -0.79151  0.80523 -0.01928
## 15    1.82213  0.48246  -0.05921  -0.31685 -0.92104  1.45421  0.44585
## 16    1.82213 -0.48246   0.45468  -0.31685 -2.05048 -1.50796 -1.55521
## 17    0.49788  0.48246  -0.61113  -0.31685 -1.55078 -0.80615 -1.68062
## 18    1.09449 -0.48246  -1.73790  -0.31685  0.52135 -1.23177 -0.31776
## 19    1.82213 -0.48246   0.45468  -0.31685  1.37297 -0.15487 -0.17779
## 20    0.49788 -0.48246  -0.05921  -0.31685 -0.34799 -1.76250 -2.39883
## 21    1.09449 -0.48246  -0.05921  -0.31685 -0.79151  0.80523  0.72330
## 22    2.59171 -0.48246  -2.43591  -0.31685 -1.19430  0.47617 -1.11902
## 23    1.09449 -0.48246   0.45468  -0.31685  0.41667 -0.94779 -0.84732
## 24    1.09449 -0.48246  -1.73790  -0.31685  1.60383 -3.27393 -1.27553
## 25    1.82213 -0.48246   0.45468  -0.31685 -0.14882  0.63779  1.24033
## 26    1.09449 -0.48246  -0.61113  -0.31685 -0.79151 -0.43999 -1.27553
```

```
## 27    1.82213  0.48246  -1.22751  -0.31685 -0.05188 -1.63340 -3.27393
## 28    0.49788 -0.48246   0.45468  -0.31685  0.52135 -1.23177 -0.01928
## 29    0.49788  0.48246   1.16365  -0.31685  0.04257 -1.50796 -0.71727
## 30    1.09449 -0.48246   1.98437  -0.31685 -1.32828  1.74091  0.88309
## 31    1.09449 -0.48246  -1.73790  -0.31685  0.31287 -0.80615 -1.27553
## 32    0.49788  0.48246  -1.73790  -0.31685 -1.19430 -0.80615  0.14143
## 33    0.49788 -0.48246   0.45468  -0.31685 -0.79151 -1.23177 -0.01928
## 34   -0.95197 -0.48246   0.45468  -0.31685  0.41667 -0.30033  0.29338
## 35    0.49788 -0.48246   0.45468   0.11440  1.02119  0.63779  0.88309
## 36    2.59171 -0.48246  -2.43591  -0.31685 -0.24649 -0.80615 -2.63199
## 37    0.49788 -0.48246   0.45468  -0.31685 -0.24649 -0.57545 -0.17779
## 38    1.82213 -0.48246  -2.43591  -0.31685  0.31287  0.32197  1.06238
## 39    1.09449 -0.48246   0.45468  -0.31685 -1.55078  1.28610  0.29338
## 40    2.59171  0.48246  -0.05921  -0.31685 -0.24649 -0.94779 -1.11902
## 41    0.49788 -0.48246   1.16365  -0.31685  0.04257 -0.43999 -0.01928
## 42    0.49788  0.48246   0.45468  -0.31685  0.82562  0.00332  1.06238
## 43    0.49788 -0.48246   1.16365  -0.31685 -0.14882 -0.94779 -1.27553
## 44    0.49788 -0.48246  -0.05921  -0.31685 -0.92104 -0.57545 -0.31776
## 45   -0.07854 -0.48246   0.45468   0.11440 -1.05308  1.45421  0.44585
## 46   -0.07854  0.48246   0.45468  -0.31685 -0.46725  0.47617  1.24033
## 47    1.09449  0.48246  -0.61113  -0.31685  0.31287  0.63779 -1.11902
## 48    1.09449 -0.48246   1.16365  -0.31685 -2.05048  0.80523  0.29338
## 49    1.09449 -0.48246  -1.73790  -0.31685  0.13606 -0.80615 -0.31776
## 50   -0.07854  0.48246   1.16365  -0.22166  0.82562 -0.57545 -1.97495
## 51    0.49788 -0.48246   1.16365  -0.31685  1.02119 -0.15487 -0.17779
## 52    1.09449 -0.48246  -0.05921  -0.31685  1.13281  0.96248 -0.58331
## 53    1.82213  0.48246   0.45468  -0.31685 -0.14882  0.00332 -1.42424
## 54    1.09449 -0.48246   1.16365  -0.31685 -1.43907 -0.15487  1.06238
## 55    1.82213 -0.48246  -1.73790  -0.31685  0.04257  1.11406 -0.58331
## 56    1.82213  0.48246  -0.05921  -0.31685  0.04257 -0.69509 -1.11902
## 57    0.49788  0.48246  -0.61113  -0.31685  0.04257  0.00332 -1.68062
## 58   -0.07854  0.48246   0.45468  -0.31685 -0.58016  0.63779 -1.97495
## 59    1.09449 -0.48246  -1.22751  -0.31685  0.22393  0.63779 -0.01928
## 60    1.09449 -0.48246   0.45468  -0.31685 -0.46725 -1.23177 -1.27553
## 61   -0.07854  0.48246   1.98437  -0.31685  1.37297  0.32197  0.29338
## 62    1.09449 -0.48246   1.16365  -0.50212 -2.21844  1.58487  1.24033
## 63   -0.07854 -0.48246   0.45468  -0.31685 -0.58016 -1.37639 -1.82919
## 64    1.09449 -0.48246   0.45468  -0.31685  1.02119 -0.30033 -0.71727
## 65    1.09449 -0.48246   1.98437  -0.31685 -1.55078  0.47617  1.06238
## 66    0.49788 -0.48246  -0.61113  -0.31685  0.73545  0.47617 -0.84732
## 67    1.09449 -0.48246  -1.73790  -0.31685 -1.05308 -0.69509 -1.11902
## 68   -0.07854 -0.48246   1.16365  -0.31685 -0.34799 -0.30033  1.06238
## 69    0.49788 -0.48246  -0.05921  -0.31685 -0.92104  0.00332  0.29338
## 70    1.09449  0.48246  -1.73790  -0.31685 -0.05188 -0.69509 -1.68062
## 71   -0.07854 -0.48246  -0.61113  -0.31685 -0.34799 -0.30033  0.14143
## 72    1.09449  0.48246  -1.22751  -0.31685 -0.46725  1.11406 -0.31776
## 73    1.09449 -0.48246  -1.22751  -0.31685 -1.55078  0.96248 -0.01928
## 74    1.09449 -0.48246  -0.05921  -0.31685 -0.67825 -0.57545 -0.31776
## 75    2.59171  0.48246  -1.73790  -0.31685 -1.19430 -1.76250 -2.85950
## 76   -0.07854 -0.48246   0.45468  -0.31685 -0.14882  0.16767 -1.55521
## 77    1.09449  0.48246  -1.43719  -0.31685 -0.34799 -0.69509 -1.55521
## 78    0.49788 -0.48246   0.45468  -0.31685  0.13606 -1.63340 -0.58331
## 79    0.49788 -0.48246  -0.61113  -0.31685 -0.79151 -0.80615 -2.09015
## 80    0.49788 -0.48246  -0.05921  -0.31685 -0.34799 -0.80615 -1.97495
```

```
## 81    2.59171  0.48246   1.98437  -0.31685  0.04257  0.32197  0.44585
## 82    1.82213  0.48246   0.45468  -0.31685 -0.79151 -1.23177 -0.01928
## 83    1.82213 -0.48246   1.16365  -0.31685 -2.05048  1.45421 -0.97631
## 84    1.82213  0.48246  -1.43719  -0.22166  1.02119 -0.94779 -1.11902
## 85    1.09449 -0.48246  -1.73790  -0.31685 -0.34799  0.16767 -0.31776
## 86   -0.07854  0.48246  -1.22751  -0.31685 -0.46725  0.00332 -1.55521
## 87    0.49788 -0.48246  -0.61113  -0.31685  0.73545 -0.15487 -1.11902
## 88    1.82213 -0.48246  -1.73790  -0.31685 -0.92104  0.16767 -0.45174
## 89    0.49788  0.48246  -0.61113  -0.31685  0.31287 -1.92173 -1.42424
## 90    0.49788  0.48246   1.16365  -0.31685  0.91093 -0.57545  0.29338
## 91    0.49788  0.48246   1.16365  -0.31685  1.37297  0.32197  0.72330
## 92    0.49788 -0.48246  -0.05921  -0.31685  0.41667 -0.43999  0.72330
## 93   -0.07854 -0.48246  -1.22751  -0.31685 -1.55078 -0.30033 -0.45174
## 94    2.59171  0.48246  -1.73790  -0.31685 -0.14882 -0.80615 -0.97631
## 95    1.09449 -0.48246   1.16365  -0.31685 -0.67825 -0.57545 -0.97631
## 96    1.09449 -0.48246   1.16365  -0.31685 -0.46725  0.32197  1.06238
## 97    0.49788  0.48246   0.45468  -0.31685  0.13606 -1.09207  0.29338
## 98    1.09449  0.48246   1.16365  -0.31685 -0.46725  0.63779 -0.31776
## 99    0.49788 -0.48246   1.98437  -0.31685 -1.19430 -0.43999 -0.01928
## 100  -0.07854  0.48246   0.45468  -0.31685 -0.67825  3.00537  0.72330
## 101  -0.07854 -0.48246   1.16365  -0.31685 -1.05308  2.57309  0.58331
## 102   1.09449  0.48246  -1.73790  -0.31685 -0.58016  0.47617 -1.68062
## 103   1.09449 -0.48246  -1.22751  -0.31685 -0.58016  1.28610  1.43533
## 104   1.09449  0.48246  -0.05921  -0.31685  0.04257  0.63779 -0.31776
## 105  -0.07854  0.48246  -0.61113  -0.31685 -0.92104  0.16767 -0.17779
## 106   0.49788 -0.48246  -0.05921  -0.31685 -2.21844  0.47617 -1.82919
## 107  -0.07854  0.48246  -0.61113  -0.31685  1.02119 -0.30033 -1.82919
## 108   0.49788  0.48246  -1.73790  -0.31685  0.13606  0.00332 -1.27553
## 109  -0.07854  0.48246   0.45468  -0.31685 -0.46725  2.12700  0.14143
## 110   1.09449  0.48246  -0.61113  -0.31685 -0.79151  0.47617 -1.42424
## 111   1.09449 -0.48246   1.16365  -0.50212 -0.14882  0.32197  0.14143
## 112  -0.07854 -0.48246   1.16365  -0.31685  0.31287 -1.09207 -0.84732
## 113  -0.07854  0.48246   0.45468  -0.31685 -1.19430  0.32197  0.88309
## 114   1.09449  0.48246  -0.05921  -0.31685  0.04257  0.63779  0.29338
## 115   0.49788 -0.48246  -0.61113  -0.31685 -2.34360  1.93886  1.43533
## 116  -0.07854  0.48246  -0.05921  -0.31685  0.22393 -0.57545 -0.84732
## 117   0.49788 -0.48246  -0.05921  -0.31685  0.62967 -0.57545  0.14143
## 118  -0.07854  0.48246   0.45468  -0.31685  1.60383  0.80523  1.43533
## 119   0.49788  0.48246  -0.61113  -0.31685  1.83990 -1.92173 -2.39883
## 120   0.49788  0.48246   0.45468  -0.31685 -0.34799  0.63779 -0.97631
## 121  -0.07854  0.48246   1.16365  -0.31685 -1.05308  0.63779 -0.97631
## 122   0.49788  0.48246  -0.05921  -0.31685  1.49158 -1.23177 -1.55521
## 123   1.82213 -0.48246   1.16365  -0.31685  0.22393  0.16767 -0.17779
## 124  -0.07854  0.48246   0.45468  -0.31685  0.22393 -0.69509 -0.45174
## 125   1.09449 -0.48246  -1.73790  -0.31685 -0.34799  1.93886  0.29338
## 126   1.82213 -0.48246   0.45468  -0.31685 -0.46725  1.28610  0.44585
## 127   1.09449 -0.48246   0.45468  -0.31685 -1.19430  0.63779 -1.11902
## 128   1.09449  0.48246  -1.43719  -0.31685 -0.34799 -0.80615 -0.84732
## 129   0.49788 -0.48246   1.98437  -0.50212  0.04257  0.63779  0.14143
## 130   1.09449  0.48246   1.16365  -0.31685 -0.79151  0.96248 -1.11902
## 131   1.09449  0.48246  -1.73790  -0.31685  0.91093  0.32197 -1.42424
## 132   1.09449  0.48246  -1.73790   0.11440 -1.55078 -0.15487 -1.27553
## 133   0.49788  0.48246  -1.22751  -0.31685 -0.24649 -0.57545 -0.58331
## 134   0.49788 -0.48246   1.16365  -0.31685 -0.05188  0.16767  0.29338
```

```
## 135  -0.07854  0.48246   1.16365   0.12600  3.27393 -1.50796 -0.31776
## 136   0.49788  0.48246  -1.73790  -0.31685 -1.69163  1.58487 -0.58331
## 137   1.09449  0.48246   0.45468  -0.31685 -0.14882 -0.30033 -1.68062
## 138   1.09449  0.48246   0.45468  -0.31685 -1.19430  1.58487  0.29338
## 139   1.82213 -0.48246   0.45468  -0.31685 -0.46725 -0.80615  0.14143
## 140   1.09449 -0.48246  -1.73790  -0.31685 -0.05188  0.32197 -0.58331
## 141  -0.07854  0.48246   0.45468  -0.50212  1.98437  0.32197  1.43533
## 142   0.49788  0.48246  -1.73790  -0.31685 -0.79151  0.63779 -1.11902
## 143   0.49788 -0.48246  -1.43719  -0.31685 -0.46725 -0.30033 -1.27553
## 144   0.49788 -0.48246  -0.05921  -1.10702 -1.69163  1.28610 -0.58331
## 145   1.09449 -0.48246  -0.05921  -0.31685  0.13606 -1.09207 -0.45174
## 146   1.09449  0.48246   0.45468  -0.31685 -0.46725  0.16767 -1.11902
## 147   1.82213 -0.48246  -0.05921  -0.31685  0.22393 -1.23177 -0.17779
## 148   0.49788 -0.48246   1.16365  -1.10702 -0.58016  0.47617 -0.71727
## 149   0.49788  0.48246  -0.05921  -0.31685 -0.05188 -1.09207 -2.63199
## 150   1.09449  0.48246   0.45468  -0.31685 -0.79151  1.93886 -0.71727
## 151   0.49788  0.48246  -0.61113  -0.31685 -0.24649  1.28610  0.14143
## 152   0.49788  0.48246   0.45468  -0.31685  0.52135 -1.63340 -1.82919
## 153  -0.07854  0.48246   0.45468  -0.31685 -0.46725 -1.50796 -0.71727
## 154  -0.07854 -0.48246   0.45468  -0.31685 -0.67825  0.96248 -1.68062
## 155  -0.95197  0.48246  -0.61113  -0.31685  2.82196 -1.37639  0.72330
## 156   0.49788  0.48246   0.45468  -1.10702  0.62967 -1.37639 -1.27553
## 157   0.49788  0.48246  -0.61113  -0.31685  1.23461  0.00332 -0.31776
## 158  -0.07854 -0.48246  -1.73790  -0.31685 -1.05308  1.11406 -1.82919
## 159   0.49788  0.48246   0.45468  -0.31685 -0.24649  0.16767 -0.31776
## 160   1.09449  0.48246  -0.61113  -1.10702 -0.46725 -0.57545 -0.58331
## 161   1.09449 -0.48246   1.16365  -0.31685  1.02119  0.80523  0.44585
## 162   0.49788 -0.48246   0.45468  -1.10702 -0.67825  0.32197 -0.84732
## 163  -0.07854  0.48246   0.45468  -0.31685  0.22393  0.00332 -0.17779
## 164  -0.07854  0.48246  -0.61113  -0.31685  1.83990  0.00332 -0.31776
## 165  -0.07854  0.48246   1.98437  -0.31685  0.13606  0.32197 -1.55521
## 166   1.09449 -0.48246   1.16365  -0.31685 -0.24649 -0.30033 -0.31776
## 167  -0.95197 -0.48246  -0.61113  -0.31685  1.49158 -1.23177  0.72330
## 168  -0.07854  0.48246  -0.05921  -1.10702  0.04257  0.00332 -0.97631
## 169  -0.07854  0.48246   0.45468  -0.31685  0.22393  1.28610 -1.27553
## 170  -0.95197  0.48246  -1.22751  -0.31685 -0.34799  0.00332 -1.42424
## 171   1.09449 -0.48246  -1.73790  -0.31685  1.37297 -0.30033 -0.31776
## 172   0.49788 -0.48246   1.16365  -0.31685 -0.34799  0.96248  2.15324
## 173   1.09449  0.48246  -0.05921  -0.31685  0.52135 -0.57545 -0.45174
## 174   0.49788  0.48246   0.45468  -0.31685  1.02119  0.63779  1.24033
## 175   0.49788  0.48246  -0.05921  -0.31685  1.02119 -0.57545 -2.21069
## 176   1.82213  0.48246   0.45468  -0.31685  0.62967  0.00332  0.44585
## 177   0.49788  0.48246   0.45468   0.11440 -0.14882 -0.57545 -0.84732
## 178   0.49788  0.48246   0.45468  -0.31685  1.49158  0.00332 -1.27553
## 179   1.09449  0.48246   0.45468  -0.31685  0.82562 -0.94779 -0.45174
## 180   0.49788  0.48246  -0.05921  -0.31685  0.41667 -0.15487 -0.97631
## 181   1.09449  0.48246  -0.05921  -0.31685  0.31287  0.63779 -1.55521
## 182  -0.07854 -0.48246   1.98437  -0.31685 -1.32828 -0.43999 -0.31776
## 183   0.49788  0.48246  -0.61113  -0.31685  0.31287  0.80523 -0.31776
## 184  -0.95197  0.48246   0.45468  -0.31685  1.98437 -0.43999  0.29338
## 185   1.82213 -0.48246  -1.22751  -0.31685  0.04257 -0.80615 -0.97631
## 186   0.49788  0.48246   0.45468  -0.31685  0.31287  0.63779 -0.01928
## 187   0.49788  0.48246   1.16365  -0.31685 -0.67825  1.45421  0.14143
## 188   1.82213  0.48246  -1.73790  -0.31685 -0.79151 -0.80615 -1.97495
```

```
## 189   1.09449  0.48246 -1.73790  -0.31685  0.41667 -1.37639 -2.09015
## 190  -0.95197  0.48246  1.16365  -0.31685 -0.34799  0.00332 -0.45174
## 191   1.82213  0.48246 -0.05921  -0.31685 -1.43907  0.00332 -0.84732
## 192  -0.95197 -0.48246  0.45468   0.12600 -0.34799  1.28610 -1.11902
## 193  -0.07854  0.48246 -0.05921  -0.31685 -0.79151 -0.30033 -0.17779
## 194   1.09449  0.48246  0.45468  -0.31685  0.31287 -1.09207 -0.45174
## 195  -0.07854  0.48246  0.45468   0.12600 -0.92104  1.28610 -0.01928
## 196   1.82213  0.48246  0.45468  -0.31685  0.62967  0.32197  0.72330
## 197  -0.95197 -0.48246  0.45468  -1.10702 -0.58016  0.32197 -0.58331
## 198   1.82213  0.48246  0.45468  -0.31685 -0.34799  0.47617 -0.71727
## 199  -0.07854  0.48246 -0.05921  -0.31685 -0.05188  0.47617  0.58331
## 200   1.09449  0.48246 -0.05921  -0.31685 -0.46725  2.32338  0.72330
## 201  -0.95197  0.48246  0.45468  -0.31685 -0.58016  0.16767 -0.84732
## 202   0.49788 -0.48246  1.16365   0.11440 -0.14882 -0.94779 -0.58331
## 203   0.49788  0.48246  0.45468  -0.31685 -0.67825  1.28610 -0.45174
## 204   2.59171 -0.48246 -2.43591  -0.31685 -1.55078 -1.09207 -2.39883
## 205  -0.07854  0.48246  0.45468  -0.31685 -0.14882  0.96248  1.24033
## 206   0.49788  0.48246 -1.73790  -0.31685 -0.14882  1.11406  0.29338
## 207  -0.95197  0.48246  0.45468  -0.31685 -0.05188  1.28610  0.58331
## 208   0.49788  0.48246 -0.05921  -0.31685 -0.67825  0.47617 -0.58331
## 209   0.49788  0.48246  0.45468  -0.31685  0.13606  0.00332 -0.17779
## 210  -0.07854 -0.48246  1.16365  -0.50212 -1.43907  0.47617  1.06238
## 211  -0.07854  0.48246 -0.61113  -0.31685  0.73545  0.16767 -1.42424
## 212   1.09449  0.48246 -1.73790  -0.31685 -0.67825 -0.57545 -1.11902
## 213  -0.07854  0.48246 -0.05921  -0.31685  0.13606  0.63779 -0.84732
## 214   1.09449  0.48246 -0.05921  -0.31685  0.52135 -0.15487 -1.27553
## 215  -0.07854  0.48246 -0.05921  -0.31685 -0.14882  1.11406  0.44585
## 216  -0.07854  0.48246  0.45468  -0.31685  1.60383 -0.30033 -0.71727
## 217  -0.07854  0.48246 -0.05921  -0.31685  0.22393  1.11406  0.29338
## 218   0.49788 -0.48246 -0.05921  -0.31685  1.23461  0.80523  0.44585
## 219  -0.07854  0.48246  1.16365  -0.31685  0.31287  1.11406 -0.84732
## 220   0.49788  0.48246 -0.61113  -0.31685 -0.34799 -0.57545  0.14143
## 221  -0.95197  0.48246  0.45468  -0.31685  0.82562 -0.30033  0.29338
## 222  -0.07854  0.48246  0.45468  -0.31685 -0.14882  0.47617 -0.45174
## 223   0.49788  0.48246  0.45468  -0.31685 -0.24649  0.63779  0.72330
## 224   1.82213 -0.48246  0.45468  -0.31685 -1.19430  1.11406 -0.31776
## 225   1.09449  0.48246  0.45468  -0.31685 -0.46725  1.45421  0.29338
## 226   0.49788  0.48246  0.45468  -0.31685 -1.32828  0.63779  0.88309
## 227   1.09449  0.48246  0.45468  -0.31685 -0.46725  0.47617 -0.71727
## 228  -0.95197 -0.48246 -0.61113  -0.31685  0.22393  0.96248 -0.97631
## 229   1.09449 -0.48246  1.16365  -0.31685 -0.67825  0.32197 -0.01928
## 230   1.09449  0.48246  0.45468  -0.31685 -1.05308  1.45421  0.14143
## 231   0.49788  0.48246 -0.05921  -0.31685  1.02119 -2.21069 -1.82919
## 232   2.59171  0.48246  1.16365  -0.31685  0.13606 -1.09207 -0.45174
## 233  -0.07854  0.48246  0.45468  -0.31685  0.04257  1.28610 -0.01928
## 234   1.09449 -0.48246  0.45468  -0.31685 -0.67825  0.80523 -1.42424
## 235  -0.07854  0.48246  0.45468  -0.31685  0.41667  0.96248 -0.01928
## 236  -0.07854  0.48246 -0.05921  -0.31685  0.04257  0.96248 -1.27553
## 237  -0.07854  0.48246  1.16365  -0.31685  1.49158  0.32197 -0.17779
## 238  -0.07854  0.48246 -1.73790  -0.31685  0.91093 -0.15487 -2.21069
## 239  -0.95197  0.48246 -1.22751  -0.31685  0.52135 -0.15487 -0.71727
## 240   1.09449  0.48246 -0.05921  -0.31685 -1.86962  0.63779  0.72330
## 241   0.49788  0.48246  1.16365  -0.31685  0.62967 -1.23177 -0.01928
## 242  -0.07854  0.48246 -1.22751  -0.31685  2.12700 -1.23177 -0.84732
```

```
## 243  -0.95197  0.48246  -0.61113  -0.31685  1.49158 -1.50796 -3.27393
## 244  -0.07854  0.48246   0.45468  -0.31685 -0.58016  1.11406  0.72330
## 245   0.49788 -0.48246   0.45468  -0.31685  1.98437 -1.50796 -0.17779
## 246  -0.07854  0.48246  -0.61113  -0.31685 -0.24649 -0.94779 -1.68062
## 247  -0.07854  0.48246  -0.05921  -0.31685  1.37297 -0.69509 -1.27553
## 248   1.09449 -0.48246   1.16365  -0.31685 -0.92104 -0.30033 -1.11902
## 249   1.09449  0.48246   1.98437  -0.31685 -2.42317  0.16767 -0.31776
## 250   1.09449  0.48246  -0.05921  -0.31685  1.13281  0.32197 -0.17779
## 251   1.09449 -0.48246   0.45468  -0.31685 -0.46725  0.16767 -0.31776
## 252   0.49788  0.48246   0.45468  -0.31685  0.62967 -0.94779 -0.71727
## 253  -0.95197  0.48246   1.16365  -0.31685 -1.43907  0.96248 -0.58331
## 254   1.09449  0.48246   1.98437  -0.31685 -0.79151  0.16767  0.29338
## 255  -0.07854 -0.48246  -0.05921  -0.31685  1.37297 -0.69509 -0.71727
## 256   0.49788  0.48246   1.16365  -0.31685 -1.19430  1.74091  1.06238
## 257  -0.95197  0.48246  -0.61113  -0.31685 -0.46725  0.63779 -0.31776
## 258   0.49788 -0.48246   1.98437  -0.31685  0.04257  0.00332  0.88309
## 259   2.59171 -0.48246   1.98437  -0.31685  0.52135 -0.15487 -0.45174
## 260   2.59171 -0.48246  -0.05921  -0.31685 -1.05308 -0.30033  0.29338
## 261   1.09449  0.48246  -0.05921  -0.31685 -0.46725  0.96248  2.15324
## 262   1.82213 -0.48246   0.45468  -0.31685 -0.67825 -0.43999  0.72330
## 263   1.09449 -0.48246   1.16365  -0.50212 -0.92104  0.80523 -0.31776
## 264   1.82213  0.48246  -2.43591  -0.31685 -1.05308  0.00332 -0.01928
## 265  -0.95197  0.48246   0.45468  -0.31685 -0.46725  0.16767 -0.01928
## 266   0.49788  0.48246   0.45468  -1.10702 -0.24649  0.00332 -0.45174
## 267   1.82213 -0.48246   0.45468  -0.31685 -1.19430 -0.15487 -0.17779
## 268   0.49788 -0.48246  -0.05921  -1.10702 -0.92104  1.45421 -1.27553
## 269   1.09449  0.48246   1.16365  -0.31685 -1.05308  1.74091  0.58331
## 270   0.49788  0.48246   1.16365  -1.10702 -0.92104  0.16767 -0.84732
## 271   1.09449  0.48246   1.16365  -0.31685 -2.34360  2.12700  1.65653
## 272   1.09449  0.48246   1.16365  -0.31685  0.73545 -0.69509  0.44585
## 273   1.82213 -0.48246   1.98437  -0.31685 -1.05308  0.00332 -0.01928
## 274  -0.07854  0.48246   0.45468  -0.31685  0.22393  0.16767 -1.11902
## 275   0.49788 -0.48246   1.16365  -0.31685  0.22393  0.96248  0.14143
## 276   0.49788  0.48246   1.16365  -0.31685  0.41667 -0.43999  0.14143
## 277   1.82213 -0.48246   1.98437  -0.31685 -0.92104  0.47617 -0.58331
## 278  -0.07854 -0.48246  -0.61113  -0.31685 -1.05308  1.45421  1.06238
## 279   1.09449  0.48246   0.45468  -0.31685 -0.24649 -0.43999 -0.31776
## 280   1.09449 -0.48246   1.16365  -0.31685 -1.32828  0.80523  0.29338
## 281   1.82213 -0.48246   1.16365  -0.31685 -0.05188  0.16767  0.72330
## 282   1.09449  0.48246  -0.61113  -0.31685  0.04257 -0.30033 -2.21069
## 283   1.09449  0.48246   1.16365  -0.31685 -0.05188  0.00332  0.14143
## 284   1.09449 -0.48246   0.45468  -0.31685 -0.92104  1.58487  0.14143
## 285   0.49788 -0.48246  -0.05921  -0.31685 -1.19430 -0.80615  0.72330
## 286   0.49788 -0.48246   0.45468  -0.31685 -0.92104  1.28610 -0.71727
## 287   1.09449  0.48246   0.45468  -0.31685  0.22393 -1.37639 -0.17779
## 288   1.09449 -0.48246   1.16365  -0.31685  0.31287  0.32197 -0.45174
## 289  -0.07854 -0.48246  -0.61113  -0.31685  0.62967  0.32197 -0.71727
## 290  -0.07854  0.48246   1.16365  -0.31685 -2.05048  0.63779 -0.71727
## 291   0.49788  0.48246  -0.05921  -1.10702 -0.92104  0.96248 -0.84732
## 292   0.49788  0.48246  -0.61113  -0.31685  0.62967 -1.09207  0.44585
## 293   1.09449  0.48246  -0.05921  -0.31685 -0.05188 -0.15487 -0.58331
## 294  -0.07854  0.48246  -0.05921  -0.31685  1.13281  0.00332 -0.17779
## 295  -0.95197  0.48246  -1.43719  -0.31685 -0.34799  0.47617 -0.17779
## 296   0.49788 -0.48246  -0.05921  -0.31685  1.37297 -0.43999  0.14143
```

```
## 297   2.59171  0.48246 -1.73790  -0.31685  0.82562 -0.80615  0.14143
## 298   0.49788  0.48246  0.45468  -0.31685  0.13606 -0.30033 -1.42424
## 299   0.49788  0.48246 -0.05921  -0.31685  0.82562 -0.94779 -0.17779
## 300  -0.07854  0.48246 -0.61113  -0.31685 -0.24649 -0.43999 -1.55521
## 301   0.49788  0.48246  1.98437  -0.31685  0.52135 -0.43999 -0.71727
## 302   1.82213  0.48246 -0.05921  -0.31685 -0.14882  0.63779 -0.01928
## 303   1.09449  0.48246  0.45468  -0.31685 -0.34799  0.00332 -1.27553
## 304   1.09449  0.48246  0.45468  -0.31685 -1.05308 -2.32338 -1.27553
## 305   0.49788 -0.48246  1.16365  -0.31685  0.22393 -1.23177 -0.84732
## 306   1.09449 -0.48246  1.16365  -0.31685 -0.46725 -0.57545 -0.71727
## 307   0.49788  0.48246 -1.22751  -0.31685 -1.69163  0.80523 -0.17779
## 308   0.49788 -0.48246  1.16365  -0.31685 -0.79151  0.16767 -0.17779
## 309   1.09449  0.48246  0.45468  -0.31685 -1.32828 -0.15487 -0.84732
## 310  -0.95197  0.48246 -1.73790  -0.31685  1.13281 -0.57545 -1.97495
## 311   1.09449  0.48246  1.16365  -0.31685 -0.34799  0.00332 -0.45174
## 312  -0.07854  0.48246  1.16365  -0.31685  0.04257  1.74091  0.29338
## 313  -0.95197  0.48246 -1.22751  -0.31685 -0.58016  0.16767 -0.71727
## 314   1.09449  0.48246  1.98437  -0.31685 -0.79151  0.80523  0.58331
## 315   1.82213  0.48246  0.45468  -0.31685 -0.46725  0.80523  1.06238
## 316   0.49788 -0.48246  0.45468  -1.10702 -0.79151  1.93886 -0.97631
## 317  -0.07854  0.48246 -0.05921  -0.31685  0.04257  0.00332 -0.71727
## 318   1.09449  0.48246 -1.73790   0.11440  0.31287 -0.30033 -1.27553
## 319   1.09449  0.48246  0.45468  -0.31685  0.73545 -0.30033 -0.58331
## 320   0.49788  0.48246 -0.61113  -0.31685  0.52135 -0.30033 -0.97631
## 321  -0.95197  0.48246  0.45468  -0.31685 -0.79151  0.47617  0.44585
## 322   1.09449 -0.48246 -1.43719  -0.31685  0.91093 -1.09207 -1.68062
## 323  -0.07854  0.48246  1.98437  -0.31685  0.22393  0.00332  1.43533
## 324   0.49788  0.48246 -0.05921  -0.31685 -0.79151  1.28610 -0.17779
## 325   0.49788 -0.48246 -1.22751  -0.31685 -0.58016 -1.63340 -1.97495
## 326   1.09449 -0.48246  1.16365  -0.31685 -1.86962  1.58487 -0.01928
## 327  -0.07854  0.48246 -0.05921  -0.31685  0.22393 -0.30033 -1.27553
## 328   1.09449 -0.48246 -0.05921  -0.31685 -0.34799  0.47617 -0.97631
## 329   1.09449  0.48246 -0.05921  -0.31685 -1.05308  0.47617 -0.71727
## 330   0.49788 -0.48246 -2.43591  -0.31685 -0.24649 -0.43999 -0.97631
## 331   1.82213  0.48246 -1.22751  -0.31685 -0.46725 -0.43999 -1.55521
## 332  -0.95197  0.48246 -0.61113  -0.31685  2.82196 -1.92173 -0.84732
## 333   2.59171 -0.48246 -0.61113  -0.31685 -1.32828 -0.43999 -0.97631
## 334   2.59171  0.48246 -1.73790  -0.31685 -0.14882 -0.15487 -1.42424
## 335  -0.07854  0.48246  1.16365  -0.31685  0.41667 -0.57545  0.58331
## 336   1.09449  0.48246  1.16365  -1.10702  0.62967  0.16767 -0.17779
## 337   1.09449  0.48246 -0.05921  -0.31685 -0.58016  0.32197  1.06238
## 338   0.49788 -0.48246  1.98437  -0.31685 -1.86962  1.28610  0.29338
## 339   1.09449  0.48246 -0.05921  -0.31685 -0.14882 -0.30033 -0.58331
## 340   0.49788  0.48246  1.16365  -0.31685 -0.46725  1.11406  0.88309
## 341   1.82213  0.48246 -0.05921  -0.31685 -1.69163  0.96248 -0.31776
## 342   1.82213  0.48246 -0.05921  -0.31685  0.62967  0.00332 -0.01928
## 343  -0.95197  0.48246 -2.43591  -0.31685  0.22393 -0.15487 -0.01928
## 344   0.49788  0.48246  1.16365  -0.31685 -1.86962  0.16767  1.43533
## 345   0.49788  0.48246  0.45468  -0.31685  0.04257  0.47617 -0.17779
## 346   1.09449  0.48246  0.45468  -0.31685 -0.14882  1.74091  1.65653
## 347   1.09449 -0.48246  1.16365  -0.31685 -0.92104  0.80523 -0.01928
## 348   1.09449 -0.48246 -0.05921  -1.10702 -0.58016  0.32197 -0.45174
## 349   1.09449 -0.48246  0.45468  -0.31685  0.52135 -0.69509 -0.58331
## 350   0.49788  0.48246 -0.61113  -0.31685  1.02119 -0.57545  0.88309
```

```
## 351   0.49788 -0.48246  -0.05921  -0.31685  0.41667  0.16767 -0.01928
## 352   1.09449 -0.48246   0.45468  -0.31685 -0.14882 -0.69509  0.44585
## 353  -0.07854 -0.48246  -1.73790  -0.31685 -0.46725  0.00332 -0.17779
## 354   0.49788 -0.48246  -0.05921  -0.31685  0.22393 -0.15487 -0.01928
## 355  -0.07854 -0.48246  -2.43591  -0.31685  0.62967  0.00332  1.24033
## 356   1.09449 -0.48246   0.45468  -0.31685 -1.19430 -0.15487 -1.27553
## 357   0.49788 -0.48246  -1.73790  -0.31685  2.46262 -1.23177 -0.97631
## 358   0.49788 -0.48246  -0.61113  -0.31685  0.41667 -0.80615  0.88309
## 359  -0.07854  0.48246  -0.61113  -0.31685 -0.58016  1.58487  0.58331
## 360   1.09449  0.48246   0.45468  -0.31685  0.52135  0.80523 -0.01928
## 361   0.49788  0.48246  -0.05921  -0.31685  0.62967  0.63779  1.06238
## 362   1.09449 -0.48246   0.45468  -0.31685  0.41667  0.32197 -0.17779
## 363   1.09449  0.48246  -0.05921  -0.31685  1.23461 -0.15487 -1.27553
## 364   0.49788  0.48246   1.98437  -0.31685  0.41667 -0.15487  0.14143
## 365   1.09449 -0.48246  -0.05921  -0.50212 -0.14882  0.00332 -0.58331
## 366   0.49788  0.48246   0.45468  -0.50212 -1.05308  0.47617 -0.17779
## 367   1.09449  0.48246   0.45468  -0.31685 -1.19430  0.47617  0.29338
## 368  -0.07854 -0.48246  -0.05921  -0.31685 -0.05188 -0.94779 -1.68062
## 369  -0.07854  0.48246   0.45468  -0.31685  1.23461  0.32197  0.29338
## 370  -0.95197 -0.48246  -1.22751  -0.31685  0.22393  0.32197  0.14143
## 371   0.49788  0.48246   0.45468  -0.31685  1.02119  2.32338  1.65653
## 372  -0.95197  0.48246  -0.61113  -0.31685  0.91093  0.96248 -1.11902
## 373   1.09449 -0.48246   0.45468  -0.31685 -0.34799 -1.76250  0.72330
## 374   1.82213  0.48246   1.16365  -0.31685 -0.24649  1.28610  0.88309
## 375   2.59171 -0.48246  -0.05921  -0.31685  0.13606  0.16767  0.29338
## 376   1.09449  0.48246   1.16365  -0.31685 -0.92104  0.00332 -0.71727
## 377  -0.07854  0.48246   0.45468  -0.31685 -0.46725 -0.57545 -1.68062
## 378  -0.07854 -0.48246   1.16365  -0.31685  0.82562 -0.94779  0.58331
## 379   1.09449  0.48246  -0.05921  -0.31685  0.82562 -0.43999  0.72330
## 380   0.49788 -0.48246   0.45468  -0.31685 -0.46725  1.11406 -0.31776
## 381   0.49788 -0.48246  -1.73790  -0.31685 -0.34799 -0.57545 -1.11902
## 382   0.49788  0.48246   1.16365  -0.31685 -0.79151  0.16767 -0.17779
## 383   1.09449  0.48246   0.45468  -0.31685  0.13606 -0.30033 -0.45174
## 384   1.09449  0.48246   0.45468  -1.10702 -0.24649  0.16767 -0.97631
## 385  -0.07854 -0.48246  -0.05921  -0.31685 -0.58016 -0.43999 -2.39883
## 386   1.09449 -0.48246  -1.22751  -0.31685 -2.05048  0.47617 -1.11902
## 387  -0.07854 -0.48246   0.45468  -1.10702 -1.32828  0.32197 -0.58331
## 388   0.49788 -0.48246  -0.05921  -0.31685  0.13606 -0.30033  0.14143
## 389  -0.07854 -0.48246   1.98437  -0.31685 -0.58016  0.32197 -0.17779
## 390   0.49788  0.48246  -0.61113  -0.31685 -0.67825 -0.43999  0.29338
## 391  -0.07854  0.48246   0.45468  -0.31685  0.62967  0.00332  0.14143
## 392   0.49788  0.48246  -1.43719  -0.31685 -0.46725  0.32197 -0.58331
## 393  -0.07854  0.48246  -0.05921  -0.31685 -0.79151 -0.15487 -2.21069
## 394  -0.07854 -0.48246  -0.05921  -0.31685 -1.43907  0.63779 -0.17779
## 395   0.49788 -0.48246   0.45468  -0.31685  0.22393  1.28610 -0.45174
## 396   0.49788  0.48246   0.45468  -0.31685 -1.86962  0.63779 -0.97631
## 397   1.09449 -0.48246  -0.05921  -0.31685  0.13606  0.47617 -0.84732
## 398  -0.07854  0.48246   1.16365  -0.31685 -0.79151  0.32197  0.29338
## 399   1.09449 -0.48246   1.16365  -0.31685 -0.92104  1.28610  1.43533
## 400  -0.07854  0.48246  -1.22751  -0.31685 -0.14882 -0.15487 -1.97495
## 401   1.09449 -0.48246  -1.73790  -0.31685  0.13606 -1.09207 -0.45174
## 402  -0.95197 -0.48246  -0.61113  -0.31685 -0.92104 -0.69509 -0.31776
## 403  -0.95197 -0.48246   0.45468  -0.31685 -1.43907  0.63779 -0.31776
## 404   1.09449 -0.48246  -1.43719  -0.31685  0.91093 -0.15487 -0.17779
```

```
## 405  -0.95197  0.48246 -2.43591 -0.31685  0.13606  1.58487  1.88511
## 406   1.09449  0.48246  0.45468 -0.31685  1.83990 -0.94779  1.65653
## 407   0.49788 -0.48246 -1.43719  0.11440  1.37297 -0.15487 -0.31776
## 408  -0.07854 -0.48246  0.45468 -0.31685 -0.67825  0.16767  0.58331
## 409   0.49788  0.48246 -0.05921 -0.31685 -1.55078  0.80523  0.72330
## 410   1.09449 -0.48246 -1.22751 -0.31685  1.02119 -1.37639  0.44585
## 411   0.49788  0.48246 -0.61113 -0.31685 -0.46725 -1.50796  0.29338
## 412  -0.07854  0.48246  0.45468 -0.31685  0.13606  1.11406 -0.97631
## 413   0.49788 -0.48246 -0.61113 -0.31685  0.04257 -0.15487  0.72330
## 414   0.49788  0.48246 -0.61113 -0.31685 -1.86962  0.32197 -1.11902
## 415  -0.95197 -0.48246 -1.22751 -0.31685 -0.58016 -1.09207 -0.58331
## 416  -0.95197 -0.48246 -0.61113 -0.31685 -0.05188 -0.69509  0.29338
## 417  -0.07854 -0.48246 -0.61113 -0.31685 -0.79151  0.96248  0.14143
## 418  -0.07854  0.48246  1.98437 -0.31685  0.31287  0.00332  1.06238
## 419  -0.07854 -0.48246  0.45468 -0.31685  0.62967  0.16767 -0.17779
## 420  -0.95197 -0.48246 -1.22751 -0.31685  0.31287  0.80523 -0.01928
## 421  -0.07854 -0.48246 -0.61113 -0.31685  0.31287 -1.76250 -1.42424
## 422   0.49788 -0.48246 -0.05921 -0.31685 -0.79151 -0.15487 -0.01928
## 423   0.49788  0.48246  0.45468  0.12600 -1.05308  0.80523 -0.71727
## 424   1.09449  0.48246  1.98437 -0.31685  0.52135  0.00332  1.65653
## 425   0.49788 -0.48246  0.45468 -0.31685 -0.34799 -0.30033  0.14143
## 426   1.09449 -0.48246 -1.73790 -0.31685  0.22393  0.00332 -0.31776
## 427   0.49788 -0.48246  0.45468 -0.31685  0.62967 -0.80615 -0.17779
## 428  -0.07854  0.48246 -1.22751 -0.31685 -0.92104 -0.15487 -2.09015
## 429  -0.07854 -0.48246 -2.43591 -0.31685  0.22393 -0.94779 -1.42424
## 430  -0.07854  0.48246 -1.22751 -0.31685  0.04257  0.32197 -0.97631
## 431  -0.07854 -0.48246  0.45468 -0.31685 -0.24649 -0.30033 -1.68062
## 432   1.09449  0.48246 -1.73790 -0.31685  0.22393  1.93886 -1.11902
## 433  -0.95197  0.48246  0.45468 -0.31685 -0.14882  0.96248 -1.55521
## 434  -0.07854  0.48246  0.45468 -0.31685  0.04257  0.47617 -1.11902
## 435   1.82213 -0.48246 -0.61113 -0.31685 -0.67825 -0.30033  1.06238
## 436   1.09449 -0.48246 -1.73790 -0.31685 -1.43907  0.47617  0.29338
## 437  -0.07854  0.48246  0.45468 -0.31685  2.82196 -0.43999 -0.84732
## 438  -0.95197  0.48246 -0.61113 -0.31685  1.37297 -0.30033  0.29338
## 439   0.49788  0.48246  0.45468 -0.31685 -0.46725  0.47617 -0.58331
## 440  -0.95197  0.48246 -0.61113 -0.31685 -0.67825  1.45421 -2.09015
## 441  -0.07854  0.48246  1.16365 -0.31685 -0.92104  0.00332  0.29338
## 442   0.49788 -0.48246 -1.73790 -0.31685  0.41667  0.63779 -0.71727
## 443   1.09449  0.48246 -0.05921 -0.31685 -0.46725  0.80523  0.58331
## 444   1.09449  0.48246  0.45468 -0.31685  1.02119 -0.94779 -0.58331
## 445  -0.07854  0.48246  0.45468 -0.31685  0.22393 -1.09207  0.44585
## 446  -0.07854 -0.48246  1.16365 -0.31685  0.04257 -0.15487 -0.84732
## 447  -0.95197  0.48246 -0.61113 -0.31685  1.13281  1.45421  1.06238
## 448  -0.95197 -0.48246  0.45468 -0.31685 -0.34799  0.63779  0.44585
## 449  -0.95197  0.48246  0.45468 -0.31685  0.73545 -0.15487 -0.84732
## 450  -0.95197  0.48246  1.16365 -0.31685 -1.19430  0.80523 -0.84732
## 451   0.49788  0.48246  0.45468 -0.31685 -0.14882 -0.15487  0.14143
## 452  -0.07854 -0.48246  0.45468 -0.31685  1.23461 -1.76250 -0.31776
## 453   1.09449 -0.48246  1.98437 -0.31685 -0.14882 -0.57545  0.88309
## 454  -0.95197  0.48246  0.45468 -0.31685  0.82562 -0.80615  0.72330
## 455   0.49788 -0.48246  0.45468 -0.31685  1.60383 -0.43999  0.29338
## 456   0.49788  0.48246  1.16365 -0.31685 -0.46725 -0.57545  0.14143
## 457  -0.95197  0.48246  0.45468 -0.31685  0.62967  0.00332  0.14143
## 458  -0.07854 -0.48246  1.16365 -0.31685  0.91093  1.28610  1.88511
```

```
## 459  -0.95197  0.48246   0.45468  -0.31685  1.23461 -1.37639  1.24033
## 460  -0.95197 -0.48246  -0.61113  -0.31685  1.49158 -1.37639 -2.63199
## 461   0.49788 -0.48246  -0.61113  -0.31685  0.82562  0.47617  1.43533
## 462   1.09449 -0.48246  -1.22751  -0.31685  1.02119 -0.94779 -0.58331
## 463  -0.95197  0.48246   0.45468  -0.31685  0.31287 -0.80615  1.06238
## 464  -0.95197  0.48246   1.16365  -0.31685  1.37297 -1.09207 -0.01928
## 465  -0.95197  0.48246   0.45468  -0.50212  0.31287  0.63779  1.06238
## 466   1.09449 -0.48246   0.45468  -0.31685  0.22393  0.00332  1.24033
## 467   0.49788 -0.48246   0.45468  -0.31685 -0.05188  0.16767 -0.71727
## 468  -0.07854 -0.48246   0.45468  -0.31685 -1.19430  1.74091  1.43533
## 469   1.09449  0.48246  -1.73790  -0.31685  2.82196 -1.63340 -1.42424
## 470  -0.95197  0.48246   0.45468  -0.31685  0.13606  0.80523  0.29338
## 471  -0.95197 -0.48246   1.16365  -0.22166 -0.92104  2.57309  1.06238
## 472  -0.95197  0.48246  -2.43591  -0.31685  0.31287  0.00332 -0.17779
## 473   0.49788  0.48246  -0.61113  -0.31685  1.37297  0.00332 -0.45174
## 474   1.82213  0.48246   0.45468   0.12600 -0.24649  0.96248  0.14143
## 475   1.09449  0.48246   0.45468  -0.31685 -1.19430  0.96248 -0.45174
## 476   0.49788 -0.48246   0.45468  -0.31685  1.72012 -0.94779  0.58331
## 477   0.49788  0.48246  -0.05921  -0.31685  1.49158 -0.69509 -0.71727
## 478  -0.07854  0.48246   0.45468  -0.31685  0.41667  0.80523 -0.31776
## 479  -0.07854  0.48246   1.16365  -0.31685  0.41667 -0.43999  1.43533
## 480  -0.95197 -0.48246  -0.61113  -0.31685  1.13281 -0.80615 -0.17779
## 481   0.49788  0.48246   0.45468  -0.31685  1.02119  0.16767  0.29338
## 482   0.49788 -0.48246  -0.61113  -0.31685 -0.67825 -0.15487  0.29338
## 483  -0.07854  0.48246   0.45468  -0.31685  1.23461  0.47617  1.43533
## 484   0.49788  0.48246  -1.73790  -0.31685 -0.58016  0.96248 -0.58331
## 485   1.09449  0.48246  -1.73790  -0.31685 -0.46725  0.32197 -1.55521
## 486  -0.07854 -0.48246  -1.22751  -0.31685  1.49158 -1.63340  1.06238
## 487   0.49788  0.48246  -1.22751  -0.31685  1.83990 -1.76250  1.24033
## 488  -0.07854 -0.48246  -1.73790  -0.31685  0.41667 -1.37639  0.14143
## 489  -0.95197 -0.48246  -2.43591  -0.31685  1.98437 -1.37639  0.29338
## 490  -0.95197 -0.48246  -0.61113  -0.31685 -1.05308  1.11406  0.88309
## 491   1.09449  0.48246  -0.05921  -0.31685  0.62967  0.80523  0.44585
## 492  -0.95197 -0.48246  -1.22751  -0.31685 -0.92104  0.47617  0.44585
## 493  -0.95197 -0.48246  -0.05921  -0.31685  0.52135 -0.57545  0.88309
## 494  -0.95197 -0.48246  -0.61113  -0.31685  0.73545 -1.63340  0.88309
## 495  -0.95197 -0.48246  -0.05921   0.11440 -1.19430 -0.43999  0.44585
## 496   1.82213 -0.48246  -0.61113  -0.31685 -0.79151  0.16767  0.58331
## 497  -0.07854 -0.48246   1.16365  -0.31685  0.04257  1.28610  2.90161
## 498  -0.07854 -0.48246  -1.73790  -0.31685 -0.05188 -0.57545  0.88309
## 499   1.82213  0.48246  -0.61113  -0.31685  1.37297 -0.69509  1.43533
## 500   0.49788  0.48246  -0.05921  -0.31685  0.04257  0.47617 -0.84732
## 501  -0.07854  0.48246  -0.05921  -0.31685 -0.58016 -0.15487 -1.42424
## 502  -0.95197 -0.48246  -0.61113  -0.31685 -1.55078  0.63779 -0.31776
## 503   1.82213  0.48246  -0.05921  -0.31685  0.04257 -0.30033 -0.31776
## 504   0.49788 -0.48246  -1.73790  -0.31685 -0.05188  0.00332 -0.31776
## 505   1.09449 -0.48246  -0.05921  -0.31685  0.41667  0.47617  0.29338
## 506   0.49788 -0.48246   0.45468  -0.31685 -0.46725  0.63779  0.88309
## 507  -0.07854 -0.48246   0.45468  -0.31685  0.13606 -0.30033 -0.97631
## 508   0.49788 -0.48246  -1.73790  -0.31685  1.49158 -1.09207 -1.11902
## 509   0.49788  0.48246   1.16365  -0.31685 -1.05308  1.11406 -0.31776
## 510   0.49788 -0.48246   0.45468  -0.31685  0.04257  0.96248 -0.58331
## 511   1.09449  0.48246   1.16365  -0.31685  0.41667  0.47617 -0.17779
## 512  -0.95197 -0.48246  -0.61113  -0.31685  0.41667  0.47617  0.58331
```

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## 513   1.82213 -0.48246  -1.73790  -0.31685 -0.14882 -0.30033 -0.17779
## 514   0.49788 -0.48246  -1.73790  -0.31685  0.91093 -0.30033 -1.55521
## 515  -0.95197  0.48246  -1.43719  -0.31685 -1.43907  1.93886  0.44585
## 516   0.49788  0.48246  -1.73790  -0.31685 -0.14882  0.16767 -0.71727
## 517  -0.07854  0.48246   1.16365  -0.31685  0.31287 -0.15487  0.29338
## 518  -0.07854 -0.48246  -0.05921  -0.31685  0.52135 -0.57545  0.14143
## 519  -0.07854 -0.48246   1.16365  -0.31685 -0.14882  0.32197 -1.27553
## 520   0.49788  0.48246   0.45468  -0.31685  0.22393 -0.30033 -0.97631
## 521   1.09449  0.48246  -1.73790  -0.31685  0.62967 -0.30033 -0.84732
## 522  -0.95197 -0.48246  -0.61113  -0.31685  0.04257  0.32197 -0.01928
## 523  -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  0.47617 -0.17779
## 524   0.49788  0.48246  -2.43591  -0.31685  0.13606 -0.80615 -1.82919
## 525   1.09449  0.48246   0.45468  -0.31685 -0.67825  0.63779  1.06238
## 526   1.82213 -0.48246  -1.22751  -0.31685 -1.86962  0.47617 -1.11902
## 527  -0.95197 -0.48246  -0.05921  -0.31685  0.91093 -1.37639 -0.31776
## 528   0.49788 -0.48246   1.98437  -0.31685  0.62967 -0.15487 -0.17779
## 529  -0.07854  0.48246  -0.05921  -0.31685  0.73545  1.11406 -0.01928
## 530   1.82213 -0.48246   0.45468  -0.31685  0.91093  0.00332  0.58331
## 531   1.09449 -0.48246   0.45468  -0.31685  1.02119 -1.50796 -0.71727
## 532  -0.95197  0.48246   0.45468  -0.31685 -0.24649  0.16767 -0.71727
## 533  -0.07854 -0.48246   1.16365  -0.31685 -0.34799 -0.15487 -0.71727
## 534   0.49788  0.48246   1.16365  -0.31685 -1.86962  2.32338 -0.45174
## 535  -0.07854  0.48246   0.45468  -0.31685  0.91093  0.00332  0.88309
## 536  -0.95197  0.48246   0.45468  -0.31685  1.37297  0.80523 -0.97631
## 537   1.09449  0.48246  -0.61113  -0.50212  0.73545 -0.30033 -1.27553
## 538   0.49788  0.48246   0.45468  -0.31685  1.13281 -0.30033 -0.01928
## 539   1.09449 -0.48246   1.16365  -0.31685 -1.32828  1.28610 -0.17779
## 540   1.09449  0.48246   0.45468  -0.31685 -1.05308  0.32197 -0.17779
## 541   1.09449  0.48246   0.45468  -1.10702  0.22393  0.80523 -0.01928
## 542   0.49788 -0.48246  -1.43719  -0.31685  0.73545  0.80523  0.88309
## 543  -0.07854  0.48246   0.45468  -0.31685  0.82562  0.63779 -0.97631
## 544  -0.95197  0.48246  -1.73790  -0.31685  1.23461 -0.57545 -0.71727
## 545   0.49788  0.48246  -0.05921  -0.31685  1.60383  0.16767 -0.45174
## 546   1.09449  0.48246  -0.61113  -0.31685 -0.92104 -0.43999  0.88309
## 547  -0.07854  0.48246   1.16365  -0.31685 -1.86962 -0.69509 -0.97631
## 548  -0.95197 -0.48246   0.45468  -0.31685  1.23461 -0.43999  0.14143
## 549  -0.07854  0.48246   1.16365  -0.31685 -1.19430  1.11406  0.14143
## 550  -0.95197  0.48246   0.45468  -0.31685 -0.14882 -0.43999 -1.42424
## 551   0.49788  0.48246   1.16365  -0.31685 -0.79151  1.28610  0.14143
## 552  -0.95197  0.48246   1.16365  -0.31685  1.72012 -1.50796 -0.17779
## 553  -0.07854  0.48246   1.16365  -0.22166  1.02119 -1.92173 -0.45174
## 554  -0.07854  0.48246   1.98437  -0.31685  0.62967  0.47617 -0.45174
## 555   1.09449  0.48246   1.16365  -0.31685  0.22393 -0.94779 -1.11902
## 556  -0.95197  0.48246   0.45468  -0.31685 -0.14882 -0.30033  0.29338
## 557  -0.07854  0.48246   0.45468  -0.31685 -1.69163  0.96248 -0.17779
## 558  -0.95197  0.48246   0.45468  -0.31685 -0.46725 -0.15487 -0.58331
## 559   1.09449  0.48246   0.45468  -0.31685 -0.79151  0.00332  0.44585
## 560  -0.95197  0.48246   0.45468  -0.31685  1.02119  0.16767 -0.71727
## 561   0.49788  0.48246   0.45468  -0.31685  0.62967  0.63779  0.44585
## 562   0.49788  0.48246   1.16365   0.11440  2.61139  0.47617 -1.55521
## 563  -0.07854  0.48246   1.16365  -0.31685  0.82562  0.32197 -0.58331
## 564   1.09449  0.48246  -0.61113  -0.31685 -0.46725 -0.43999 -0.01928
## 565   1.09449  0.48246   1.16365  -0.31685  0.31287 -0.80615  0.14143
## 566  -0.95197  0.48246   0.45468  -0.31685  0.91093  1.11406 -0.97631
```

```
## 567  -0.95197 -0.48246   0.45468  -0.31685  1.83990  0.63779  1.24033
## 568   0.49788 -0.48246   1.16365  -0.31685  1.02119 -0.80615 -0.17779
## 569   0.49788  0.48246   1.98437  -0.31685 -0.34799  0.80523 -0.17779
## 570   0.49788  0.48246  -0.05921  -0.31685  0.22393  1.11406 -1.11902
## 571  -0.95197  0.48246   1.16365  -0.31685 -1.69163  1.93886 -0.17779
## 572   0.49788 -0.48246  -0.05921  -0.31685  1.23461 -1.23177 -1.68062
## 573   1.82213  0.48246  -0.61113  -0.31685 -0.92104  0.96248  0.44585
## 574   0.49788  0.48246   0.45468  -0.31685  2.12700 -1.50796 -1.82919
## 575   0.49788 -0.48246  -1.73790  -0.31685 -1.86962  0.80523 -1.55521
## 576  -0.07854  0.48246   1.16365   0.11440  0.82562  0.32197  0.14143
## 577  -0.07854  0.48246   0.45468  -0.31685  1.02119  0.80523 -0.71727
## 578   1.09449  0.48246   1.16365  -0.31685  1.02119 -0.15487  0.29338
## 579  -0.95197  0.48246   1.16365  -0.31685 -0.14882  0.80523  0.58331
## 580   0.49788  0.48246  -0.61113  -0.31685 -1.19430  0.00332 -1.11902
## 581  -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  1.58487  0.44585
## 582   0.49788  0.48246  -0.05921  -0.31685  0.31287  1.28610  1.65653
## 583  -0.95197  0.48246  -0.61113  -0.31685  0.62967  0.00332 -0.58331
## 584  -0.07854 -0.48246   0.45468  -0.31685 -0.24649  0.16767 -0.31776
## 585  -0.95197 -0.48246  -0.05921  -0.31685  0.73545 -0.57545  1.24033
## 586  -0.95197 -0.48246  -0.61113  -0.31685  0.31287  0.32197 -0.31776
## 587  -0.07854  0.48246  -1.73790  -0.31685 -0.46725  1.58487  0.44585
## 588   1.82213  0.48246  -0.61113  -0.31685 -1.32828 -0.15487  0.29338
## 589   0.49788 -0.48246  -2.43591  -0.31685 -0.58016  0.00332 -0.58331
## 590   0.49788  0.48246   0.45468  -0.31685  0.41667 -0.43999 -0.31776
## 591   0.49788  0.48246  -0.05921  -0.31685 -2.75696  0.96248  0.14143
## 592  -0.07854 -0.48246  -0.05921  -0.22166 -0.05188  0.96248 -0.01928
## 593   0.49788 -0.48246  -1.73790  -0.31685 -0.34799 -0.57545 -0.58331
## 594   1.09449 -0.48246  -0.05921  -0.31685  0.31287  0.16767 -0.45174
## 595  -0.95197 -0.48246  -1.73790  -0.31685 -1.43907  0.80523  0.72330
## 596   1.82213  0.48246  -0.05921  -0.31685 -0.34799 -0.43999 -0.31776
## 597   1.09449  0.48246  -0.05921  -0.31685  0.04257  0.16767 -0.58331
## 598  -0.95197 -0.48246  -0.61113  -0.31685  0.52135 -0.15487  0.29338
## 599   1.09449  0.48246   1.16365  -0.31685  0.73545 -0.57545 -0.58331
## 600  -0.95197 -0.48246  -0.61113  -0.31685  1.02119  1.11406  0.72330
## 601  -0.95197 -0.48246  -0.61113  -0.31685  0.52135 -1.63340 -1.11902
## 602  -0.95197 -0.48246  -0.61113  -0.31685  1.98437 -0.94779  0.72330
## 603  -0.07854 -0.48246   0.45468  -0.31685 -0.67825 -0.80615 -0.45174
## 604   0.49788  0.48246  -0.61113  -0.31685  0.41667  0.32197  0.29338
## 605   1.82213  0.48246   1.16365  -0.31685 -2.52197  1.11406  1.88511
## 606  -0.95197 -0.48246   0.45468  -0.31685 -0.46725  0.00332 -1.11902
## 607   1.09449 -0.48246  -0.61113  -0.31685 -0.05188  0.00332  0.88309
## 608  -0.07854 -0.48246   0.45468  -0.31685 -1.69163  1.28610  1.24033
## 609   1.82213  0.48246  -0.05921  -0.31685  1.23461 -0.80615 -1.42424
## 610  -0.07854 -0.48246  -0.61113  -0.31685 -0.92104  0.96248  0.88309
## 611  -0.07854 -0.48246   0.45468  -0.31685 -0.67825  0.32197 -0.58331
## 612   0.49788 -0.48246   0.45468  -0.31685 -1.19430  0.16767 -0.17779
## 613  -0.07854  0.48246   1.16365  -0.31685  1.98437 -0.30033 -0.31776
## 614  -0.07854  0.48246  -2.43591  -0.31685 -0.24649  0.63779 -0.71727
## 615   0.49788  0.48246   1.16365  -0.31685  0.13606 -0.15487 -0.45174
## 616   1.09449  0.48246  -0.61113  -0.31685  1.02119  0.16767 -0.17779
## 617   1.09449 -0.48246  -0.05921  -0.31685 -0.92104  1.28610 -0.31776
## 618  -0.07854  0.48246   0.45468  -0.31685 -0.05188  1.11406  0.88309
## 619   1.82213 -0.48246   1.16365  -0.31685 -0.67825 -0.94779  0.72330
## 620  -0.95197 -0.48246  -1.22751  -0.31685  0.52135 -1.37639 -0.45174
```

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## 621   0.49788 -0.48246   1.16365  -0.31685 -0.92104  0.63779 -0.17779
## 622   0.49788  0.48246   1.16365  -0.31685 -0.14882  0.47617 -0.31776
## 623   1.09449  0.48246   1.16365  -0.31685 -0.34799  0.00332 -0.45174
## 624   0.49788  0.48246   1.98437  -0.31685  0.04257  0.00332 -1.27553
## 625   0.49788  0.48246  -0.05921  -0.31685 -0.34799 -0.57545 -0.58331
## 626   0.49788 -0.48246   0.45468  -0.31685 -0.05188 -0.43999 -0.84732
## 627   0.49788 -0.48246   1.98437  -0.31685 -1.69163 -0.94779 -1.55521
## 628  -0.07854  0.48246   1.98437  -0.31685  1.23461 -1.09207 -1.27553
## 629   1.09449  0.48246   1.98437  -0.22166 -0.46725  0.47617  0.58331
## 630   0.49788  0.48246   1.98437  -0.31685  0.52135 -0.30033  1.65653
## 631  -0.95197  0.48246   0.45468  -0.31685  0.41667 -0.15487 -0.31776
## 632  -0.95197  0.48246   0.45468  -0.31685  1.23461 -0.43999 -1.27553
## 633  -0.07854  0.48246   1.16365  -0.31685 -0.67825  1.74091  0.44585
## 634   0.49788  0.48246   1.98437  -0.31685  1.23461  0.16767 -0.01928
## 635   0.49788 -0.48246   0.45468  -0.31685 -0.79151 -0.30033 -0.17779
## 636   1.09449  0.48246   0.45468  -0.31685 -0.67825  0.32197 -0.45174
## 637   0.49788  0.48246  -0.05921  -0.31685 -0.34799  0.16767 -0.97631
## 638  -0.95197  0.48246   0.45468  -0.31685 -0.24649 -0.57545 -1.42424
## 639  -0.07854 -0.48246  -1.73790  -0.31685 -0.24649  1.74091  0.88309
## 640   1.09449 -0.48246   0.45468  -0.31685 -0.14882 -0.69509  0.44585
## 641   0.49788 -0.48246   1.16365  -0.31685 -0.67825  0.96248  0.88309
## 642  -0.07854  0.48246   1.16365  -1.10702 -1.05308  0.63779 -0.31776
## 643  -0.07854 -0.48246  -0.61113  -0.31685  0.22393 -0.30033 -1.68062
## 644   1.09449 -0.48246   0.45468  -0.31685  0.04257 -0.30033 -0.31776
## 645  -0.95197  0.48246   0.45468  -0.31685 -0.46725 -0.15487 -0.31776
## 646  -0.95197 -0.48246  -0.61113  -0.31685 -1.43907  1.45421  1.06238
## 647   0.49788  0.48246   1.16365  -0.31685  1.13281  0.16767  1.06238
## 648  -0.07854  0.48246   0.45468  -0.31685 -0.14882  0.80523 -1.27553
## 649   1.09449  0.48246   1.16365  -0.31685 -0.46725  2.12700  2.44904
## 650  -0.07854 -0.48246   1.16365  -0.31685  0.62967  0.47617  0.44585
## 651  -0.95197 -0.48246  -0.61113  -0.31685  1.02119  1.28610  1.24033
## 652  -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.63779 -0.01928
## 653   0.49788  0.48246  -1.73790  -0.31685 -0.34799  0.96248 -0.71727
## 654  -0.07854 -0.48246   1.16365   0.11440 -0.46725  1.74091 -0.45174
## 655   1.09449 -0.48246  -0.61113  -0.31685  1.23461 -0.57545  0.29338
## 656   1.09449 -0.48246  -0.05921  -0.31685  1.13281 -1.37639  1.43533
## 657  -0.95197 -0.48246   1.16365  -0.31685  0.62967  0.16767  0.44585
## 658  -0.07854 -0.48246   1.98437  -0.31685 -0.79151  1.45421  1.88511
## 659  -0.07854  0.48246   1.16365  -1.10702 -1.32828  0.47617 -0.01928
## 660  -0.95197  0.48246   0.45468  -0.31685 -0.24649 -1.09207 -0.71727
## 661  -0.07854  0.48246   0.45468  -0.31685  0.04257  0.16767  0.29338
## 662  -0.07854  0.48246   1.98437  -0.31685  1.23461 -1.23177 -0.31776
## 663  -0.95197 -0.48246   0.45468  -0.31685 -0.34799 -0.43999  0.58331
## 664  -0.07854  0.48246   1.98437  -0.31685  1.13281 -0.43999  0.14143
## 665  -0.95197 -0.48246  -1.22751  -0.31685 -2.05048 -0.30033  0.14143
## 666   0.49788 -0.48246  -0.61113  -0.31685  0.91093 -0.69509  1.24033
## 667   1.09449 -0.48246   0.45468  -0.31685 -1.69163  2.12700  0.14143
## 668  -0.07854 -0.48246  -0.61113  -0.31685 -0.58016  0.96248  0.44585
## 669  -0.95197 -0.48246  -0.05921  -0.31685 -0.34799  0.16767 -0.45174
## 670   0.49788 -0.48246  -0.05921  -0.31685 -0.46725  0.80523 -0.01928
## 671  -0.95197 -0.48246   0.45468  -0.31685 -0.24649  0.00332  1.43533
## 672  -0.95197  0.48246  -0.61113  -0.31685  1.23461  1.11406  0.44585
## 673  -0.95197  0.48246   1.16365  -0.50212  0.82562 -0.69509 -0.58331
## 674   0.49788 -0.48246  -0.05921  -0.31685 -0.05188 -0.30033 -0.71727
```

```
## 675  -0.95197 -0.48246  -0.05921  -0.31685  0.22393  0.00332 -1.68062
## 676  -0.07854 -0.48246   0.45468  -0.31685  0.52135 -0.30033  0.44585
## 677  -0.95197 -0.48246  -0.61113  -0.31685  2.28554 -2.11437 -0.31776
## 678  -0.95197  0.48246  -0.61113  -0.31685  0.62967 -0.30033 -0.58331
## 679   1.09449 -0.48246   1.98437  -0.31685  0.22393 -0.80615 -0.17779
## 680   0.49788 -0.48246  -0.61113  -0.31685 -1.32828  0.00332 -1.27553
## 681  -0.07854 -0.48246   1.16365  -0.31685  1.37297 -1.76250  0.44585
## 682   0.49788  0.48246   0.45468  -0.31685  0.52135 -0.15487 -0.45174
## 683   0.49788  0.48246  -0.05921  -0.31685  0.91093 -0.69509  1.24033
## 684  -0.07854 -0.48246   0.45468  -0.31685 -0.34799  0.16767  0.72330
## 685  -0.95197  0.48246  -0.61113  -0.31685  1.60383  0.96248  1.43533
## 686   1.09449  0.48246  -2.43591  -0.31685 -0.92104  0.63779 -0.97631
## 687   0.49788 -0.48246  -0.61113  -0.31685  1.02119  1.11406 -0.31776
## 688   1.82213  0.48246   1.16365  -0.31685  0.82562 -0.69509 -0.45174
## 689   1.82213 -0.48246  -0.61113  -0.31685  0.41667 -0.69509 -1.42424
## 690  -0.07854  0.48246   0.45468  -0.31685 -0.14882 -0.15487 -0.97631
## 691   1.09449  0.48246   1.16365  -0.31685  0.22393 -0.69509 -0.31776
## 692   0.49788 -0.48246   1.16365  -0.31685 -1.19430 -0.30033  0.14143
## 693   0.49788 -0.48246  -0.05921  -0.31685 -0.92104 -0.57545 -0.45174
## 694   0.49788  0.48246   1.16365  -0.31685 -0.14882 -0.43999 -0.01928
## 695   1.82213 -0.48246   0.45468  -0.31685 -0.79151  0.32197  0.44585
## 696   1.09449  0.48246   0.45468   0.11440 -1.69163 -0.30033  1.06238
## 697   0.49788 -0.48246   0.45468  -0.31685 -0.05188 -0.94779  0.88309
## 698   1.82213 -0.48246  -0.61113  -0.31685 -0.14882 -1.09207 -0.71727
## 699   0.49788  0.48246  -0.61113  -0.31685  0.91093  0.16767  0.44585
## 700   1.09449 -0.48246  -2.43591  -0.31685 -1.05308  1.11406  0.44585
## 701   0.49788  0.48246   0.45468  -0.31685 -0.34799  0.63779  0.58331
## 702   1.82213 -0.48246   0.45468  -0.31685 -1.43907  0.80523 -0.17779
## 703   0.49788 -0.48246  -0.61113  -0.31685 -0.79151 -0.30033 -0.58331
## 704  -0.95197 -0.48246  -0.61113  -0.31685 -1.43907  0.32197  1.06238
## 705  -0.95197  0.48246   0.45468  -0.31685 -0.14882 -0.94779 -1.42424
## 706  -0.07854 -0.48246   0.45468  -0.31685 -0.05188  1.93886  0.29338
## 707  -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.57545 -0.45174
## 708  -0.95197 -0.48246  -0.05921  -0.31685 -0.92104 -0.30033 -0.71727
## 709  -0.95197 -0.48246   0.45468  -0.31685  0.91093  0.16767  0.58331
## 710  -0.95197 -0.48246  -0.61113  -0.31685 -0.58016 -0.15487 -0.84732
## 711  -0.07854  0.48246   1.16365  -0.31685  0.52135  0.32197  0.72330
## 712  -0.95197 -0.48246   0.45468  -0.31685  0.52135  0.80523  0.88309
## 713  -0.95197 -0.48246  -0.05921  -0.31685  0.73545  1.11406  0.44585
## 714  -0.95197  0.48246  -0.61113  -0.31685  0.62967  0.47617  1.06238
## 715  -0.95197 -0.48246  -0.61113  -0.31685 -0.05188 -1.50796 -1.27553
## 716   0.49788 -0.48246   0.45468  -0.31685 -0.79151 -0.80615 -0.31776
## 717  -0.95197 -0.48246  -1.73790  -0.31685 -0.05188 -1.23177 -0.71727
## 718   1.82213 -0.48246   0.45468  -0.31685 -0.34799 -0.94779 -0.71727
## 719   0.49788 -0.48246  -0.61113  -0.31685  1.23461  0.80523  0.88309
## 720   0.49788  0.48246  -0.05921  -0.31685  1.60383 -0.69509  0.29338
## 721   1.82213 -0.48246  -0.05921  -0.31685 -0.05188 -0.30033 -0.01928
## 722  -0.07854  0.48246   0.45468  -0.31685 -0.92104  1.45421  0.29338
## 723   0.49788  0.48246  -0.61113  -0.31685  1.13281 -0.57545  0.72330
## 724  -0.07854  0.48246   1.16365  -0.31685  0.31287  0.63779  0.72330
## 725  -0.95197 -0.48246  -0.05921  -0.31685  2.28554 -0.94779  0.72330
## 726  -0.07854  0.48246   1.16365  -0.22166  0.31287  0.63779 -0.58331
## 727  -0.95197 -0.48246  -0.61113  -0.31685 -1.43907  0.16767  0.72330
## 728  -0.07854  0.48246  -1.73790  -0.31685 -0.58016  0.32197  0.14143
```

```
## 729   0.49788  0.48246   0.45468  -0.31685  0.73545  0.00332 -0.97631
## 730  -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  1.28610 -0.31776
## 731  -0.95197  0.48246   0.45468  -0.31685  1.23461  0.63779  0.72330
## 732   0.49788 -0.48246  -1.73790   0.12600  0.62967  0.16767  0.29338
## 733  -0.95197 -0.48246  -0.61113  -0.31685  0.73545  1.11406  1.43533
## 734  -0.07854  0.48246   0.45468  -0.31685  0.22393  2.12700  2.44904
## 735  -0.07854 -0.48246   0.45468  -0.31685 -0.46725 -1.76250 -2.85950
## 736  -0.07854 -0.48246   0.45468  -0.31685 -1.05308  1.74091 -0.01928
## 737  -0.95197  0.48246  -1.22751  -0.31685  1.23461  0.16767  1.43533
## 738  -0.07854 -0.48246   1.16365  -0.31685 -0.05188 -1.37639  0.44585
## 739   0.49788 -0.48246  -0.61113  -0.31685 -1.32828  0.16767  0.58331
## 740   1.09449  0.48246   1.16365  -0.31685  0.82562 -0.30033  0.29338
## 741   0.49788  0.48246   0.45468  -0.31685  0.62967  0.16767 -0.71727
## 742  -0.07854 -0.48246  -1.73790  -0.31685 -0.34799  0.00332 -0.58331
## 743   1.09449 -0.48246  -0.61113  -0.31685 -0.92104  0.16767 -0.01928
## 744  -0.07854  0.48246  -1.73790  -0.31685  0.73545  0.32197 -1.11902
## 745  -0.07854  0.48246   1.16365  -0.31685 -0.05188  0.47617  0.44585
## 746   0.49788  0.48246  -1.73790  -0.31685  0.41667 -0.57545 -1.42424
## 747   0.49788  0.48246   1.98437  -0.31685 -1.69163  0.96248 -0.97631
## 748   0.49788 -0.48246   1.16365  -0.31685 -0.14882  0.00332 -0.01928
## 749  -0.07854  0.48246  -0.05921  -0.31685 -2.34360  1.45421 -1.82919
## 750  -0.07854 -0.48246  -0.61113  -0.31685  1.60383 -0.30033  1.06238
## 751  -0.07854  0.48246   1.16365  -0.31685  0.41667  1.11406 -0.58331
## 752  -0.07854 -0.48246   1.98437  -0.31685 -0.92104  0.47617  1.43533
## 753  -0.95197 -0.48246  -0.61113  -0.31685 -1.43907  1.58487  1.65653
## 754  -0.95197  0.48246   1.16365   0.12600  0.62967  0.32197 -0.58331
## 755  -0.95197  0.48246  -0.61113  -0.31685  2.28554 -0.43999 -0.17779
## 756  -0.95197 -0.48246  -0.61113  -0.31685  0.41667  0.63779 -0.01928
## 757  -0.95197 -0.48246   1.98437  -0.31685 -2.75696  1.74091  0.58331
## 758  -0.07854 -0.48246   0.45468  -0.31685  0.04257 -0.94779 -0.84732
## 759  -0.95197 -0.48246  -0.61113  -0.31685  1.72012  0.32197 -1.11902
## 760  -0.07854  0.48246   0.45468  -0.31685 -1.32828  0.80523  1.43533
## 761  -0.95197  0.48246   0.45468  -0.31685  1.13281  0.80523  0.58331
## 762  -0.95197 -0.48246  -1.73790  -0.31685  0.41667 -0.94779  1.06238
## 763  -0.95197 -0.48246  -0.61113  -0.31685  0.62967  0.16767  2.15324
## 764  -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -0.80615  0.29338
## 765  -0.07854 -0.48246   1.16365  -0.31685  0.82562 -0.69509  0.14143
## 766  -0.95197  0.48246  -0.05921   0.11440 -0.34799  0.63779  0.14143
## 767  -0.07854 -0.48246   0.45468  -0.31685  1.02119  0.16767  0.58331
## 768  -0.95197 -0.48246  -0.61113  -0.31685  0.62967 -1.63340 -1.27553
## 769  -0.95197  0.48246   1.16365  -0.50212  0.52135 -1.37639 -1.82919
## 770   1.09449 -0.48246   0.45468  -0.31685  1.23461 -1.37639 -0.45174
## 771   1.09449  0.48246  -0.05921  -0.31685  1.02119 -1.23177 -0.31776
## 772  -0.95197 -0.48246  -1.22751  -0.31685 -1.19430 -0.43999  0.58331
## 773  -0.95197  0.48246  -0.61113  -0.31685 -1.69163  0.47617  0.88309
## 774  -0.07854 -0.48246  -0.61113  -0.31685  0.13606 -0.43999 -0.84732
## 775  -0.95197 -0.48246  -0.61113   0.12600  0.52135  0.63779  0.72330
## 776  -0.95197 -0.48246  -0.61113  -0.31685  1.98437  0.00332  2.15324
## 777   1.09449 -0.48246  -1.22751  -0.31685 -2.21844  1.11406 -0.31776
## 778  -0.95197  0.48246  -0.05921  -0.31685  1.02119 -2.11437 -0.17779
## 779   0.49788 -0.48246  -0.05921  -0.31685  1.02119 -0.94779 -0.84732
## 780  -0.95197 -0.48246  -0.61113   0.11440  1.13281 -1.23177  0.29338
## 781  -0.95197  0.48246  -0.61113  -0.31685  0.82562 -0.43999  0.88309
## 782  -0.95197  0.48246  -0.61113  -0.31685 -0.24649  0.47617  0.88309
```

```
## 783  -0.95197 -0.48246   1.16365  -0.31685  1.37297 -0.80615  0.88309
## 784  -0.95197 -0.48246  -0.05921  -0.31685 -0.58016  0.00332  0.14143
## 785   0.49788 -0.48246  -0.05921  -0.31685  0.82562 -0.57545  0.14143
## 786  -0.95197 -0.48246  -0.05921  -0.31685 -1.69163  1.28610 -0.58331
## 787  -0.95197 -0.48246  -0.61113  -0.31685 -2.05048  0.16767  0.72330
## 788  -0.95197 -0.48246   0.45468  -0.31685 -0.14882 -0.43999  0.88309
## 789  -0.95197 -0.48246  -0.61113  -0.31685  0.62967 -0.15487  0.58331
## 790  -0.95197 -0.48246  -0.61113  -0.31685  0.82562  0.63779  0.29338
## 791  -0.07854 -0.48246  -0.61113  -0.31685  0.04257  2.12700 -0.31776
## 792  -0.07854 -0.48246   0.45468  -0.31685 -0.05188 -0.57545  1.24033
## 793  -0.95197 -0.48246  -0.61113  -0.31685  1.13281 -0.57545 -0.31776
## 794  -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.94779 -0.31776
## 795  -0.95197  0.48246   0.45468  -0.31685 -0.58016  0.80523  0.44585
## 796  -0.07854  0.48246  -0.61113  -0.31685  0.13606  1.11406  0.72330
## 797   0.49788  0.48246  -0.61113  -0.31685  1.23461  0.63779  1.43533
## 798  -0.95197 -0.48246  -0.61113  -0.31685 -1.19430  0.16767 -0.01928
## 799  -0.07854 -0.48246  -0.61113  -0.31685  0.52135 -0.43999 -0.17779
## 800  -0.95197 -0.48246  -1.22751  -0.31685 -0.46725  0.32197  0.14143
## 801   1.09449  0.48246   0.45468  -0.31685  0.13606 -0.94779 -0.97631
## 802  -0.07854 -0.48246  -0.61113  -0.31685  0.52135 -1.09207 -0.45174
## 803  -0.95197  0.48246   0.45468  -0.31685  1.98437 -1.50796  1.43533
## 804  -0.07854 -0.48246  -0.61113  -0.31685 -0.24649  0.16767 -0.31776
## 805  -0.95197 -0.48246  -1.43719  -0.31685 -0.34799  0.80523  0.72330
## 806  -0.95197  0.48246  -0.61113  -0.31685  1.02119  0.80523  1.06238
## 807  -0.95197 -0.48246   0.45468  -0.31685  0.41667 -1.92173 -0.97631
## 808  -0.95197 -0.48246  -0.05921  -0.31685 -1.69163 -0.80615 -1.27553
## 809  -0.95197 -0.48246  -1.22751  -0.31685 -1.69163  0.80523  1.06238
## 810   1.09449  0.48246   0.45468  -0.31685  1.23461  1.74091  0.88309
## 811  -0.95197 -0.48246  -0.61113  -0.31685  1.13281 -0.69509 -0.01928
## 812  -0.07854 -0.48246   0.45468  -0.31685  0.52135 -0.57545  0.72330
## 813  -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.00332 -0.45174
## 814  -0.95197 -0.48246  -0.61113  -0.31685  2.46262  0.32197  0.29338
## 815  -0.95197  0.48246  -0.61113  -0.31685  0.13606 -0.94779 -0.01928
## 816   1.09449 -0.48246   1.98437  -0.31685  0.62967  0.16767  0.88309
## 817  -0.07854  0.48246   1.16365  -0.31685  1.60383 -0.80615 -0.01928
## 818  -0.95197 -0.48246  -0.61113  -0.50212 -0.67825  1.74091  0.72330
## 819  -0.95197  0.48246   0.45468  -0.31685 -0.34799  0.32197 -0.17779
## 820  -0.95197 -0.48246  -0.61113  -0.31685 -0.05188  1.11406  0.72330
## 821  -0.95197 -0.48246  -0.61113  -0.31685 -0.05188  0.16767  0.72330
## 822  -0.95197 -0.48246  -0.61113   1.90725  0.04257 -0.30033 -0.17779
## 823  -0.95197 -0.48246   0.45468  -0.31685  0.62967 -2.11437 -2.85950
## 824  -0.95197 -0.48246   0.45468  -0.31685  0.52135  0.63779  0.14143
## 825  -0.95197 -0.48246  -0.61113  -0.31685  0.13606  1.45421  1.24033
## 826  -0.95197 -0.48246   0.45468  -0.31685 -0.92104  0.47617 -0.01928
## 827  -0.07854  0.48246   1.98437  -0.31685  1.72012  0.47617  1.06238
## 828  -0.95197 -0.48246  -0.61113  -0.31685  0.13606  0.63779  1.88511
## 829  -0.95197 -0.48246  -0.05921  -0.31685  0.31287 -0.43999 -0.71727
## 830  -0.95197 -0.48246  -0.61113  -0.31685  0.91093 -0.80615  0.14143
## 831  -0.07854  0.48246   1.16365  -0.31685  0.13606 -0.94779  1.43533
## 832   1.09449  0.48246   1.98437  -0.31685  0.04257  0.16767 -0.01928
## 833  -0.07854  0.48246   1.16365  -0.31685  0.82562 -0.69509 -0.01928
## 834  -0.95197 -0.48246   0.45468  -0.31685  0.52135 -0.94779 -0.45174
## 835  -0.95197 -0.48246   0.45468  -0.31685 -1.69163  0.16767 -0.01928
## 836   1.09449 -0.48246   1.16365  -0.31685 -0.34799  0.32197  0.14143
```

```
## 837  -0.95197 -0.48246  -0.61113  -0.31685 -1.69163  1.74091  0.58331
## 838  -0.95197 -0.48246  -1.22751  -0.31685  0.73545  0.00332  2.15324
## 839  -0.07854 -0.48246   0.45468  -0.31685  0.22393 -1.37639  0.58331
## 840  -0.95197 -0.48246  -0.61113  -0.31685 -0.58016 -0.15487  0.88309
## 841  -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.00332  0.29338
## 842  -0.07854  0.48246  -0.61113  -0.31685  0.52135 -0.43999  0.14143
## 843  -0.95197  0.48246  -0.61113  -0.31685  0.31287  0.80523  1.06238
## 844   0.49788 -0.48246  -0.61113  -0.31685  0.91093 -1.63340 -1.42424
## 845  -0.95197  0.48246  -0.05921  -0.31685  0.52135 -0.43999 -1.55521
## 846  -0.07854 -0.48246   0.45468  -0.31685  0.62967 -0.43999  0.29338
## 847  -0.95197 -0.48246  -1.22751  -0.31685  0.52135  0.63779  1.06238
## 848   1.82213 -0.48246   1.16365  -0.31685 -1.69163  0.00332  1.24033
## 849  -0.95197 -0.48246   1.16365  -0.31685  0.41667 -0.94779  0.44585
## 850  -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  1.45421  1.43533
## 851  -0.07854 -0.48246   0.45468  -0.31685  0.73545  0.16767 -1.42424
## 852  -0.95197 -0.48246  -0.61113  -0.31685  0.04257  0.00332  1.43533
## 853  -0.95197  0.48246  -0.61113  -0.31685 -0.34799  0.16767 -0.01928
## 854  -0.95197 -0.48246  -1.73790  -0.22166  0.52135  0.80523  0.58331
## 855  -0.07854 -0.48246  -0.61113  -0.31685 -1.05308  0.47617  1.88511
## 856  -0.95197 -0.48246  -0.05921   0.12600  0.52135  1.28610 -0.17779
## 857  -0.07854 -0.48246  -1.43719  -0.31685  1.37297 -0.80615 -0.45174
## 858  -0.95197 -0.48246  -0.61113  -0.31685 -1.05308  2.32338  1.06238
## 859  -0.95197  0.48246  -0.61113  -0.50212  1.02119 -1.23177  1.06238
## 860  -0.07854 -0.48246  -0.61113  -0.31685  0.62967  0.80523  1.06238
## 861  -0.95197 -0.48246   0.45468  -0.31685  0.04257 -0.15487 -0.17779
## 862  -0.95197 -0.48246  -0.61113  -0.31685 -1.86962  1.28610  2.15324
## 863  -0.95197 -0.48246  -0.61113  -0.31685  1.60383 -0.57545 -0.17779
## 864  -0.95197  0.48246  -0.61113  -0.31685 -0.14882  1.11406 -0.58331
## 865  -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -1.09207  0.58331
## 866  -0.95197  0.48246  -0.61113  -0.31685 -0.05188  1.28610  1.43533
## 867  -0.95197  0.48246  -0.61113  -0.31685 -1.32828  0.32197  0.72330
## 868   1.09449 -0.48246  -0.05921  -0.31685  1.60383 -0.69509  0.88309
## 869  -0.07854 -0.48246   0.45468  -0.31685  0.91093 -0.80615  1.06238
## 870  -0.95197 -0.48246   1.16365  -0.31685  0.22393  1.58487  0.14143
## 871  -0.07854  0.48246   1.16365  -0.31685 -0.67825 -0.43999 -0.01928
## 872  -0.95197  0.48246  -0.61113  -0.31685  1.49158 -1.76250  0.14143
## 873  -0.07854  0.48246   1.16365  -0.31685  0.22393 -1.09207 -0.58331
## 874  -0.95197  0.48246  -0.61113   0.11440  0.73545  0.32197  1.43533
## 875   0.49788 -0.48246  -0.05921   0.11440  1.23461 -2.11437  0.72330
## 876  -0.07854 -0.48246  -0.61113  -0.31685 -0.92104  0.47617  0.72330
## 877  -0.95197  0.48246   0.45468  -0.31685 -0.58016  1.45421  0.88309
## 878  -0.07854 -0.48246   1.16365  -0.31685  1.23461  0.00332 -0.31776
## 879  -0.95197  0.48246  -2.43591  -0.31685  0.62967 -0.15487  0.88309
## 880   0.49788 -0.48246  -0.61113  -0.31685  1.60383 -1.09207  0.29338
## 881  -0.07854  0.48246  -0.61113  -0.31685 -1.19430  1.45421  1.24033
## 882  -0.95197 -0.48246  -0.61113  -0.31685  0.04257  1.28610  0.72330
## 883  -0.95197 -0.48246  -0.61113   0.11440  1.49158  0.00332  0.29338
## 884  -0.07854 -0.48246  -0.61113  -0.31685  1.02119 -2.72827  0.14143
## 885  -0.95197 -0.48246   0.45468  -0.31685  0.41667 -0.43999  0.14143
## 886  -0.95197 -0.48246   0.45468  -0.31685 -0.46725  2.57309  0.72330
## 887  -0.95197  0.48246  -0.61113  -0.31685 -1.05308  1.45421  1.65653
## 888  -0.95197  0.48246  -0.61113  -0.31685  0.41667  0.80523  1.24033
## 889  -0.95197 -0.48246  -0.61113   0.11440  0.13606  0.96248  1.06238
## 890  -0.07854 -0.48246  -0.61113  -0.31685 -1.55078  2.12700  0.88309
```

```
## 891  -0.07854 -0.48246  -0.61113  -0.31685  0.13606 -0.43999 -1.82919
## 892  -0.07854 -0.48246  -0.61113  -0.31685  1.02119 -1.50796  0.29338
## 893  -0.07854  0.48246  -1.43719  -0.31685  3.27393 -2.11437 -0.84732
## 894  -0.95197 -0.48246  -0.61113  -0.31685 -1.43907 -1.76250 -0.01928
## 895  -0.95197  0.48246  -0.05921  -0.31685 -1.86962 -0.30033  0.14143
## 896  -0.07854 -0.48246   1.16365  -0.31685 -0.79151  1.11406 -0.17779
## 897  -0.07854 -0.48246   0.45468  -0.31685  1.83990 -0.30033 -0.45174
## 898  -0.95197  0.48246  -0.61113  -0.31685  1.83990 -0.94779 -0.97631
## 899  -0.95197 -0.48246   0.45468  -0.31685 -2.52197  1.74091 -1.55521
## 900  -0.95197 -0.48246  -0.61113  -1.10702  0.04257 -0.94779  0.44585
## 901  -0.07854  0.48246   1.16365  -0.31685  0.22393 -0.69509  0.29338
## 902  -0.95197 -0.48246  -1.22751  -0.31685 -0.05188  0.96248 -0.01928
## 903   0.49788  0.48246   0.45468  -0.31685  1.02119 -0.30033  1.06238
## 904  -0.95197 -0.48246  -0.61113  -0.31685  1.37297 -0.15487 -0.17779
## 905  -0.07854 -0.48246  -0.05921  -0.31685  0.41667  0.32197  0.14143
## 906   0.49788 -0.48246   0.45468  -0.31685 -1.32828  0.32197 -0.71727
## 907  -0.95197 -0.48246  -0.61113   0.11440 -0.24649  0.00332 -0.31776
## 908  -0.95197 -0.48246   0.45468  -0.31685  0.13606  0.63779 -0.01928
## 909  -0.07854  0.48246  -0.61113   0.11440  1.37297  0.47617  1.06238
## 910  -0.95197  0.48246  -0.61113  -0.31685  2.12700 -2.72827 -1.97495
## 911  -0.95197 -0.48246  -0.61113  -0.31685  0.73545 -1.37639 -0.71727
## 912   0.49788 -0.48246   0.45468  -0.31685  0.31287 -1.50796 -1.68062
## 913  -0.95197  0.48246  -0.61113  -0.31685 -1.19430  2.32338  1.24033
## 914  -0.07854  0.48246  -1.43719  -0.31685  2.28554 -2.53830 -0.58331
## 915  -0.95197 -0.48246  -1.22751  -0.22166  0.22393  0.00332 -0.01928
## 916  -0.07854 -0.48246  -1.73790  -0.31685  0.41667 -0.15487 -0.17779
## 917  -0.95197  0.48246  -0.61113  -0.31685  1.72012 -1.63340 -0.17779
## 918  -0.95197 -0.48246  -1.22751  -0.31685  0.22393  1.45421  2.15324
## 919   0.49788 -0.48246   1.16365  -0.31685 -0.24649 -0.30033 -0.71727
## 920  -0.95197 -0.48246  -0.61113  -0.31685 -1.19430  0.47617  1.06238
## 921  -0.95197 -0.48246  -2.43591  -0.31685  0.13606 -0.30033 -0.01928
## 922  -0.95197 -0.48246  -0.61113  -0.31685 -1.19430 -1.37639 -0.71727
## 923  -0.07854 -0.48246  -1.22751  -0.31685  1.23461 -1.23177 -2.39883
## 924  -0.95197 -0.48246  -1.73790  -0.31685  1.02119 -1.50796  0.29338
## 925  -0.95197 -0.48246  -0.05921  -0.31685 -0.79151  1.28610  0.58331
## 926  -0.07854 -0.48246  -0.61113  -0.31685  0.22393 -1.23177  0.88309
## 927  -0.07854 -0.48246  -0.61113  -0.31685 -0.58016  1.45421  1.65653
## 928  -0.95197  0.48246  -0.61113   0.11440 -0.24649  0.96248  0.72330
## 929   0.49788 -0.48246  -1.73790  -0.31685 -0.67825 -0.69509 -0.58331
## 930  -0.07854  0.48246   0.45468  -0.31685  0.73545 -0.69509  1.24033
## 931  -0.95197  0.48246  -1.43719  -0.31685  1.13281 -1.92173 -0.01928
## 932  -0.95197  0.48246   0.45468  -0.31685 -0.24649  0.00332  1.06238
## 933  -0.95197  0.48246  -0.61113  -0.31685 -1.32828  1.11406  1.24033
## 934  -0.95197  0.48246  -0.61113  -0.31685  2.28554 -0.69509  0.29338
## 935  -0.95197 -0.48246  -0.05921  -0.31685  0.41667  1.28610  1.06238
## 936  -0.95197 -0.48246  -0.61113  -0.31685 -0.05188  0.32197  0.58331
## 937  -0.95197  0.48246   0.45468  -0.31685  0.31287  0.32197 -0.01928
## 938  -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.43999  1.06238
## 939  -0.07854  0.48246  -1.22751  -0.31685  0.91093  1.28610  1.06238
## 940  -0.07854 -0.48246  -0.05921   0.11440 -0.46725  2.32338  2.44904
## 941  -0.95197  0.48246  -0.61113   0.12600  1.60383 -0.80615  0.58331
## 942  -0.07854  0.48246   1.16365  -0.31685  1.02119 -0.30033  0.44585
## 943  -0.95197  0.48246  -0.61113  -0.31685 -0.34799 -1.09207 -0.58331
## 944  -0.95197 -0.48246  -1.22751  -0.31685 -0.67825 -0.30033 -1.11902
```

```
## 945  -0.07854 -0.48246  -0.05921  -0.31685  2.12700 -1.37639  0.14143
## 946  -0.07854  0.48246  -1.22751  -0.31685  0.41667  0.00332 -2.39883
## 947   0.49788 -0.48246  -0.05921  -0.31685  1.60383 -1.76250 -0.01928
## 948  -0.95197  0.48246   0.45468  -0.31685  0.62967  0.00332  0.44585
## 949  -0.95197  0.48246  -0.61113  -0.31685 -1.19430  0.32197  1.88511
## 950  -0.95197 -0.48246  -0.61113  -0.31685  0.41667  0.16767  0.29338
## 951  -0.07854  0.48246   0.45468  -0.31685  1.02119 -0.94779 -0.01928
## 952  -0.95197 -0.48246  -0.61113  -0.31685  1.37297 -0.80615 -0.31776
## 953  -0.95197 -0.48246  -0.05921  -0.31685  1.83990 -0.57545 -0.01928
## 954   1.09449 -0.48246   0.45468  -0.31685 -1.19430 -0.57545 -0.58331
## 955   0.49788 -0.48246  -0.05921  -0.31685 -1.43907 -0.30033  0.14143
## 956  -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  1.58487 -0.01928
## 957  -0.95197  0.48246   0.45468  -0.31685  0.04257  0.16767  1.43533
## 958   1.09449  0.48246  -0.61113  -0.31685 -0.05188 -0.69509  0.72330
## 959  -0.95197 -0.48246  -0.05921  -0.31685  0.31287  0.96248  1.06238
## 960  -0.07854 -0.48246  -0.61113  -0.31685 -0.34799  0.32197  1.88511
## 961   0.49788 -0.48246  -0.61113  -0.31685  0.62967 -1.92173 -0.01928
## 962  -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  1.28610 -0.45174
## 963  -0.07854  0.48246   1.16365  -0.31685 -1.19430  0.00332  0.72330
## 964  -0.95197 -0.48246   1.16365  -0.31685 -0.92104  1.11406 -0.01928
## 965  -0.95197  0.48246  -0.61113  -0.31685 -0.58016  0.32197  0.58331
## 966  -0.95197  0.48246  -0.61113  -0.31685 -0.24649  0.16767  1.88511
## 967  -0.95197 -0.48246  -0.61113  -1.10702 -1.55078  1.28610  1.06238
## 968   1.82213 -0.48246   1.98437   0.11440 -1.86962  1.28610  0.58331
## 969   0.49788  0.48246   0.45468  -0.31685  0.22393  0.00332 -0.17779
## 970  -0.07854 -0.48246  -0.61113  -0.31685  0.41667 -1.63340  0.58331
## 971  -0.95197 -0.48246  -0.61113  -0.31685  1.49158 -1.23177 -1.11902
## 972  -0.95197 -0.48246  -0.61113  -0.31685 -1.86962  2.12700  1.24033
## 973  -0.95197 -0.48246  -0.61113  -0.31685  1.23461  0.00332  1.06238
## 974   2.59171 -0.48246   1.16365  -0.31685 -2.21844  0.00332  0.58331
## 975  -0.95197 -0.48246  -0.61113  -0.31685 -0.58016  1.11406  0.72330
## 976   0.49788  0.48246   1.16365  -0.31685 -0.58016  1.45421 -1.27553
## 977   1.09449  0.48246  -0.61113  -0.31685  1.23461 -1.09207 -0.45174
## 978  -0.07854  0.48246   1.98437  -0.50212  0.62967  0.16767  0.72330
## 979  -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.15487  0.14143
## 980  -0.95197 -0.48246  -0.61113  -0.31685  1.02119  1.11406 -1.11902
## 981  -0.07854  0.48246   0.45468  -0.31685  0.62967 -0.15487  1.88511
## 982  -0.95197 -0.48246  -0.61113  -0.31685 -0.14882 -0.15487  1.24033
## 983  -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  0.32197  1.24033
## 984  -0.95197 -0.48246  -0.05921  -0.31685  0.73545 -0.80615 -0.71727
## 985  -0.07854 -0.48246  -0.61113  -0.31685  1.72012  0.63779  0.44585
## 986  -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -1.50796  0.44585
## 987  -0.07854 -0.48246   0.45468  -0.31685 -0.79151  0.00332  0.14143
## 988  -0.95197 -0.48246  -0.61113  -0.31685  1.72012 -0.57545  1.65653
## 989  -0.95197 -0.48246  -0.61113  -0.31685  0.31287  1.74091  0.29338
## 990   1.82213 -0.48246  -0.05921  -0.31685 -0.79151  0.32197  0.58331
## 991  -0.07854 -0.48246   0.45468  -0.31685 -1.19430  0.80523  1.43533
## 992  -0.95197 -0.48246  -0.61113  -0.31685  0.52135  0.80523  0.72330
## 993  -0.95197 -0.48246   1.16365  -0.31685 -0.79151 -0.30033 -0.31776
## 994  -0.95197 -0.48246   1.16365  -0.31685 -0.79151  0.96248 -0.45174
## 995  -0.07854 -0.48246   1.16365  -0.31685  1.13281 -0.30033  0.88309
## 996  -0.07854  0.48246   1.98437  -0.31685 -1.05308  0.80523 -0.31776
## 997  -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.47617 -0.17779
## 998  -0.95197 -0.48246  -1.73790  -0.31685  1.23461 -1.09207 -0.31776
```

```
## 999  -0.95197 -0.48246  -0.61113  -0.31685 -0.05188  0.96248 -1.27553
## 1000  1.09449  0.48246  -0.61113  -0.31685 -0.34799  0.16767  0.14143
## 1001 -0.95197 -0.48246  -0.61113  -0.31685  2.12700 -1.76250 -0.31776
## 1002 -0.95197 -0.48246  -1.22751  -0.31685  1.83990 -2.21069 -1.11902
## 1003 -0.95197 -0.48246  -1.22751  -0.22166  0.82562 -1.50796 -1.82919
## 1004 -0.95197  0.48246  -1.22751  -0.31685  1.83990 -0.94779  0.88309
## 1005 -0.95197 -0.48246  -0.61113  -0.31685 -0.05188  0.16767  1.65653
## 1006  1.09449 -0.48246   1.16365  -0.31685  0.62967 -1.23177 -0.58331
## 1007 -0.95197  0.48246  -1.22751  -0.31685  1.23461  0.96248  0.44585
## 1008  1.09449 -0.48246   0.45468  -0.31685 -0.67825  0.00332 -0.01928
## 1009 -0.95197  0.48246  -0.61113  -0.31685 -0.58016  1.45421  1.88511
## 1010 -0.07854 -0.48246  -0.61113  -0.31685  1.83990 -1.23177  0.44585
## 1011 -0.95197 -0.48246  -0.61113  -0.31685  0.62967  0.32197  0.14143
## 1012 -0.07854 -0.48246  -0.61113  -0.31685 -0.79151  2.12700  0.88309
## 1013  1.09449 -0.48246   0.45468  -0.31685 -1.19430  0.63779  2.44904
## 1014 -0.95197 -0.48246  -0.05921  -0.31685 -2.21844  2.57309  1.88511
## 1015 -0.07854 -0.48246  -0.61113  -0.31685  0.31287 -2.53830 -0.84732
## 1016 -0.95197  0.48246  -1.22751  -0.31685 -0.34799 -1.23177 -0.97631
## 1017 -0.07854 -0.48246  -1.22751  -0.31685  0.22393  1.58487  0.29338
## 1018  0.49788  0.48246  -0.61113  -0.31685  0.91093 -1.37639 -1.42424
## 1019 -0.95197 -0.48246   0.45468  -0.31685  0.13606 -0.94779  1.06238
## 1020 -0.95197  0.48246  -0.61113  -0.31685  2.12700 -2.72827 -1.11902
## 1021 -0.95197 -0.48246  -1.22751  -0.31685  1.37297 -0.15487  1.65653
## 1022 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825 -0.30033  1.06238
## 1023 -0.95197  0.48246  -1.22751   0.11440  0.31287 -1.09207  0.44585
## 1024 -0.95197  0.48246   0.45468  -0.31685 -1.19430 -0.94779 -0.71727
## 1025  1.09449 -0.48246   1.98437  -0.31685  0.13606  0.32197  0.44585
## 1026  0.49788  0.48246   0.45468  -0.50212  0.62967  0.32197 -0.45174
## 1027 -0.95197  0.48246   1.16365  -0.31685 -0.34799  0.80523  0.58331
## 1028 -0.95197  0.48246   0.45468  -0.31685  0.52135 -0.94779 -0.84732
## 1029 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.32197  0.58331
## 1030 -0.07854 -0.48246  -0.61113  -0.31685  0.22393 -1.37639 -0.17779
## 1031 -0.95197 -0.48246  -0.61113  -0.31685  0.22393 -0.69509  0.14143
## 1032 -0.95197  0.48246  -0.61113  -0.31685  1.23461 -0.57545  0.44585
## 1033 -0.95197 -0.48246  -0.05921  -0.31685  0.52135  0.47617  1.88511
## 1034 -0.95197  0.48246  -0.61113  -0.31685  0.52135  0.80523  0.88309
## 1035 -0.07854 -0.48246  -0.61113  -0.31685 -2.05048  0.47617  0.58331
## 1036  0.49788  0.48246   1.16365  -0.31685  1.23461 -1.50796 -0.01928
## 1037 -0.95197  0.48246  -0.61113  -0.31685  0.22393 -0.80615  0.72330
## 1038 -0.95197 -0.48246  -0.61113  -0.31685  0.73545 -0.15487  0.58331
## 1039  0.49788  0.48246   1.16365  -0.31685  0.62967 -0.15487 -1.97495
## 1040  0.49788 -0.48246   0.45468  -0.31685  0.22393 -2.11437 -2.09015
## 1041 -0.07854 -0.48246  -0.61113  -0.31685  1.02119 -0.57545  0.14143
## 1042 -0.07854  0.48246   1.16365  -0.31685  0.91093 -0.43999 -1.42424
## 1043 -0.95197 -0.48246  -0.61113  -0.31685  0.73545  1.28610  1.43533
## 1044 -0.07854  0.48246   1.16365  -0.31685  1.37297  1.28610  1.88511
## 1045 -0.95197 -0.48246  -0.61113  -0.31685  1.23461 -1.23177  0.44585
## 1046 -0.95197 -0.48246   1.16365  -0.31685 -1.43907  2.57309  0.44585
## 1047 -0.95197 -0.48246  -0.05921  -0.31685 -1.19430  0.63779 -0.01928
## 1048 -0.95197  0.48246  -0.61113  -0.31685  1.02119  0.47617  1.43533
## 1049 -0.07854 -0.48246   1.98437  -0.31685 -1.55078 -0.15487  0.72330
## 1050 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825 -0.43999 -0.97631
## 1051 -0.95197 -0.48246  -1.22751  -0.31685  1.23461 -0.57545 -1.55521
## 1052 -0.95197  0.48246  -0.61113  -0.31685  0.41667 -0.57545  0.44585
```

```
## 1053 -0.07854 -0.48246  -1.73790  -0.31685 -0.79151  1.28610  1.65653
## 1054 -0.07854  0.48246  -0.61113  -0.31685  0.22393 -0.15487  0.72330
## 1055  0.49788  0.48246  -1.22751  -0.31685  0.31287 -1.23177 -1.11902
## 1056 -0.95197 -0.48246   0.45468  -0.31685  0.73545 -1.09207 -1.27553
## 1057 -0.95197 -0.48246  -0.61113  -0.31685 -0.58016 -0.15487  0.72330
## 1058  1.09449  0.48246   1.16365  -0.31685 -0.58016  0.00332  1.65653
## 1059 -0.95197  0.48246  -1.22751   0.11440 -0.24649  0.63779 -1.42424
## 1060 -0.95197  0.48246   0.45468   1.90725  1.23461  1.93886  1.65653
## 1061 -0.07854 -0.48246  -0.61113  -0.31685 -1.69163 -0.15487  0.88309
## 1062 -0.07854 -0.48246   1.16365   0.11440 -0.67825  0.63779  1.65653
## 1063 -0.95197 -0.48246  -0.61113  -0.31685 -3.15735  0.47617  1.24033
## 1064  0.49788  0.48246  -1.43719  -0.31685  1.23461 -0.69509  0.58331
## 1065  0.49788 -0.48246   0.45468  -0.31685 -0.58016 -0.69509 -2.39883
## 1066 -0.95197 -0.48246  -1.22751  -0.31685 -1.69163  0.96248 -0.01928
## 1067 -0.07854  0.48246   1.98437  -0.31685 -0.92104  0.00332  1.06238
## 1068 -0.07854  0.48246   1.16365  -0.22166 -0.05188 -1.37639 -0.45174
## 1069 -0.95197 -0.48246   1.16365  -0.31685  0.41667  0.00332  0.29338
## 1070 -0.95197 -0.48246  -0.61113  -0.31685 -0.46725 -0.43999  1.06238
## 1071 -0.95197  0.48246   1.16365  -0.31685  1.60383 -1.50796 -0.17779
## 1072  0.49788  0.48246   1.98437  -0.31685 -0.67825  0.32197 -0.01928
## 1073  0.49788 -0.48246  -1.22751  -0.31685  0.31287 -0.69509 -0.45174
## 1074 -0.95197 -0.48246  -1.43719  -0.31685 -0.92104 -0.57545  0.72330
## 1075  0.49788  0.48246  -0.05921  -0.31685  0.41667  0.00332 -0.97631
## 1076 -0.07854  0.48246   0.45468  -0.31685  1.83990 -1.92173  1.88511
## 1077  1.09449 -0.48246  -0.05921  -0.31685 -1.55078  0.96248 -0.31776
## 1078  0.49788  0.48246  -0.05921  -0.31685  0.52135 -1.37639 -1.42424
## 1079 -0.07854  0.48246   1.16365   0.11440  0.31287  1.74091 -0.17779
## 1080 -0.95197  0.48246   1.16365  -0.31685 -1.19430  1.58487  0.29338
## 1081 -0.95197 -0.48246   1.16365  -0.31685 -0.24649  0.47617 -0.31776
## 1082 -0.95197  0.48246   1.16365  -0.31685  0.62967  1.11406 -0.84732
## 1083 -0.95197  0.48246   0.45468  -0.31685 -0.05188 -0.15487  0.44585
## 1084 -0.95197  0.48246   1.16365  -0.31685 -0.24649  0.47617  0.88309
## 1085  0.49788 -0.48246  -0.05921  -0.31685 -0.14882 -0.15487  0.58331
## 1086 -0.95197  0.48246   1.16365  -0.31685 -0.05188  0.96248  2.15324
## 1087 -0.95197  0.48246   1.16365  -0.31685  0.52135  0.47617 -0.01928
## 1088 -0.07854  0.48246   1.16365  -0.31685 -0.46725 -0.15487  0.29338
## 1089 -0.07854  0.48246   0.45468  -0.31685 -1.05308  1.45421  0.14143
## 1090 -0.95197  0.48246   1.16365  -0.31685  0.62967  1.45421 -0.17779
## 1091  1.09449  0.48246  -1.73790  -0.31685 -0.46725  0.63779 -1.11902
## 1092 -0.95197 -0.48246   0.45468  -0.31685 -1.69163 -0.80615 -0.58331
## 1093 -0.07854  0.48246   0.45468  -0.31685 -1.43907  1.74091 -0.84732
## 1094  0.49788 -0.48246   1.16365  -0.50212 -0.46725  0.96248  0.14143
## 1095 -0.07854 -0.48246   1.16365  -0.31685  1.13281 -1.09207 -0.84732
## 1096 -0.95197 -0.48246  -1.22751  -0.31685 -0.58016 -0.69509  1.65653
## 1097 -0.07854 -0.48246  -0.61113  -0.31685 -0.92104  0.00332  0.72330
## 1098 -0.95197  0.48246  -0.61113  -0.31685  0.04257 -0.43999 -0.01928
## 1099 -0.95197  0.48246   1.16365  -0.31685 -1.32828  1.28610  0.29338
## 1100 -0.95197 -0.48246  -0.61113  -0.31685 -0.58016  0.47617 -0.17779
## 1101 -0.95197  0.48246   0.45468  -0.31685  0.31287 -0.15487 -0.58331
## 1102 -0.95197  0.48246   1.16365  -0.31685 -0.79151 -0.15487 -0.17779
## 1103 -0.95197  0.48246  -1.22751  -0.31685 -1.05308  0.32197  1.88511
## 1104 -0.07854 -0.48246  -0.61113  -0.31685 -1.19430 -1.09207  0.72330
## 1105 -0.07854  0.48246   1.98437  -0.31685 -0.14882 -0.30033 -0.45174
## 1106 -0.07854  0.48246  -0.61113  -0.31685  1.98437 -0.30033  0.44585
```

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## 1107 -0.95197 -0.48246   0.45468  -0.31685  1.13281  1.11406  1.06238
## 1108 -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  1.74091  1.43533
## 1109  1.09449 -0.48246  -0.61113  -0.31685  2.46262 -1.50796 -1.82919
## 1110 -0.95197  0.48246  -0.61113  -0.31685  0.22393 -0.15487 -0.31776
## 1111  1.09449 -0.48246   1.98437  -0.31685  0.41667 -0.43999  0.58331
## 1112 -0.95197 -0.48246  -1.22751  -0.31685 -0.92104 -1.23177 -0.71727
## 1113 -0.95197 -0.48246  -0.61113  -0.31685 -3.46436  0.47617 -0.01928
## 1114  1.09449 -0.48246  -1.73790  -0.31685  0.52135 -0.57545  0.44585
## 1115 -0.95197 -0.48246  -0.61113   0.11440  0.91093  0.00332  1.24033
## 1116 -0.95197 -0.48246  -0.61113  -0.31685  1.60383 -1.23177 -0.17779
## 1117 -0.07854  0.48246   0.45468  -0.31685 -1.69163  2.57309  2.90161
## 1118 -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -0.43999 -0.01928
## 1119 -0.07854 -0.48246   0.45468  -0.31685 -1.05308  1.28610  0.44585
## 1120 -0.07854 -0.48246  -0.61113  -0.31685 -0.34799 -2.44904 -1.27553
## 1121 -0.95197 -0.48246  -1.73790  -0.31685 -0.05188 -1.92173  1.65653
## 1122 -0.07854 -0.48246  -0.05921  -0.31685  0.73545 -0.94779 -1.11902
## 1123 -0.07854 -0.48246  -1.22751  -0.31685 -1.05308  0.00332 -2.39883
## 1124 -0.07854 -0.48246  -0.05921  -0.31685  1.37297 -1.37639 -0.45174
## 1125  1.82213 -0.48246  -1.43719  -0.31685  0.52135 -0.43999 -0.58331
## 1126 -0.95197 -0.48246  -0.61113  -0.31685  1.37297 -0.94779  0.72330
## 1127 -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -2.03972 -0.71727
## 1128 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078 -1.23177  0.88309
## 1129 -0.95197 -0.48246  -0.61113  -0.31685  0.41667  0.16767 -0.17779
## 1130 -0.07854  0.48246  -0.05921  -0.31685  2.28554  0.80523  0.72330
## 1131 -0.07854 -0.48246   1.16365  -0.31685  0.62967 -0.69509  0.14143
## 1132  0.49788 -0.48246  -0.05921  -0.31685 -1.32828  0.16767  1.65653
## 1133 -0.95197 -0.48246   1.16365  -0.31685  0.41667  1.28610 -1.11902
## 1134 -0.95197 -0.48246  -1.22751  -0.31685  1.37297  0.63779 -0.31776
## 1135 -0.07854  0.48246   1.98437  -0.31685 -0.05188  0.32197 -0.84732
## 1136 -0.07854  0.48246   0.45468  -0.31685  0.31287 -1.92173 -0.01928
## 1137 -0.07854 -0.48246  -0.61113  -0.31685  0.52135 -1.23177  0.44585
## 1138 -0.95197  0.48246  -0.61113  -0.31685 -0.92104  0.47617  0.14143
## 1139 -0.07854  0.48246   0.45468  -0.31685  1.60383 -1.63340  0.72330
## 1140  0.49788 -0.48246  -0.05921  -0.31685  0.41667 -1.23177  0.14143
## 1141 -0.95197  0.48246  -0.61113  -0.31685  1.98437 -1.92173  1.24033
## 1142  1.09449 -0.48246   0.45468  -0.31685  0.22393 -1.09207 -0.71727
## 1143 -0.95197 -0.48246  -0.61113  -0.31685  1.60383 -0.80615 -0.71727
## 1144 -0.07854 -0.48246   1.16365  -0.31685  0.22393 -0.69509  0.29338
## 1145 -0.07854 -0.48246   0.45468  -0.31685 -2.75696 -0.43999 -1.11902
## 1146  0.49788 -0.48246  -0.05921  -0.31685  1.83990 -0.94779  0.14143
## 1147 -0.95197 -0.48246  -0.61113  -0.31685  0.13606  0.16767  0.14143
## 1148  1.09449  0.48246  -1.22751  -0.31685 -0.58016  0.63779 -0.31776
## 1149 -0.07854 -0.48246  -0.61113  -0.31685  1.23461 -0.43999  0.58331
## 1150  0.49788  0.48246   0.45468  -0.31685  1.72012 -1.76250 -0.58331
## 1151  1.82213  0.48246   1.16365   0.11440  0.31287 -0.69509 -0.71727
## 1152 -0.95197 -0.48246  -1.22751  -0.31685  0.52135 -0.80615 -0.17779
## 1153 -0.95197  0.48246   1.16365  -0.31685  0.41667  0.16767  0.29338
## 1154 -0.95197 -0.48246   1.98437  -0.31685 -0.92104  1.74091  1.65653
## 1155 -0.95197  0.48246  -0.61113  -0.31685  0.22393 -0.15487 -0.31776
## 1156 -0.95197 -0.48246  -0.61113  -0.31685  0.62967  1.93886  1.88511
## 1157  1.09449 -0.48246  -0.05921  -0.31685 -0.46725  0.00332 -0.31776
## 1158 -0.07854  0.48246   0.45468  -0.31685  0.62967 -0.15487  0.14143
## 1159 -0.95197 -0.48246  -1.43719   0.11440  0.82562 -1.09207 -1.42424
## 1160 -0.95197 -0.48246  -0.61113  -0.31685  0.04257 -0.15487  1.65653
```

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## 1161 -0.07854  0.48246   1.98437  -0.31685 -0.14882 -0.94779  0.29338
## 1162 -0.07854 -0.48246  -1.43719  -0.31685 -0.34799  0.32197 -0.01928
## 1163 -0.07854 -0.48246  -0.61113  -0.31685  0.82562 -1.09207  0.44585
## 1164  0.49788 -0.48246   0.45468  -0.31685 -0.34799 -0.57545  0.88309
## 1165 -0.07854 -0.48246   0.45468  -0.31685  0.52135 -0.94779  1.06238
## 1166 -0.95197 -0.48246  -1.22751  -0.31685  0.82562 -0.30033  1.43533
## 1167  1.09449 -0.48246  -0.05921  -0.31685  0.41667 -0.15487 -0.17779
## 1168  0.49788  0.48246   0.45468  -0.31685 -1.19430  1.28610  1.43533
## 1169  0.49788 -0.48246  -0.61113  -0.31685  0.13606 -0.57545 -0.01928
## 1170 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  0.16767 -0.97631
## 1171 -0.95197  0.48246  -0.61113  -0.31685  0.41667  0.16767  1.43533
## 1172 -0.95197 -0.48246  -0.61113   0.11440  0.04257 -0.80615  0.88309
## 1173 -0.07854 -0.48246   1.16365  -0.31685  0.31287 -0.80615 -0.01928
## 1174 -0.95197 -0.48246  -0.61113   0.11440 -1.43907  0.00332 -0.84732
## 1175 -0.95197 -0.48246  -0.61113  -0.31685  0.82562 -0.15487 -0.01928
## 1176 -0.07854  0.48246  -0.61113  -0.31685 -0.46725  0.32197  0.14143
## 1177 -0.07854  0.48246   1.16365  -0.31685  2.12700  0.47617  1.88511
## 1178 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151 -0.30033 -0.58331
## 1179 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882 -1.63340  0.29338
## 1180 -0.07854 -0.48246  -0.61113  -0.31685  1.72012 -0.43999 -0.58331
## 1181 -0.07854  0.48246  -0.05921  -0.31685  0.41667 -0.43999 -0.58331
## 1182 -0.95197 -0.48246   0.45468  -0.31685 -0.46725  1.11406  0.88309
## 1183  1.09449 -0.48246  -1.73790  -0.31685 -0.14882 -1.23177 -0.17779
## 1184 -0.95197 -0.48246  -0.61113  -0.31685  0.82562 -0.30033  0.58331
## 1185 -0.95197 -0.48246  -0.61113  -0.31685 -1.05308  0.63779  0.29338
## 1186 -0.07854  0.48246   0.45468  -0.31685  1.23461 -0.30033  0.88309
## 1187  1.82213  0.48246   1.98437  -0.31685 -0.34799  0.47617  0.44585
## 1188 -0.95197 -0.48246  -0.61113  -0.31685 -1.19430  1.45421  0.44585
## 1189 -0.95197 -0.48246   1.16365  -0.31685 -2.21844  0.32197  0.72330
## 1190 -0.95197  0.48246  -0.61113  -0.31685  0.62967  0.63779  0.44585
## 1191 -0.95197 -0.48246  -1.22751  -0.31685  1.60383 -1.50796  0.44585
## 1192 -0.95197 -0.48246  -0.61113  -0.31685 -2.75696  1.11406  1.06238
## 1193  0.49788 -0.48246   0.45468  -0.31685  0.31287  0.16767  0.72330
## 1194 -0.95197 -0.48246  -0.61113  -0.31685  0.91093 -0.43999 -0.01928
## 1195 -0.95197 -0.48246  -0.61113  -0.31685  0.52135 -0.30033 -0.58331
## 1196 -0.07854 -0.48246   0.45468  -0.31685 -0.92104 -0.30033 -0.17779
## 1197 -0.07854 -0.48246  -1.73790  -0.31685 -0.34799 -2.44904 -0.71727
## 1198 -0.95197 -0.48246  -0.61113  -0.31685  2.12700 -2.72827 -1.27553
## 1199 -0.07854  0.48246   0.45468  -0.31685  0.13606 -1.63340  0.44585
## 1200 -0.95197 -0.48246  -0.61113  -0.31685  0.31287  0.96248  1.88511
## 1201 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.80523  0.29338
## 1202 -0.95197 -0.48246  -1.22751   0.12600  0.41667  0.47617 -0.31776
## 1203 -0.07854 -0.48246  -0.61113  -0.31685  0.82562 -1.37639  0.44585
## 1204 -0.95197  0.48246  -1.22751  -0.31685 -1.05308 -0.57545 -0.01928
## 1205  1.09449 -0.48246   0.45468  -0.31685 -0.46725  1.58487  1.43533
## 1206 -0.95197 -0.48246  -0.05921   0.11440  0.13606  0.00332  0.72330
## 1207 -0.95197 -0.48246  -0.61113  -0.22166 -1.55078 -0.94779  0.58331
## 1208  1.09449 -0.48246   0.45468  -0.31685 -1.05308  0.63779 -0.45174
## 1209 -0.95197 -0.48246  -0.61113  -0.31685 -1.43907  1.11406  0.58331
## 1210 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649 -1.09207  0.29338
## 1211 -0.95197  0.48246  -0.61113  -0.31685  0.91093  0.16767  0.58331
## 1212 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  0.16767  0.58331
## 1213  0.49788  0.48246  -0.05921  -0.31685  0.73545  0.47617 -1.42424
## 1214 -0.07854 -0.48246  -0.05921  -0.31685  1.23461 -0.57545  0.88309
```

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## 1215 -0.95197 -0.48246  -0.05921  -0.31685 -0.14882  1.45421  1.43533
## 1216 -0.95197 -0.48246  -0.61113  -0.31685  0.41667  0.63779 -0.31776
## 1217 -0.07854  0.48246   1.16365  -0.31685  0.31287  1.28610 -0.17779
## 1218 -0.95197  0.48246  -0.61113  -0.31685 -1.32828  0.16767  0.72330
## 1219 -0.95197  0.48246  -0.05921  -0.31685  1.02119  0.96248  0.29338
## 1220 -0.95197  0.48246  -1.22751  -0.31685  1.02119 -0.30033  0.14143
## 1221 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  0.63779  0.29338
## 1222 -0.07854 -0.48246   1.98437  -0.31685 -0.46725 -2.32338 -2.21069
## 1223 -0.95197  0.48246  -0.61113  -0.31685  0.91093 -0.30033 -0.01928
## 1224 -0.95197 -0.48246   0.45468  -0.31685  0.62967  1.45421  0.58331
## 1225 -0.07854  0.48246   0.45468  -0.31685  0.52135  0.63779  1.24033
## 1226  0.49788 -0.48246  -1.73790  -0.31685  1.13281 -0.57545  0.14143
## 1227 -0.95197 -0.48246  -0.61113  -0.22166 -1.05308  1.93886  1.24033
## 1228 -0.95197  0.48246  -1.22751  -0.31685  0.13606  0.16767  1.06238
## 1229 -0.95197  0.48246   0.45468   0.11440  1.02119 -1.23177  1.06238
## 1230 -0.95197  0.48246  -0.61113  -0.31685  1.60383 -0.43999  0.44585
## 1231 -0.95197 -0.48246   0.45468  -0.31685  0.73545 -0.43999  0.58331
## 1232 -0.95197 -0.48246  -0.61113  -0.31685  0.04257 -1.09207 -0.01928
## 1233  1.82213 -0.48246   1.16365  -0.31685  0.13606  0.63779  0.58331
## 1234  1.09449  0.48246   1.16365  -0.31685 -1.69163  0.80523  1.24033
## 1235 -0.95197 -0.48246   0.45468  -0.31685  0.04257  0.80523  0.88309
## 1236 -0.07854 -0.48246  -1.22751  -0.31685  0.31287  0.32197  0.88309
## 1237 -0.95197  0.48246   0.45468  -0.31685 -0.05188  0.16767  0.44585
## 1238  1.09449  0.48246  -0.61113  -0.31685  0.41667  0.00332  0.29338
## 1239  0.49788  0.48246   0.45468  -0.31685  1.02119 -1.37639 -0.45174
## 1240 -0.07854  0.48246   0.45468  -0.31685 -1.32828  0.80523 -1.27553
## 1241  1.09449  0.48246   0.45468  -0.31685 -0.92104 -1.92173 -1.42424
## 1242 -0.07854  0.48246   0.45468  -0.31685  0.52135  0.00332 -0.97631
## 1243  1.09449  0.48246   0.45468  -0.31685 -1.32828  1.74091 -0.01928
## 1244  1.09449  0.48246  -0.05921  -0.31685 -1.32828 -0.30033 -2.21069
## 1245  1.82213 -0.48246   0.45468  -0.31685  0.13606 -0.57545 -0.84732
## 1246  1.09449  0.48246  -0.05921  -0.31685 -0.58016 -0.30033 -0.31776
## 1247  1.09449  0.48246   1.16365  -0.31685 -0.46725 -0.15487  1.43533
## 1248  0.49788  0.48246   1.16365  -0.31685 -0.92104 -0.15487  0.44585
## 1249  1.09449  0.48246   1.98437   0.12600  0.73545 -0.15487  1.24033
## 1250  0.49788  0.48246  -1.43719  -0.31685  0.31287 -1.63340 -1.97495
## 1251  0.49788  0.48246   0.45468  -0.31685 -0.34799 -1.23177 -1.97495
## 1252 -0.07854  0.48246   0.45468   0.11440  0.04257 -0.80615 -0.31776
## 1253  1.09449  0.48246   0.45468  -0.31685  1.37297 -0.69509  0.29338
## 1254  0.49788  0.48246   0.45468  -0.31685 -1.05308 -0.57545 -0.01928
## 1255 -0.07854  0.48246   1.16365  -0.31685  1.49158 -1.23177 -0.71727
## 1256 -0.07854  0.48246   1.98437  -0.31685 -0.92104  0.80523 -0.58331
## 1257  1.09449  0.48246   1.16365  -0.31685 -0.34799 -0.80615 -0.45174
## 1258  1.09449  0.48246   0.45468  -0.31685 -0.67825  0.32197 -0.31776
## 1259 -0.07854  0.48246  -0.61113  -0.31685  1.49158 -0.57545  1.06238
## 1260 -0.07854  0.48246  -0.05921  -0.31685  0.31287  0.96248 -0.97631
## 1261  1.09449  0.48246   0.45468  -0.31685  0.04257 -0.15487 -0.71727
## 1262 -0.07854  0.48246  -0.05921  -0.31685 -0.34799 -0.80615 -1.11902
## 1263  0.49788  0.48246  -1.73790  -0.31685 -0.79151  0.00332 -1.11902
## 1264 -0.07854  0.48246   1.16365  -0.31685  1.83990 -0.94779 -0.31776
## 1265  0.49788  0.48246  -0.05921  -0.31685  0.13606 -1.09207 -0.45174
## 1266  0.49788  0.48246   0.45468  -0.31685  0.41667  0.00332 -1.11902
## 1267 -0.07854  0.48246   1.16365  -0.31685 -0.05188 -0.43999 -0.45174
## 1268 -0.07854  0.48246  -0.05921  -0.31685 -1.32828 -0.15487 -1.11902
```

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## 1269  1.82213  0.48246   0.45468  -0.31685 -0.14882 -0.15487  0.14143
## 1270  0.49788  0.48246  -0.61113  -0.31685  1.72012 -0.94779 -1.82919
## 1271  0.49788 -0.48246   1.98437  -0.31685  1.72012 -0.15487  0.88309
## 1272  0.49788  0.48246   1.16365  -0.31685 -1.05308  0.16767  0.44585
## 1273  1.09449  0.48246  -0.05921  -0.31685 -1.69163 -0.69509 -1.68062
## 1274 -0.95197 -0.48246  -0.61113  -0.31685 -0.46725  1.11406  0.58331
## 1275 -0.07854  0.48246  -0.61113   0.12600 -0.05188  1.45421  2.15324
## 1276  0.49788  0.48246  -0.05921  -0.31685 -1.19430 -0.30033  0.72330
## 1277 -0.95197  0.48246   0.45468  -0.50212  0.62967  0.16767 -1.11902
## 1278 -0.95197 -0.48246   0.45468  -0.50212  0.82562  0.63779 -0.84732
## 1279 -0.95197 -0.48246  -0.61113  -0.31685 -1.32828  1.74091  0.29338
## 1280 -0.95197  0.48246  -0.61113   0.11440 -1.43907  0.00332  0.14143
## 1281 -0.95197  0.48246  -0.61113  -0.31685  0.82562 -2.03972  0.44585
## 1282 -0.95197 -0.48246  -0.61113  -0.31685  1.98437 -0.94779 -0.01928
## 1283 -0.95197 -0.48246  -0.61113  -0.22166 -1.86962  1.93886  2.90161
## 1284 -0.95197 -0.48246  -0.61113  -0.31685  0.73545  0.47617 -0.71727
## 1285  0.49788  0.48246   0.45468  -0.31685 -0.58016  0.47617  2.15324
## 1286 -0.95197  0.48246  -0.61113  -0.31685 -0.05188  0.96248 -0.01928
## 1287 -0.95197 -0.48246   1.16365  -0.31685 -0.46725  0.32197  0.88309
## 1288 -0.95197 -0.48246  -0.61113   0.11440  1.13281 -1.63340 -0.01928
## 1289 -0.07854 -0.48246  -0.05921  -0.31685 -0.24649  0.80523  0.29338
## 1290 -0.07854 -0.48246  -0.61113  -0.31685  1.83990 -1.09207  0.44585
## 1291 -0.07854  0.48246   1.16365  -0.31685  0.73545  2.12700  1.24033
## 1292 -0.95197  0.48246  -0.61113  -0.31685  1.83990 -2.21069  0.72330
## 1293 -0.95197 -0.48246  -0.61113  -0.31685  0.04257 -0.57545  1.24033
## 1294 -0.95197  0.48246  -0.61113  -0.31685 -0.34799  0.47617 -0.17779
## 1295 -0.95197 -0.48246  -0.61113   0.11440 -0.34799  0.00332  0.58331
## 1296  0.49788  0.48246   0.45468  -0.31685 -2.05048  0.47617  0.58331
## 1297 -0.07854 -0.48246  -0.61113  -0.31685  0.91093 -0.15487  1.65653
## 1298  0.49788  0.48246  -0.61113  -0.31685 -0.58016 -0.94779  1.43533
## 1299 -0.95197  0.48246  -0.61113  -0.31685  0.22393  1.28610  0.14143
## 1300 -0.95197 -0.48246   0.45468  -0.31685 -0.67825  1.45421  1.43533
## 1301  0.49788 -0.48246   0.45468  -0.31685 -0.05188 -0.57545 -0.97631
## 1302 -0.95197  0.48246  -0.61113  -0.31685 -0.46725  0.80523  1.65653
## 1303 -0.95197 -0.48246  -0.61113  -0.31685  2.61139 -2.32338  1.06238
## 1304 -0.07854 -0.48246  -0.61113  -0.31685 -0.34799  0.63779  1.88511
## 1305 -0.07854 -0.48246   1.16365  -0.31685 -0.92104 -1.23177 -0.17779
## 1306 -0.07854  0.48246   0.45468   0.11440 -0.34799  0.47617  0.14143
## 1307 -0.07854  0.48246   1.16365  -0.31685 -1.43907  2.85950  0.72330
## 1308 -0.95197 -0.48246  -1.73790  -0.31685  0.52135 -0.80615 -0.97631
## 1309 -0.95197  0.48246  -0.61113  -0.31685 -0.24649  0.32197  0.29338
## 1310  0.49788  0.48246   1.16365  -0.31685 -1.05308  1.93886  0.88309
## 1311 -0.95197  0.48246  -0.61113  -0.31685 -1.32828  2.32338 -2.39883
## 1312  0.49788 -0.48246   0.45468  -0.31685 -0.92104  0.96248  0.58331
## 1313 -0.95197 -0.48246   0.45468  -0.31685 -1.86962  1.11406  0.72330
## 1314 -0.07854 -0.48246  -0.05921  -0.31685 -0.92104 -0.15487  0.72330
## 1315 -0.07854  0.48246   0.45468  -0.31685  0.04257  0.80523 -1.68062
## 1316 -0.95197  0.48246  -0.61113  -0.50212  0.41667 -1.23177 -0.45174
## 1317  0.49788 -0.48246   0.45468  -0.31685 -0.67825 -0.30033 -0.31776
## 1318 -0.95197 -0.48246  -0.61113  -0.31685  0.82562  0.96248 -0.17779
## 1319 -0.95197  0.48246  -0.61113   0.11440 -0.46725  0.80523  2.15324
## 1320 -0.95197  0.48246   0.45468  -0.31685  0.22393  0.32197  2.44904
## 1321  0.49788 -0.48246  -0.61113  -0.31685  1.02119 -1.37639 -0.17779
## 1322 -0.95197  0.48246  -0.61113  -0.31685  0.41667 -0.57545  1.06238
```

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## 1323 -0.95197 -0.48246  -0.05921  -0.31685  0.62967 -1.92173  0.29338
## 1324 -0.95197 -0.48246  -0.05921  -0.31685 -0.92104  0.32197  1.43533
## 1325 -0.95197 -0.48246  -0.61113  -0.31685 -1.32828 -0.30033  0.14143
## 1326 -0.95197  0.48246   0.45468  -0.31685 -0.67825  0.80523  1.06238
## 1327 -0.07854  0.48246   0.45468  -0.31685  1.83990 -0.80615  1.24033
## 1328 -0.95197 -0.48246   0.45468   0.12600  1.49158 -0.15487 -0.01928
## 1329  0.49788 -0.48246   0.45468  -0.31685  1.23461 -1.09207  0.88309
## 1330 -0.95197  0.48246  -0.05921  -0.31685  1.83990 -1.37639 -1.82919
## 1331 -0.95197 -0.48246   0.45468  -0.31685  0.41667 -0.30033  0.44585
## 1332 -0.07854 -0.48246  -0.61113  -0.31685 -2.52197  0.32197  0.72330
## 1333  1.09449 -0.48246   0.45468  -0.31685  1.23461 -1.23177  0.44585
## 1334 -0.95197  0.48246   0.45468  -0.31685  0.04257  1.58487 -0.71727
## 1335 -0.95197  0.48246   0.45468  -1.10702  0.13606  0.00332 -0.45174
## 1336  0.49788 -0.48246  -0.05921  -0.31685  0.13606  0.47617  0.29338
## 1337 -0.95197 -0.48246  -0.05921  -0.31685  1.72012 -1.92173 -0.31776
## 1338 -0.95197 -0.48246  -1.22751   0.11440 -0.58016  3.27393  2.15324
## 1339  0.49788 -0.48246  -1.22751  -1.10702  0.73545 -1.37639 -0.97631
## 1340  0.49788  0.48246   1.98437  -0.31685 -0.34799 -0.43999  1.24033
## 1341 -0.95197 -0.48246  -0.05921  -0.31685  0.22393  0.63779 -1.82919
## 1342 -0.95197 -0.48246  -1.22751  -0.31685  1.37297 -1.23177 -1.11902
## 1343 -0.95197 -0.48246  -1.22751  -0.31685  0.82562  1.11406  1.65653
## 1344  1.09449 -0.48246  -0.61113  -0.31685  0.82562 -0.15487  0.44585
## 1345 -0.95197 -0.48246   0.45468  -0.31685  0.73545 -1.76250  0.88309
## 1346 -0.95197  0.48246  -1.22751  -0.31685  1.13281 -0.94779 -0.31776
## 1347 -0.95197  0.48246  -0.61113  -0.31685 -1.05308  2.57309  0.29338
## 1348 -0.95197  0.48246  -0.61113  -0.31685 -2.05048 -0.94779  0.14143
## 1349 -0.95197  0.48246   0.45468  -0.31685  0.41667 -0.57545 -0.97631
## 1350  1.82213 -0.48246   0.45468  -0.31685  1.72012 -2.11437 -1.11902
## 1351 -0.95197  0.48246  -1.22751  -0.31685 -0.58016  0.63779  1.24033
## 1352 -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -0.94779  1.43533
## 1353 -0.95197 -0.48246   0.45468  -0.31685 -0.14882  0.32197  0.58331
## 1354 -0.07854 -0.48246  -0.61113  -0.31685 -1.69163  0.63779  0.58331
## 1355 -0.95197 -0.48246  -0.05921  -0.31685  0.41667  0.16767 -0.31776
## 1356 -0.95197 -0.48246  -0.61113  -0.31685 -1.43907 -0.43999  0.88309
## 1357 -0.95197 -0.48246  -0.61113  -0.31685 -0.46725 -1.63340  0.44585
## 1358 -0.95197  0.48246  -0.61113  -0.31685  0.52135  0.96248  1.65653
## 1359 -0.95197  0.48246  -0.61113  -0.31685 -1.05308  0.80523  1.65653
## 1360 -0.95197 -0.48246  -0.61113  -0.31685  0.82562 -1.09207  0.58331
## 1361 -0.07854  0.48246   1.16365  -0.31685  0.31287 -0.57545  0.14143
## 1362 -0.95197 -0.48246  -0.61113  -0.31685  0.82562  0.63779 -0.84732
## 1363  0.49788  0.48246   0.45468  -0.31685 -0.05188 -0.94779  0.29338
## 1364 -0.95197  0.48246  -1.73790  -0.31685  0.13606 -0.30033 -0.01928
## 1365 -0.95197 -0.48246  -1.22751  -0.31685  0.22393 -1.76250  0.44585
## 1366 -0.95197  0.48246  -0.61113  -0.31685  1.49158  0.63779  1.06238
## 1367 -0.95197 -0.48246  -0.61113  -0.31685  0.41667  1.58487  1.06238
## 1368 -0.07854  0.48246  -0.05921  -0.31685  2.46262  0.16767  0.14143
## 1369 -0.07854  0.48246   1.16365  -0.31685 -0.58016 -0.43999 -1.55521
## 1370 -0.95197 -0.48246  -0.61113  -0.31685  1.23461  0.16767  0.58331
## 1371 -0.07854 -0.48246   0.45468  -0.31685  1.13281  0.16767 -0.31776
## 1372  1.09449 -0.48246   0.45468   0.11440 -0.58016 -0.57545 -0.01928
## 1373 -0.95197 -0.48246  -1.22751  -0.31685 -1.05308  1.74091  0.29338
## 1374  0.49788 -0.48246   0.45468  -0.31685  1.49158 -0.57545  0.88309
## 1375 -0.07854  0.48246   1.16365  -0.31685  0.62967  0.32197 -0.45174
## 1376 -0.07854  0.48246   1.16365   0.12600  1.49158 -0.94779  0.72330
```

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## 1377 -0.95197 -0.48246  -0.61113  -0.31685 -0.58016  0.47617  1.65653
## 1378 -0.07854  0.48246   0.45468  -0.31685 -1.19430  0.80523 -0.97631
## 1379 -0.95197 -0.48246  -0.61113  -0.31685 -1.05308  0.47617  1.06238
## 1380 -0.95197 -0.48246  -0.61113  -0.31685 -1.32828 -0.30033  0.88309
## 1381 -0.95197  0.48246   0.45468  -0.31685 -0.67825  0.32197  0.44585
## 1382 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078  1.28610  1.43533
## 1383 -0.95197  0.48246  -0.61113  -0.31685 -0.24649 -0.43999 -0.31776
## 1384  1.09449  0.48246  -0.61113  -0.31685 -0.05188 -0.94779  1.06238
## 1385 -0.07854  0.48246   1.98437  -0.31685  0.52135  0.32197  1.65653
## 1386  0.49788  0.48246  -0.05921  -0.31685  0.62967  0.47617  0.44585
## 1387 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  0.47617  0.88309
## 1388 -0.95197 -0.48246   0.45468  -0.31685  0.82562  0.32197 -0.58331
## 1389 -0.95197 -0.48246  -0.61113   0.12600 -0.46725  2.12700  1.88511
## 1390  1.09449 -0.48246  -0.05921  -0.31685 -0.34799  0.16767 -0.71727
## 1391 -0.07854  0.48246   1.16365  -0.31685  1.37297  0.32197 -0.17779
## 1392 -0.07854  0.48246   1.16365  -0.31685  0.73545  0.00332  0.14143
## 1393 -0.07854  0.48246   0.45468  -0.31685  0.41667 -0.15487 -0.01928
## 1394 -0.07854  0.48246   1.16365  -0.31685  1.72012 -0.43999 -1.27553
## 1395 -0.95197  0.48246   0.45468  -0.31685 -0.58016  0.47617  0.88309
## 1396 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  1.11406 -0.01928
## 1397 -0.07854  0.48246   0.45468  -0.31685  0.82562 -0.80615 -0.58331
## 1398 -0.07854  0.48246   1.16365  -0.31685  1.02119  0.96248 -0.97631
## 1399 -0.07854  0.48246   0.45468  -0.31685  0.62967  0.16767  0.14143
## 1400 -0.07854  0.48246   0.45468  -0.31685  0.91093  0.00332  0.88309
## 1401 -0.07854  0.48246   0.45468  -0.31685  0.41667  0.00332 -1.11902
## 1402 -0.95197  0.48246   0.45468  -0.31685 -2.42317  0.16767 -1.82919
## 1403 -0.07854  0.48246   1.98437  -0.22166  1.60383  1.28610  0.58331
## 1404 -0.07854  0.48246   0.45468  -0.31685  0.22393 -0.57545 -1.55521
## 1405 -0.07854  0.48246   1.16365  -0.31685 -0.79151  0.80523  1.24033
## 1406 -0.07854 -0.48246   1.16365  -0.31685  1.37297 -1.23177 -0.58331
## 1407 -0.07854  0.48246   1.98437  -0.31685 -2.21844 -0.94779 -0.71727
## 1408 -0.07854  0.48246   0.45468  -0.31685 -0.58016 -0.43999  0.58331
## 1409 -0.07854  0.48246   0.45468  -0.31685  0.41667 -0.30033  1.43533
## 1410 -0.07854  0.48246   1.16365  -0.31685  1.02119  0.80523  1.24033
## 1411 -0.07854  0.48246   0.45468  -0.31685  1.02119 -0.69509 -0.31776
## 1412 -0.07854  0.48246   1.98437  -0.31685 -0.34799  2.32338  1.43533
## 1413 -0.95197 -0.48246  -1.73790  -0.31685  1.83990 -1.37639 -0.17779
## 1414 -0.95197 -0.48246  -0.61113  -0.31685 -1.19430 -1.09207 -0.84732
## 1415 -0.95197  0.48246   0.45468  -0.50212  0.91093 -0.69509 -0.71727
## 1416 -0.07854  0.48246   1.16365  -0.31685 -0.14882 -0.30033 -1.27553
## 1417 -0.95197 -0.48246  -0.61113  -0.31685 -0.34799  0.80523  1.43533
## 1418 -0.07854 -0.48246  -0.61113  -0.31685  0.82562 -0.43999  0.58331
## 1419 -0.07854 -0.48246  -0.61113  -0.31685 -0.14882  0.47617  0.72330
## 1420  1.09449 -0.48246  -2.43591  -0.31685 -0.05188 -0.94779 -0.01928
## 1421 -0.95197 -0.48246   0.45468  -0.31685 -0.79151  1.74091  1.65653
## 1422 -0.07854 -0.48246  -0.61113  -0.31685  0.62967 -0.57545 -0.31776
## 1423 -0.07854  0.48246   0.45468  -0.31685 -0.24649  0.63779  1.24033
## 1424  0.49788 -0.48246  -0.05921  -1.10702  0.31287  0.32197 -0.17779
## 1425 -0.95197  0.48246  -0.05921   0.11440  0.04257  0.00332 -0.17779
## 1426 -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  1.74091  0.58331
## 1427 -0.95197  0.48246  -0.61113  -0.31685  0.73545 -0.30033 -0.71727
## 1428 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  1.45421  1.43533
## 1429 -0.95197  0.48246  -0.61113  -0.31685  1.23461  1.11406 -0.58331
## 1430  1.09449  0.48246   1.98437  -0.31685 -1.05308 -1.23177 -0.71727
```

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## 1431 -0.07854  0.48246   1.16365  -0.22166  0.31287 -0.94779 -0.58331
## 1432 -0.07854  0.48246   1.16365  -0.31685  0.41667 -1.37639 -1.11902
## 1433  1.82213  0.48246   1.16365  -0.31685 -0.79151  0.00332  0.14143
## 1434  1.82213  0.48246  -0.05921  -0.31685 -0.79151 -0.57545  0.29338
## 1435 -0.95197 -0.48246  -1.73790  -0.31685  1.23461 -0.43999  0.29338
## 1436 -0.95197 -0.48246  -0.61113  -0.31685 -1.86962  1.11406  0.72330
## 1437 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  0.63779 -0.01928
## 1438  0.49788  0.48246   1.16365  -0.31685 -0.14882  0.00332 -0.84732
## 1439  1.09449  0.48246   1.16365  -0.31685 -1.19430 -0.15487  0.14143
## 1440 -0.07854  0.48246   1.16365  -0.31685  1.02119 -0.94779 -0.71727
## 1441  0.49788  0.48246   1.98437  -0.31685 -0.46725  0.96248  0.72330
## 1442  0.49788  0.48246   1.16365  -0.31685 -0.67825 -0.43999 -1.11902
## 1443  1.09449  0.48246   1.16365  -0.31685 -1.43907  0.16767  0.29338
## 1444 -0.07854  0.48246   1.16365  -0.31685 -0.67825  0.96248  0.29338
## 1445 -0.07854  0.48246   1.16365  -0.31685  0.04257  0.63779 -1.11902
## 1446 -0.07854  0.48246   0.45468  -1.10702 -1.19430  1.45421  0.58331
## 1447 -0.95197  0.48246   1.16365  -0.50212 -0.58016  0.16767 -0.84732
## 1448 -0.07854  0.48246   1.16365  -0.31685 -1.05308  1.11406  0.88309
## 1449 -0.07854  0.48246   1.98437  -0.31685 -1.05308 -0.57545 -0.01928
## 1450 -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.43999  2.15324
## 1451 -0.95197  0.48246   0.45468  -0.31685  0.31287  0.16767 -1.55521
## 1452 -0.07854  0.48246   1.98437  -0.31685 -0.46725  0.00332 -0.17779
## 1453 -0.95197 -0.48246  -0.05921  -0.31685  0.73545 -0.69509  1.43533
## 1454  1.09449  0.48246   1.16365  -0.31685 -2.05048  0.63779  0.14143
## 1455 -0.07854  0.48246   1.98437  -0.31685  0.52135 -1.09207 -0.45174
## 1456 -0.07854  0.48246   0.45468  -0.31685 -1.32828 -0.57545 -0.17779
## 1457 -0.95197  0.48246   0.45468  -0.31685 -0.92104  0.80523 -0.01928
## 1458  0.49788  0.48246   1.98437  -0.31685 -2.05048  1.58487  0.14143
## 1459  1.82213 -0.48246   1.16365  -0.31685  0.13606  0.63779  0.88309
## 1460 -0.07854 -0.48246   1.16365  -0.31685  0.13606  0.16767 -0.45174
## 1461 -0.95197 -0.48246  -0.61113  -0.31685 -1.19430  0.80523  0.88309
## 1462 -0.07854 -0.48246   1.16365  -0.31685 -2.75696  1.28610 -0.58331
## 1463 -0.07854  0.48246  -0.61113   1.90725  0.73545 -0.57545 -0.31776
## 1464 -0.95197  0.48246   0.45468  -0.31685 -0.58016  0.32197  0.72330
## 1465  1.82213  0.48246   0.45468  -0.31685 -1.86962  0.80523  0.88309
## 1466 -0.07854  0.48246   1.16365  -0.31685 -0.14882 -0.80615 -1.27553
## 1467 -0.95197  0.48246   0.45468  -0.31685  0.31287  0.00332 -0.01928
## 1468  2.59171 -0.48246   0.45468  -0.31685 -1.86962 -0.15487 -0.58331
## 1469  1.82213 -0.48246   1.16365  -0.31685 -0.79151 -0.30033  0.29338
## 1470 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  0.47617 -0.17779
## 1471 -0.07854  0.48246   1.16365  -0.31685 -0.24649  0.32197  0.88309
## 1472  1.09449 -0.48246  -0.61113   0.11440  1.02119 -0.69509 -0.84732
## 1473 -0.07854  0.48246  -0.61113  -0.31685  2.46262 -1.92173 -0.58331
## 1474 -0.07854 -0.48246  -0.05921  -0.31685 -0.34799 -0.43999 -0.17779
## 1475 -0.95197 -0.48246  -0.61113  -0.31685  0.41667 -0.69509 -0.01928
## 1476 -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  1.45421  1.65653
## 1477  0.49788  0.48246  -0.05921  -0.31685 -0.05188 -0.57545 -2.09015
## 1478 -0.07854  0.48246  -0.61113   0.11440  1.37297  0.32197  0.72330
## 1479  1.09449  0.48246   0.45468  -0.31685  1.60383 -2.32338  0.14143
## 1480  1.09449  0.48246   1.98437  -0.31685 -0.92104  0.00332  0.14143
## 1481 -0.07854  0.48246   0.45468  -0.31685 -0.24649  0.47617  0.72330
## 1482  0.49788 -0.48246  -0.05921  -0.31685  0.52135 -1.09207 -0.45174
## 1483 -0.07854  0.48246   1.98437  -0.31685 -1.05308  1.45421 -0.84732
## 1484 -0.95197 -0.48246  -0.61113  -0.31685 -1.19430  1.11406  1.24033
```

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## 1485 -0.07854  0.48246   0.45468  -0.31685 -0.05188 -0.30033 -1.27553
## 1486 -0.95197 -0.48246   0.45468  -0.31685  0.73545  0.00332 -0.17779
## 1487 -0.07854  0.48246  -0.61113  -0.31685 -0.46725 -0.43999 -0.17779
## 1488 -0.07854  0.48246   1.98437  -0.31685  1.37297 -0.69509 -0.58331
## 1489 -0.95197  0.48246   1.16365  -0.31685 -0.05188  1.11406 -1.42424
## 1490 -0.95197 -0.48246  -0.61113  -0.31685  1.49158 -0.57545 -0.71727
## 1491  1.09449 -0.48246  -0.61113  -0.31685 -0.14882 -0.30033  0.58331
## 1492 -0.95197 -0.48246  -0.61113  -0.31685  2.12700 -0.94779 -0.45174
## 1493 -0.95197 -0.48246  -0.61113  -0.31685  0.91093 -3.27393 -0.45174
## 1494 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151 -0.94779 -0.01928
## 1495 -0.07854 -0.48246   1.16365  -0.31685 -1.19430  0.16767  0.29338
## 1496  1.09449  0.48246  -2.43591  -0.31685  0.62967 -0.15487 -0.45174
## 1497  1.09449 -0.48246   0.45468  -0.31685 -1.05308  0.96248  0.44585
## 1498 -0.07854 -0.48246   1.98437   0.11440 -0.34799  0.47617 -0.01928
## 1499 -0.95197  0.48246  -0.61113  -0.31685  0.62967  0.16767  0.58331
## 1500 -0.95197 -0.48246   0.45468  -0.31685  0.41667 -1.92173  0.88309
## 1501 -0.07854 -0.48246   0.45468  -0.31685 -0.46725  0.47617  1.43533
## 1502 -0.95197  0.48246   0.45468   0.12600 -0.46725  0.00332 -0.31776
## 1503  0.49788  0.48246  -0.05921  -0.31685  1.72012 -2.72827  0.29338
## 1504  1.09449  0.48246   1.98437  -0.31685  0.04257  1.58487  1.06238
## 1505 -0.95197  0.48246  -1.73790  -0.31685  2.82196 -2.44904  1.06238
## 1506 -0.95197  0.48246   0.45468  -0.31685  1.02119 -0.69509  0.88309
## 1507 -0.07854  0.48246  -0.05921  -0.31685  0.73545 -1.23177  0.72330
## 1508 -0.07854 -0.48246  -0.61113  -0.31685  0.91093 -2.11437 -0.17779
## 1509 -0.95197 -0.48246   0.45468  -0.31685  0.73545 -0.80615  1.65653
## 1510 -0.95197 -0.48246  -2.43591  -0.31685  2.28554 -0.69509  0.29338
## 1511 -0.95197 -0.48246  -0.61113   0.12600 -0.14882 -0.57545 -0.84732
## 1512 -0.07854 -0.48246  -1.22751  -0.31685  1.23461 -2.32338  0.29338
## 1513 -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -0.43999 -0.01928
## 1514 -0.95197 -0.48246  -1.22751  -0.31685 -0.79151  1.93886  1.65653
## 1515  1.09449 -0.48246   1.98437  -0.31685  0.62967 -1.37639  1.43533
## 1516 -0.95197 -0.48246  -0.05921  -0.31685  0.04257 -1.63340  1.88511
## 1517 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649 -0.80615 -1.27553
## 1518 -0.95197 -0.48246  -0.61113  -0.31685  1.37297 -0.30033 -0.17779
## 1519 -0.95197 -0.48246  -0.05921  -0.31685  1.37297 -1.63340  1.06238
## 1520 -0.07854 -0.48246  -0.05921  -0.31685 -0.05188 -2.72827  1.24033
## 1521 -0.95197 -0.48246  -0.61113  -0.31685  0.82562  2.12700  1.88511
## 1522 -0.95197 -0.48246  -1.22751  -0.31685  1.60383 -2.21069  1.24033
## 1523 -0.95197 -0.48246  -1.73790  -0.31685  0.82562  1.28610  0.29338
## 1524 -0.95197 -0.48246  -1.22751  -0.31685  0.52135  1.28610  1.24033
## 1525 -0.95197 -0.48246  -0.61113  -0.31685  0.91093  0.00332  1.06238
## 1526 -0.95197  0.48246   0.45468  -0.31685 -1.86962  1.93886  0.58331
## 1527 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078  0.96248  1.65653
## 1528 -0.95197 -0.48246  -2.43591  -0.31685 -1.19430 -0.94779  1.06238
## 1529 -0.07854  0.48246   0.45468   0.11440 -0.14882  0.96248  1.24033
## 1530 -0.95197 -0.48246  -0.61113  -0.31685  1.02119 -1.76250  0.58331
## 1531 -0.95197 -0.48246  -0.61113   0.11440 -0.92104  1.28610 -0.45174
## 1532 -0.07854 -0.48246  -1.22751  -0.31685  0.04257  0.32197 -0.97631
## 1533  0.49788  0.48246  -0.61113  -0.31685  0.31287  0.00332 -0.84732
## 1534 -0.95197  0.48246  -0.61113   0.11440 -0.46725  0.80523  0.29338
## 1535 -0.95197  0.48246  -0.61113  -0.31685  0.13606 -0.94779 -1.11902
## 1536 -0.95197  0.48246  -0.61113   0.11440  0.04257  1.74091 -0.58331
## 1537 -0.95197 -0.48246  -0.61113  -0.31685  1.13281 -0.69509  0.88309
## 1538 -0.95197  0.48246  -0.61113  -0.31685  0.62967 -0.15487  1.88511
```

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## 1539 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078  1.28610 -0.97631
## 1540 -0.07854 -0.48246  -0.61113  -0.31685  0.82562 -3.00537  0.29338
## 1541 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882 -0.43999 -0.71727
## 1542 -0.95197 -0.48246  -0.61113  -0.31685  0.82562  0.80523  0.88309
## 1543 -0.95197  0.48246  -0.61113  -0.31685  1.02119 -0.94779  0.88309
## 1544 -0.95197 -0.48246  -1.22751   0.11440 -0.24649 -1.92173  0.29338
## 1545 -0.95197  0.48246  -0.61113  -0.31685  1.49158  0.16767  0.88309
## 1546 -0.07854 -0.48246   0.45468  -0.31685 -1.19430 -0.57545 -1.68062
## 1547 -0.07854  0.48246   1.16365  -0.31685 -0.67825 -0.94779  0.58331
## 1548 -0.07854  0.48246  -0.05921  -0.31685 -0.46725  0.00332 -1.11902
## 1549  1.82213  0.48246  -0.05921  -0.31685  0.41667 -1.50796 -1.82919
## 1550  1.09449  0.48246  -0.61113  -0.31685 -0.14882 -0.94779 -1.27553
## 1551  1.09449  0.48246  -0.05921  -0.31685 -0.58016 -0.57545 -1.27553
## 1552 -0.95197 -0.48246  -0.61113  -0.31685 -0.05188 -2.32338 -0.84732
## 1553 -0.07854 -0.48246   1.16365  -0.31685 -1.55078  1.11406 -0.01928
## 1554 -0.95197  0.48246   1.16365  -0.31685  0.31287  0.80523 -0.97631
## 1555 -0.07854  0.48246  -0.61113  -0.31685 -1.32828  1.58487 -0.58331
## 1556  1.82213  0.48246   0.45468  -0.31685 -1.86962  1.58487  0.44585
## 1557 -0.95197  0.48246   0.45468  -0.22166 -0.92104 -0.15487 -0.84732
## 1558 -0.07854  0.48246   1.16365  -0.50212  0.73545  0.16767 -0.71727
## 1559  0.49788  0.48246   0.45468  -0.31685  0.62967 -1.50796 -0.31776
## 1560  1.09449  0.48246  -2.43591  -0.31685  0.22393 -0.30033 -1.27553
## 1561  0.49788 -0.48246  -0.05921  -0.31685  0.73545 -1.50796 -0.84732
## 1562  0.49788  0.48246   0.45468  -0.31685 -0.05188  1.74091 -2.85950
## 1563  1.09449  0.48246  -0.05921  -0.31685 -0.46725 -0.30033 -1.42424
## 1564  0.49788  0.48246  -0.05921  -0.31685  0.82562  0.80523  0.29338
## 1565  1.09449  0.48246  -0.05921  -0.31685  2.46262 -2.53830 -0.31776
## 1566  0.49788 -0.48246   1.16365  -0.31685 -1.55078  0.80523  1.24033
## 1567 -0.07854 -0.48246   0.45468  -0.31685 -0.05188  0.47617 -1.11902
## 1568 -0.07854  0.48246   1.16365  -0.31685 -1.05308  1.28610 -0.45174
## 1569  1.09449 -0.48246  -0.05921  -0.31685 -0.79151 -0.43999 -0.01928
## 1570 -0.95197  0.48246  -0.61113  -0.31685 -0.58016 -0.30033 -0.84732
## 1571 -0.07854  0.48246   1.16365  -0.31685  0.31287  0.00332 -0.31776
## 1572  1.09449  0.48246  -0.05921  -0.31685  1.02119  0.32197  0.72330
## 1573  0.49788  0.48246   0.45468  -0.31685 -0.05188  0.96248 -1.11902
## 1574  0.49788  0.48246  -0.61113  -0.31685 -0.24649  0.16767 -1.82919
## 1575 -0.07854  0.48246   1.16365  -0.31685 -0.24649  0.80523 -0.58331
## 1576  1.09449  0.48246   0.45468  -0.31685 -1.05308 -0.15487 -1.11902
## 1577  1.09449  0.48246   1.16365  -0.31685  0.41667 -0.43999  1.43533
## 1578  0.49788  0.48246  -1.73790  -0.31685 -0.46725  0.16767 -0.45174
## 1579  1.09449  0.48246  -0.05921  -0.31685  0.62967 -1.50796 -2.39883
## 1580  0.49788  0.48246   1.16365  -0.31685 -0.24649 -0.15487 -1.27553
## 1581  0.49788 -0.48246  -0.05921  -0.31685  0.31287 -1.23177 -0.01928
## 1582  0.49788  0.48246   1.16365  -0.31685  0.73545  2.32338  0.14143
## 1583 -0.07854  0.48246   0.45468  -0.31685  0.13606  1.11406  0.14143
## 1584  0.49788  0.48246   0.45468  -0.31685  0.04257 -0.15487  0.88309
## 1585  0.49788  0.48246  -0.05921  -0.31685 -0.34799  0.80523 -1.68062
## 1586  0.49788 -0.48246  -1.73790  -0.31685 -1.32828  2.12700 -0.58331
## 1587  0.49788 -0.48246  -0.05921  -0.31685 -2.05048  1.45421 -0.01928
## 1588  0.49788  0.48246   0.45468  -0.31685  0.82562 -0.69509 -0.84732
## 1589  1.09449  0.48246  -0.05921  -0.31685 -2.05048  0.80523 -0.97631
## 1590  1.09449  0.48246   0.45468  -0.31685 -0.79151  1.93886 -0.45174
## 1591  0.49788  0.48246   1.98437  -0.31685  0.04257  0.80523  0.29338
## 1592 -0.07854  0.48246   0.45468  -0.31685 -0.24649  1.11406 -0.45174
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## 1593 -0.07854  0.48246   0.45468  -0.31685 -0.58016  1.74091  0.88309
## 1594  1.82213  0.48246  -0.61113  -0.31685 -0.05188  0.63779  0.14143
## 1595  0.49788  0.48246   0.45468  -0.31685 -0.67825  0.32197 -0.97631
## 1596 -0.07854  0.48246   1.16365  -0.31685 -0.79151  1.28610 -1.82919
## 1597 -0.07854  0.48246  -0.05921  -0.31685 -1.19430  1.11406 -1.42424
## 1598 -0.07854  0.48246  -0.05921  -0.31685 -0.67825  0.96248 -1.11902
## 1599 -0.07854 -0.48246   1.16365  -0.31685  0.13606  0.63779  0.14143
## 1600  1.82213  0.48246   1.16365  -0.31685  0.31287  0.47617  1.06238
## 1601 -0.07854  0.48246   0.45468  -0.31685 -0.05188  2.85950  1.88511
## 1602  1.09449 -0.48246  -1.73790  -0.31685 -0.34799  1.93886 -0.01928
## 1603 -0.07854  0.48246   0.45468  -0.50212 -0.24649  2.12700 -2.21069
## 1604  0.49788  0.48246  -0.05921  -0.31685 -1.55078  1.45421  0.44585
## 1605  0.49788  0.48246   1.16365  -0.31685 -0.79151  0.32197 -0.01928
## 1606 -0.07854 -0.48246  -0.61113  -0.31685 -0.24649 -1.09207  2.44904
## 1607 -0.07854  0.48246   0.45468  -0.31685 -0.14882 -1.09207 -1.68062
## 1608  1.09449  0.48246   0.45468  -0.31685  0.22393  0.63779 -0.97631
## 1609 -0.07854  0.48246   0.45468  -0.31685 -0.34799 -0.43999 -1.42424
## 1610  0.49788  0.48246   0.45468  -0.22166  0.13606  1.28610 -0.97631
## 1611 -0.07854 -0.48246  -0.61113  -0.31685 -2.52197  2.32338  0.29338
## 1612  0.49788  0.48246   1.98437  -0.31685 -1.19430  0.47617  1.24033
## 1613  1.82213 -0.48246  -0.05921  -0.31685  0.62967 -1.50796 -1.55521
## 1614 -0.07854 -0.48246   1.16365  -0.31685  0.52135  0.00332  0.72330
## 1615  1.09449 -0.48246  -0.05921  -0.31685  0.31287  0.16767 -1.11902
## 1616 -0.07854 -0.48246  -0.61113  -0.31685  0.31287 -0.30033  1.06238
## 1617  1.09449 -0.48246  -0.05921  -0.31685  0.13606  0.00332 -0.45174
## 1618 -0.07854 -0.48246   0.45468  -1.10702  1.37297 -0.30033 -0.97631
## 1619  0.49788 -0.48246  -0.05921  -0.31685 -1.55078 -0.15487  0.58331
## 1620  0.49788 -0.48246   0.45468  -0.31685  0.52135 -0.80615 -1.27553
## 1621  1.09449 -0.48246   1.16365  -0.31685  0.13606 -0.69509 -0.17779
## 1622  0.49788 -0.48246  -0.61113  -0.31685 -0.79151  0.47617 -0.01928
## 1623  0.49788  0.48246  -0.05921  -0.31685 -0.79151  0.32197 -1.27553
## 1624 -0.07854  0.48246  -0.05921  -0.31685 -1.43907  0.63779 -1.42424
## 1625 -0.07854  0.48246   1.16365  -0.31685 -1.86962  1.28610 -1.27553
## 1626 -0.07854  0.48246   1.16365  -0.31685  0.62967  0.00332 -0.01928
## 1627  1.09449  0.48246  -0.05921  -0.31685  0.13606 -0.15487 -0.84732
## 1628  0.49788  0.48246   0.45468  -0.31685 -0.14882  0.47617  0.88309
## 1629  0.49788  0.48246  -0.05921  -0.31685 -2.21844  0.47617 -0.17779
## 1630  0.49788 -0.48246  -0.05921  -0.31685  1.60383  0.16767 -0.45174
## 1631  1.09449  0.48246  -0.05921  -1.10702 -0.34799  0.32197 -0.84732
## 1632 -0.95197  0.48246  -1.22751  -0.31685  0.04257 -1.37639 -1.27553
## 1633  1.82213 -0.48246  -2.43591  -0.31685 -1.43907  0.00332 -1.68062
## 1634  1.09449  0.48246  -0.05921  -0.31685  0.04257  0.63779 -1.68062
## 1635 -0.95197 -0.48246  -0.61113  -0.31685  1.83990 -1.23177  0.14143
## 1636  1.09449  0.48246  -1.73790  -0.31685  0.22393 -0.57545 -0.71727
## 1637  1.09449  0.48246  -0.05921  -0.31685 -0.05188  0.16767 -0.97631
## 1638  0.49788  0.48246  -0.05921  -0.31685  0.31287  0.63779 -0.58331
## 1639  1.09449  0.48246  -0.05921  -0.31685  1.02119  0.00332 -0.17779
## 1640 -0.07854  0.48246   1.16365  -0.31685 -1.69163  0.47617 -1.42424
## 1641  1.09449  0.48246  -0.05921  -0.31685  0.04257 -0.80615 -0.01928
## 1642 -0.07854  0.48246   1.16365  -0.31685 -0.67825 -0.15487 -0.71727
## 1643  1.09449 -0.48246  -1.73790  -0.31685  0.04257  1.11406 -0.31776
## 1644  0.49788 -0.48246  -0.05921  -0.31685  0.04257 -0.94779  0.14143
## 1645  0.49788 -0.48246  -0.05921  -0.31685  0.82562 -0.80615 -0.58331
## 1646 -0.07854  0.48246   1.16365  -0.31685 -0.67825  0.47617 -0.17779
```

```
## 1647 -0.07854  0.48246   0.45468  -0.31685 -0.14882 -0.30033 -0.84732
## 1648 -0.07854  0.48246   0.45468  -0.31685  0.04257  1.58487  1.24033
## 1649  1.82213 -0.48246  -0.61113  -0.31685 -1.69163 -1.23177 -0.84732
## 1650 -0.95197 -0.48246   0.45468  -0.31685  0.22393 -1.23177  0.29338
## 1651 -0.07854  0.48246   1.98437  -0.31685 -0.79151  0.96248 -0.31776
## 1652  1.82213 -0.48246  -1.73790  -0.31685  0.31287 -0.30033 -0.71727
## 1653  0.49788  0.48246   0.45468  -0.31685 -0.79151  1.11406 -1.82919
## 1654 -0.95197  0.48246   0.45468  -0.31685  1.72012 -1.23177 -0.71727
## 1655 -0.07854 -0.48246  -0.61113  -0.31685 -1.69163  0.16767 -0.31776
## 1656 -0.95197 -0.48246  -0.05921  -0.31685 -0.14882  0.80523  2.44904
## 1657  1.09449  0.48246   0.45468  -0.31685 -2.21844  0.63779  0.29338
## 1658  0.49788  0.48246  -0.05921  -0.31685  1.60383  0.16767  2.15324
## 1659 -0.95197  0.48246  -2.43591  -0.31685 -0.67825 -0.15487 -0.31776
## 1660 -0.07854 -0.48246  -0.05921  -0.31685 -0.67825  1.11406 -0.01928
## 1661 -0.07854  0.48246  -0.61113  -0.31685 -1.05308  0.00332 -0.31776
## 1662 -0.07854  0.48246   1.98437  -0.31685  0.04257  0.47617  0.44585
## 1663 -0.07854  0.48246   0.45468  -0.31685 -0.58016  0.47617 -0.71727
## 1664 -0.95197 -0.48246  -0.61113  -0.31685  0.04257  0.96248  1.65653
## 1665 -0.07854  0.48246   1.98437  -0.31685  0.13606 -0.43999 -1.55521
## 1666  0.49788 -0.48246  -0.05921  -0.31685  0.62967 -1.09207 -0.84732
## 1667  0.49788  0.48246   0.45468  -0.31685 -1.19430 -0.57545 -0.71727
## 1668  1.09449 -0.48246   0.45468  -0.31685  0.62967 -0.80615 -1.82919
## 1669  1.82213 -0.48246   0.45468  -0.31685  0.62967 -0.43999  1.24033
## 1670 -0.07854  0.48246   0.45468  -0.31685 -0.58016  0.16767 -0.58331
## 1671 -0.07854 -0.48246  -0.05921  -0.31685 -1.05308  0.47617  0.88309
## 1672  1.09449 -0.48246  -0.05921  -0.31685 -0.46725  0.16767 -1.42424
## 1673  0.49788 -0.48246  -0.05921  -0.31685 -0.79151  1.11406 -2.09015
## 1674 -0.07854  0.48246   0.45468  -0.31685  2.28554 -2.11437 -0.97631
## 1675 -0.95197  0.48246  -0.61113  -0.31685  1.37297  0.00332 -0.01928
## 1676  1.09449  0.48246  -0.05921  -0.31685 -0.24649  0.80523 -1.68062
## 1677 -0.95197  0.48246   0.45468  -0.31685  0.13606  0.63779 -0.01928
## 1678 -0.95197  0.48246   0.45468  -0.31685 -0.05188  1.28610 -0.71727
## 1679  1.09449  0.48246  -0.61113  -0.31685 -0.24649  1.58487 -0.84732
## 1680  1.09449 -0.48246  -0.05921  -0.31685 -0.46725  0.47617 -1.11902
## 1681 -0.95197 -0.48246  -0.61113  -1.10702  0.13606 -1.63340 -0.01928
## 1682 -0.07854 -0.48246   0.45468  -0.31685  0.52135 -2.21069  0.44585
## 1683 -0.95197  0.48246  -0.61113  -1.10702  1.37297 -2.03972  0.88309
## 1684  0.49788  0.48246  -0.05921  -0.31685 -1.05308  0.63779 -0.45174
## 1685 -0.07854  0.48246  -0.05921  -0.31685  1.49158 -2.32338 -1.11902
## 1686 -0.07854  0.48246   1.16365  -0.31685  0.13606  0.96248  1.65653
## 1687  0.49788 -0.48246  -0.61113  -0.31685  1.02119 -1.50796 -0.84732
## 1688 -0.07854 -0.48246  -0.61113  -0.31685  1.98437 -1.76250  0.14143
## 1689 -0.07854  0.48246   1.98437  -0.31685 -1.43907  0.80523 -0.01928
## 1690 -0.07854  0.48246   0.45468  -0.31685  0.73545 -0.30033 -0.31776
## 1691 -0.07854  0.48246   0.45468  -0.31685 -0.46725  0.80523 -0.97631
## 1692  1.09449 -0.48246   1.16365  -0.31685 -0.92104 -0.30033 -0.01928
## 1693  0.49788 -0.48246  -0.05921  -0.31685 -0.46725  0.63779 -0.17779
## 1694 -0.95197 -0.48246  -0.61113  -0.31685  0.13606 -1.76250 -0.45174
## 1695  1.82213 -0.48246   1.98437  -0.31685 -1.19430  0.00332  0.72330
## 1696  1.09449  0.48246   0.45468  -0.31685  0.62967 -0.57545  0.72330
## 1697 -0.07854  0.48246   1.16365  -0.31685 -1.69163  0.80523  0.72330
## 1698 -0.95197 -0.48246  -0.61113  -0.31685  1.37297 -0.94779  2.15324
## 1699  0.49788  0.48246   0.45468  -0.31685  1.98437 -0.80615  2.15324
## 1700 -0.07854  0.48246  -0.05921  -0.31685 -0.58016  0.47617 -1.97495
```

```
## 1701 -0.95197 -0.48246  -0.61113  -0.31685 -0.34799 -0.69509 -0.58331
## 1702 -0.95197 -0.48246  -1.22751  -0.31685  0.41667  0.16767 -0.01928
## 1703  1.82213 -0.48246  -0.61113  -0.31685  0.62967 -1.76250 -1.11902
## 1704 -0.95197 -0.48246   0.45468  -0.31685 -0.92104  0.32197 -1.42424
## 1705 -0.95197  0.48246  -0.05921  -0.31685 -0.46725  0.80523 -0.58331
## 1706  0.49788  0.48246   0.45468  -0.31685 -0.46725  0.96248 -0.84732
## 1707  1.09449  0.48246   0.45468  -0.31685 -1.05308  1.28610 -0.84732
## 1708  0.49788  0.48246  -1.22751  -0.31685 -0.79151 -0.80615  0.72330
## 1709 -0.07854  0.48246   0.45468  -0.31685  0.04257  1.74091  0.58331
## 1710  0.49788  0.48246   1.16365  -0.31685 -0.79151  0.63779 -0.84732
## 1711  0.49788  0.48246   1.98437   0.11440 -2.34360  1.74091 -0.01928
## 1712  1.09449  0.48246  -1.73790  -0.31685 -0.05188 -0.30033 -1.68062
## 1713  1.09449 -0.48246  -0.05921  -0.31685  1.23461  0.47617  0.58331
## 1714  1.09449 -0.48246   1.16365  -0.31685 -0.14882  0.80523 -0.58331
## 1715  0.49788  0.48246   1.16365   0.11440  0.41667 -0.80615  1.06238
## 1716  1.09449 -0.48246  -0.05921  -0.31685 -1.19430  0.32197 -0.45174
## 1717 -0.07854  0.48246   0.45468  -0.31685  0.04257 -0.43999 -0.01928
## 1718 -0.07854  0.48246   0.45468  -0.31685  0.41667  1.11406 -1.11902
## 1719 -0.07854  0.48246  -1.22751  -0.31685 -0.46725  0.16767 -2.63199
## 1720  1.09449 -0.48246   0.45468  -0.31685 -0.05188  1.11406  0.72330
## 1721  1.82213 -0.48246  -0.05921  -0.31685 -2.05048 -0.15487 -1.42424
## 1722  1.09449  0.48246  -0.05921  -0.31685 -1.32828  0.16767 -0.58331
## 1723 -0.07854  0.48246  -1.73790  -0.31685 -1.19430 -1.23177 -2.21069
## 1724 -0.07854  0.48246   1.16365  -0.31685  0.13606  0.32197  0.58331
## 1725 -0.95197  0.48246  -1.73790  -0.31685 -1.69163  0.32197 -1.82919
## 1726  1.09449 -0.48246   1.16365  -0.31685 -0.79151 -0.94779 -0.45174
## 1727 -0.95197 -0.48246  -0.61113  -0.31685 -2.21844  0.96248 -0.01928
## 1728 -0.07854  0.48246  -0.61113  -0.31685  0.62967 -1.37639 -0.71727
## 1729  1.09449 -0.48246   1.16365  -0.31685 -0.34799 -0.30033  0.29338
## 1730 -0.07854 -0.48246  -0.05921  -0.31685  0.41667 -0.80615 -0.84732
## 1731  1.09449 -0.48246  -0.05921  -0.31685 -0.92104 -0.30033 -1.55521
## 1732  1.09449  0.48246  -0.05921  -0.31685 -1.05308  0.80523 -0.58331
## 1733 -0.07854  0.48246   1.16365  -0.31685 -2.42317  0.32197 -2.21069
## 1734  0.49788 -0.48246  -0.05921  -0.31685 -1.43907  0.96248  0.29338
## 1735  1.09449 -0.48246  -0.05921  -0.31685 -1.32828 -0.30033 -0.17779
## 1736  1.82213  0.48246  -2.43591  -0.31685 -0.14882  0.16767 -0.71727
## 1737 -0.07854  0.48246  -0.05921  -0.31685  0.22393  0.00332 -0.45174
## 1738  1.09449  0.48246   0.45468  -0.31685 -0.92104  0.32197 -0.58331
## 1739 -0.07854  0.48246   0.45468  -0.31685  1.49158  0.63779  0.88309
## 1740  0.49788 -0.48246   0.45468  -0.31685 -1.55078  0.80523  1.06238
## 1741  0.49788  0.48246   1.16365  -0.31685 -0.58016  0.47617 -0.58331
## 1742  1.82213  0.48246  -0.61113  -0.31685 -0.46725 -0.94779 -1.42424
## 1743 -0.07854  0.48246  -1.73790  -0.31685 -1.86962  0.96248 -0.97631
## 1744  0.49788  0.48246   1.16365  -1.10702 -0.24649 -0.57545 -0.58331
## 1745  1.09449  0.48246  -0.61113  -0.31685  0.13606  0.80523  0.44585
## 1746 -0.95197 -0.48246   0.45468  -0.31685  1.37297 -0.69509  2.90161
## 1747 -0.07854  0.48246  -1.43719  -0.31685  2.61139 -0.43999 -0.45174
## 1748  1.09449 -0.48246  -1.73790  -0.31685 -0.24649  0.47617 -0.84732
## 1749 -0.07854  0.48246   0.45468  -0.31685  1.98437  0.63779  1.43533
## 1750 -0.07854 -0.48246   0.45468  -0.31685 -0.67825  0.96248 -0.71727
## 1751 -0.07854  0.48246  -0.05921  -0.31685 -0.14882  1.58487 -0.01928
## 1752 -0.95197 -0.48246  -0.61113  -0.31685 -1.05308  0.16767  0.44585
## 1753 -0.95197  0.48246  -1.22751  -0.31685  1.02119  1.45421  2.44904
## 1754 -0.95197 -0.48246  -1.22751  -0.31685  0.73545  0.00332  1.43533
```

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## 1755  0.49788 -0.48246  -0.05921  -0.31685  1.02119 -0.43999 -2.39883
## 1756  1.09449 -0.48246   1.16365  -0.31685 -0.92104 -0.43999  0.14143
## 1757  0.49788 -0.48246   1.16365  -0.31685 -0.24649 -1.76250 -0.01928
## 1758  1.09449  0.48246  -0.05921  -0.31685 -0.58016  0.32197  0.14143
## 1759  0.49788  0.48246  -0.05921  -0.31685 -0.24649 -0.57545 -0.17779
## 1760 -0.95197 -0.48246  -0.61113  -0.31685  0.52135 -1.09207 -0.01928
## 1761 -0.95197  0.48246   0.45468  -0.31685 -0.79151 -1.09207  1.88511
## 1762  0.49788 -0.48246  -1.73790  -0.31685  0.91093 -0.30033  0.14143
## 1763 -0.07854  0.48246  -0.61113  -0.31685  0.52135  1.93886  1.43533
## 1764 -0.07854  0.48246   0.45468  -0.31685  0.82562 -1.23177  1.24033
## 1765 -0.95197 -0.48246  -0.61113  -0.31685  0.31287 -1.92173  0.14143
## 1766 -0.07854  0.48246  -0.61113  -0.31685  0.91093 -0.94779  1.24033
## 1767  0.49788  0.48246  -0.05921  -0.31685 -0.79151  0.47617 -1.11902
## 1768 -0.07854 -0.48246   0.45468  -0.31685 -0.46725  0.96248 -0.01928
## 1769  1.82213 -0.48246  -0.61113  -0.31685 -0.24649 -1.37639 -0.17779
## 1770 -0.95197 -0.48246  -1.22751  -0.22166 -0.34799  1.28610  1.06238
## 1771 -0.07854  0.48246   1.16365  -0.31685  0.91093  0.63779 -0.45174
## 1772 -0.95197  0.48246  -1.22751  -0.31685  0.82562 -0.43999  0.44585
## 1773 -0.95197 -0.48246  -0.61113  -0.31685 -0.92104  0.47617  0.44585
## 1774 -0.95197  0.48246   0.45468  -0.31685  0.82562 -1.09207  1.43533
## 1775  1.09449  0.48246  -1.73790  -0.31685  1.02119 -0.69509 -1.68062
## 1776 -0.95197  0.48246   0.45468  -0.31685 -0.05188  0.32197 -0.01928
## 1777  1.09449 -0.48246  -0.61113  -0.31685 -0.24649  0.00332  0.29338
## 1778 -0.95197  0.48246   0.45468  -0.31685  1.37297 -0.69509 -2.09015
## 1779 -0.95197 -0.48246  -1.22751  -0.31685 -1.43907 -0.57545 -1.55521
## 1780 -0.07854  0.48246  -1.43719  -0.31685 -0.34799  0.47617  0.72330
## 1781 -0.07854  0.48246  -0.61113  -0.22166  1.23461 -0.80615 -0.84732
## 1782 -0.95197 -0.48246  -0.61113  -1.10702  1.02119 -1.09207 -0.45174
## 1783 -0.07854  0.48246   1.16365  -0.31685 -0.14882 -0.57545 -0.45174
## 1784 -0.95197 -0.48246  -0.61113  -0.31685 -0.67825  3.27393  1.88511
## 1785 -0.95197 -0.48246   0.45468  -0.31685  0.52135 -0.94779  0.14143
## 1786  1.09449  0.48246   0.45468  -0.31685 -0.34799 -1.09207 -0.17779
## 1787 -0.95197 -0.48246  -0.61113  -0.31685  0.04257 -0.15487  2.44904
## 1788 -0.95197 -0.48246  -1.43719  -0.31685  0.13606  0.32197  0.44585
## 1789  0.49788  0.48246   1.98437  -0.31685 -0.24649 -0.15487  0.72330
## 1790 -0.95197 -0.48246   0.45468  -0.31685  0.62967 -1.50796  1.88511
## 1791 -0.95197 -0.48246  -0.61113  -0.31685 -0.46725 -0.15487  0.58331
## 1792 -0.95197  0.48246  -0.61113  -0.31685  0.82562 -1.76250  2.90161
## 1793 -0.07854 -0.48246   0.45468  -0.31685  0.04257  0.63779  1.06238
## 1794  0.49788  0.48246  -1.73790  -0.31685  0.73545 -0.57545 -2.09015
## 1795 -0.95197 -0.48246  -0.61113  -0.31685  0.31287 -0.15487  1.88511
## 1796 -0.95197 -0.48246   0.45468  -0.31685  1.49158 -1.50796 -0.01928
## 1797  1.82213 -0.48246   1.16365  -0.31685 -0.58016  1.74091 -1.97495
## 1798  1.09449 -0.48246  -0.61113  -0.31685  2.28554 -1.23177 -0.01928
## 1799 -0.07854 -0.48246   1.98437  -0.31685  0.52135  1.58487  2.90161
## 1800 -0.95197 -0.48246   1.16365   0.11440 -0.79151  0.47617  1.43533
## 1801 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  1.74091  1.06238
## 1802 -0.95197 -0.48246  -0.05921   0.11440  0.41667 -0.15487  1.43533
## 1803 -0.95197 -0.48246  -0.61113  -0.31685  0.82562 -0.57545  0.88309
## 1804  0.49788  0.48246  -0.05921  -0.31685  0.04257 -0.80615 -0.84732
## 1805  0.49788 -0.48246   0.45468   0.11440 -0.14882 -0.94779  1.24033
## 1806 -0.95197  0.48246   1.16365  -1.10702  0.41667 -0.80615 -0.58331
## 1807 -0.95197  0.48246  -1.43719  -0.31685  1.23461  1.11406  1.06238
## 1808 -0.95197 -0.48246   0.45468  -0.31685 -0.58016 -1.23177  1.06238
```

```
## 1809 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078 -0.80615  1.06238
## 1810 -0.07854  0.48246  -1.22751  -0.31685  1.37297 -0.15487  0.44585
## 1811 -0.07854 -0.48246   0.45468  -0.50212 -0.67825  0.63779  0.14143
## 1812  0.49788  0.48246   0.45468  -0.31685  0.91093 -0.69509  2.44904
## 1813 -0.95197  0.48246   1.16365  -0.31685  0.13606  0.32197 -0.97631
## 1814  1.09449 -0.48246   0.45468  -0.31685 -1.86962  0.00332  0.14143
## 1815 -0.95197  0.48246  -0.61113   0.11440 -0.05188 -1.23177  0.29338
## 1816 -0.07854  0.48246   0.45468  -0.31685  0.13606  0.63779  0.58331
## 1817 -0.95197 -0.48246   1.16365  -0.31685 -2.75696  2.57309  1.24033
## 1818 -0.95197 -0.48246  -0.61113  -0.31685  1.60383 -2.03972  1.43533
## 1819  1.09449  0.48246  -0.61113  -0.31685  1.37297 -0.15487  0.44585
## 1820 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  0.32197  1.88511
## 1821 -0.95197  0.48246  -0.61113  -0.31685  1.23461 -1.23177  1.06238
## 1822 -0.07854 -0.48246   0.45468  -0.50212 -0.46725 -1.50796 -0.58331
## 1823 -0.95197 -0.48246   0.45468  -0.31685  0.04257 -1.09207  0.14143
## 1824 -0.95197  0.48246   0.45468  -0.31685  0.22393 -0.30033  0.88309
## 1825 -0.07854  0.48246   0.45468  -0.31685 -1.05308 -1.50796  0.14143
## 1826 -0.07854  0.48246   1.16365  -0.31685 -0.34799  1.11406  0.44585
## 1827 -0.07854  0.48246   0.45468   0.11440  0.82562 -1.63340 -0.31776
## 1828 -0.07854  0.48246   0.45468  -0.31685  0.13606 -2.32338  0.29338
## 1829 -0.95197 -0.48246  -1.22751  -0.31685  0.22393  0.00332  0.44585
## 1830 -0.95197 -0.48246   0.45468   0.11440 -2.75696  1.93886  0.88309
## 1831  0.49788  0.48246   0.45468  -0.31685 -0.34799 -1.09207  0.29338
## 1832 -0.07854 -0.48246  -0.61113  -0.31685 -0.67825  0.63779 -0.45174
## 1833  1.09449 -0.48246   0.45468  -0.31685  0.62967 -0.80615 -0.01928
## 1834  0.49788  0.48246  -0.05921  -0.31685  1.98437 -1.92173  0.88309
## 1835  0.49788  0.48246  -0.61113  -0.31685  0.31287 -1.50796  0.44585
## 1836  0.49788  0.48246  -0.05921  -0.31685 -0.05188 -0.80615 -0.01928
## 1837 -0.07854  0.48246  -0.05921  -0.31685 -1.55078  0.96248  1.88511
## 1838  1.82213  0.48246   0.45468  -0.31685  0.41667  0.63779  0.44585
## 1839 -0.95197 -0.48246  -0.61113  -0.31685  0.13606 -0.43999  1.43533
## 1840 -0.07854 -0.48246   0.45468   0.11440  1.13281 -0.15487  1.24033
## 1841  1.09449 -0.48246   1.98437  -0.31685 -0.24649 -0.80615 -0.01928
## 1842 -0.95197 -0.48246  -0.61113  -0.31685 -0.58016  0.47617  2.15324
## 1843  1.09449 -0.48246   0.45468  -0.31685 -0.05188  0.63779  0.58331
## 1844 -0.95197 -0.48246  -0.61113  -0.31685 -1.32828  1.28610  0.88309
## 1845 -0.95197  0.48246   0.45468  -0.31685  1.60383 -0.94779  1.24033
## 1846 -0.95197  0.48246  -0.61113  -0.31685  0.62967 -0.94779  0.44585
## 1847  1.09449 -0.48246  -0.05921  -1.10702 -1.05308 -0.94779 -0.97631
## 1848 -0.07854  0.48246   0.45468  -0.31685  2.12700 -1.37639  1.88511
## 1849 -0.95197 -0.48246  -1.43719  -0.31685  0.31287  0.63779 -0.31776
## 1850 -0.07854 -0.48246  -0.05921   0.11440  0.41667  0.96248 -0.17779
## 1851 -0.07854  0.48246   1.16365  -0.31685 -0.14882 -0.15487 -0.45174
## 1852  0.49788 -0.48246  -1.73790  -0.31685 -0.46725 -1.23177 -0.45174
## 1853 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  1.28610 -0.31776
## 1854 -0.95197 -0.48246  -0.61113  -0.31685 -1.55078  0.16767  2.15324
## 1855 -0.95197 -0.48246  -1.43719  -0.31685 -0.14882  0.00332  0.58331
## 1856  0.49788 -0.48246  -0.05921  -0.31685 -1.19430  1.11406  0.58331
## 1857 -0.95197 -0.48246  -0.61113  -0.31685  0.31287 -0.57545 -0.31776
## 1858 -0.95197 -0.48246  -0.61113  -0.31685  1.72012  0.32197  1.65653
## 1859 -0.95197 -0.48246  -1.22751  -0.31685 -0.24649  0.32197  0.44585
## 1860  0.49788 -0.48246  -0.61113  -0.31685 -0.34799  0.00332  0.72330
## 1861  1.82213  0.48246   0.45468  -0.31685 -1.69163 -1.09207  1.06238
## 1862 -0.07854  0.48246   0.45468   0.11440 -0.34799  0.00332  1.24033
```

```
## 1863  1.09449 -0.48246  -2.43591  -0.31685  0.73545 -0.43999  0.44585
## 1864 -0.95197  0.48246  -0.61113  -0.31685  0.62967  0.63779  2.90161
## 1865 -0.07854 -0.48246  -0.61113  -0.31685 -2.05048  0.00332  2.15324
## 1866 -0.95197  0.48246  -0.05921  -0.31685  0.04257  0.00332  2.44904
## 1867 -0.95197  0.48246   0.45468  -0.31685  0.13606 -0.80615  1.43533
## 1868 -0.95197  0.48246  -0.61113  -0.31685  1.13281 -0.43999  0.29338
## 1869 -0.95197 -0.48246  -0.61113  -0.31685 -0.58016 -0.15487  0.29338
## 1870 -0.95197 -0.48246  -0.61113  -0.31685 -0.14882  1.11406  1.43533
## 1871 -0.07854  0.48246   0.45468  -0.31685 -1.05308  0.96248  1.88511
## 1872 -0.95197 -0.48246  -1.22751  -0.31685  1.02119 -0.43999  1.43533
## 1873 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  0.00332  2.44904
## 1874 -0.95197 -0.48246  -1.43719  -0.31685  0.73545 -1.23177  0.58331
## 1875  2.59171 -0.48246  -0.61113  -0.31685  2.12700 -0.15487  2.44904
## 1876 -0.95197 -0.48246  -0.61113   0.12600 -0.05188 -1.76250  0.58331
## 1877 -0.07854 -0.48246  -0.61113   0.11440 -0.14882 -0.57545  1.43533
## 1878 -0.95197 -0.48246  -1.43719  -0.31685  1.49158 -1.92173 -0.58331
## 1879 -0.95197 -0.48246   0.45468  -0.31685 -0.05188 -1.76250  0.88309
## 1880 -0.95197 -0.48246  -0.61113  -0.31685 -0.79151  0.32197  0.29338
## 1881 -0.95197  0.48246  -0.61113  -0.31685 -1.19430  1.74091  1.88511
## 1882 -0.95197 -0.48246  -0.61113  -0.31685 -0.24649  1.74091  0.58331
## 1883 -0.07854  0.48246   0.45468  -0.31685  1.13281 -1.37639 -1.27553
## 1884 -0.95197  0.48246  -0.61113  -0.31685  0.91093 -1.92173  0.29338
## 1885 -0.95197 -0.48246  -0.61113  -0.31685 -0.46725  2.12700  1.65653
##        Ascore   Cscore Impulsive Alcohol Amphet Caff Heroin
## 1    -0.91699 -0.00665  -0.21712       5      2    6      0
## 2     0.76096 -0.14277  -0.71126       5      2    6      0
## 3    -1.62090 -1.01450  -1.37983       6      0    6      0
## 4     0.59042  0.58489  -1.37983       4      0    5      0
## 5    -0.30172  1.30612  -0.21712       4      1    6      0
## 6     2.03972  1.63088  -1.37983       2      0    6      0
## 7    -0.30172  0.93949  -0.21712       6      0    6      0
## 8    -0.30172  1.63088   0.19268       5      0    6      0
## 9     0.76096  1.13407  -1.37983       4      0    6      0
## 10    0.59042  0.12331  -1.37983       6      1    6      0
## 11   -0.76096  1.81175   0.19268       5      0    6      0
## 12   -1.92595 -0.52745   0.52975       5      1    6      0
## 13   -1.62090 -0.78155   1.29221       5      1    6      0
## 14    0.94156  3.46436  -0.71126       1      0    5      0
## 15   -0.60633  1.63088   1.29221       6      0    6      0
## 16   -1.07533  1.13407  -0.71126       5      2    6      0
## 17    0.28783  0.75830  -0.21712       6      0    6      0
## 18   -0.45321 -1.38502  -1.37983       6      1    6      0
## 19   -1.92595 -1.51840  -0.71126       6      2    6      0
## 20   -1.92595  0.75830  -1.37983       4      1    6      0
## 21    1.61108 -1.13788   0.19268       6      1    6      0
## 22   -0.60633  1.81175  -0.21712       5      0    6      0
## 23    1.11406 -0.89891  -0.71126       4      0    5      0
## 24    0.28783 -1.01450  -1.37983       6      2    6      1
## 25    0.76096  1.46191  -0.21712       5      1    5      0
## 26    0.94156 -0.00665  -0.21712       5      1    6      0
## 27   -0.76096  0.58489   0.19268       6      0    6      0
## 28   -0.01729 -2.18109   1.86203       6      1    6      0
## 29    0.28783  1.30612   0.19268       6      0    4      0
## 30    0.94156  1.81175  -0.21712       0      0    6      0
```

```
## 31   -1.47955 -0.65253  -1.37983       6      1    6      1
## 32   -0.60633 -0.00665  -1.37983       3      0    3      0
## 33    0.43852 -0.00665   0.19268       6      1    6      0
## 34    1.28610 -0.14277  -0.71126       6      0    6      0
## 35   -2.90161 -0.78155   0.52975       4      2    5      1
## 36   -0.30172 -0.78155   0.52975       3      0    6      0
## 37   -0.01729 -1.51840  -0.21712       6      0    6      0
## 38    0.13136 -0.65253   0.52975       6      1    6      0
## 39   -0.01729  0.75830  -0.21712       6      1    4      0
## 40   -0.76096  0.41594  -1.37983       6      0    6      0
## 41   -2.07848  0.75830  -0.71126       5      1    6      0
## 42    1.81866 -0.40581  -0.21712       4      0    4      0
## 43   -0.01729 -0.65253  -0.21712       6      0    6      0
## 44   -0.15487 -1.01450  -0.21712       6      2    6      0
## 45    1.28610  0.93949  -0.21712       5      0    6      0
## 46    0.94156  1.63088  -1.37983       5      0    6      0
## 47    0.28783  1.46191  -0.71126       3      0    6      0
## 48    0.94156  1.13407  -2.55524       5      0    6      0
## 49   -0.15487 -0.65253   0.19268       6      1    6      0
## 50   -0.91699  0.25953   0.52975       6      0    6      0
## 51   -1.21213 -0.00665  -0.71126       6      1    6      0
## 52   -0.91699 -1.92173   1.86203       2      1    6      0
## 53    0.28783 -0.78155   0.52975       5      0    6      0
## 54    0.28783  0.25953  -0.21712       5      1    6      0
## 55   -1.07533 -1.13788   1.29221       6      0    6      0
## 56   -0.45321 -0.40581  -1.37983       3      0    6      0
## 57   -0.01729  0.25953  -1.37983       5      0    6      0
## 58    0.28783  0.75830  -0.71126       1      0    6      0
## 59   -0.45321 -0.40581   1.86203       5      1    6      1
## 60   -1.62090 -0.14277  -1.37983       5      0    6      0
## 61   -0.30172 -0.27607  -1.37983       5      0    6      0
## 62    0.13136  1.30612  -1.37983       5      1    4      0
## 63   -1.34289  0.41594  -1.37983       5      0    5      0
## 64   -0.60633 -0.00665  -1.37983       5      0    6      0
## 65   -0.45321  0.93949  -1.37983       6      1    6      0
## 66    1.11406  0.58489   0.52975       5      0    6      0
## 67    1.28610  0.41594  -0.71126       4      0    0      0
## 68   -0.91699 -0.14277   0.88113       5      1    6      0
## 69   -0.15487 -0.27607  -0.21712       5      1    5      0
## 70    0.28783 -0.00665  -1.37983       6      0    1      0
## 71   -1.92595 -0.27607   0.52975       6      2    4      0
## 72    1.11406  0.12331  -2.55524       5      0    6      0
## 73    0.43852  0.93949   0.19268       6      1    6      0
## 74    0.28783  1.13407  -0.71126       6      0    6      0
## 75   -1.47955  0.25953   0.52975       3      0    6      0
## 76   -0.76096 -0.40581   0.52975       5      0    6      0
## 77    0.43852  0.58489  -2.55524       4      0    6      0
## 78   -1.21213 -0.40581  -0.21712       3      1    6      0
## 79   -1.62090 -2.18109  -2.55524       6      0    6      0
## 80    1.11406 -0.65253  -0.21712       5      0    6      0
## 81   -0.15487  1.46191  -0.21712       6      0    6      0
## 82   -0.91699 -0.14277   0.88113       5      1    6      1
## 83    0.59042  1.46191  -0.21712       5      0    6      0
## 84    1.45039 -1.64101   0.19268       3      0    6      0
```

```
## 85   -0.30172 -0.14277  -1.37983       5      0    6      0
## 86    0.13136  0.41594   0.52975       3      0    6      0
## 87    0.13136 -0.14277  -0.21712       5      0    6      0
## 88   -0.30172  0.25953  -0.71126       5      0    5      0
## 89   -0.76096 -0.52745  -1.37983       3      0    6      0
## 90   -0.60633 -0.27607   0.52975       5      1    6      0
## 91    0.28783 -0.78155  -1.37983       6      0    6      0
## 92    0.28783  0.75830   0.88113       2      0    6      0
## 93    0.28783 -0.00665  -0.71126       4      0    6      0
## 94    0.76096  0.41594  -1.37983       3      0    6      0
## 95    0.59042 -0.14277  -1.37983       5      0    6      0
## 96   -1.62090  1.13407   0.52975       6      1    6      0
## 97   -0.15487  0.75830  -1.37983       4      1    6      0
## 98   -0.60633 -1.13788   0.19268       5      1    6      0
## 99   -0.60633  0.93949  -0.21712       4      1    6      0
## 100   0.94156  1.63088   0.52975       6      2    6      0
## 101  -1.47955 -0.40581  -0.21712       6      3    6      0
## 102  -0.15487  0.93949  -1.37983       4      0    6      0
## 103  -1.34289 -0.00665  -0.71126       6      1    6      2
## 104  -0.30172  0.12331   0.19268       4      0    6      0
## 105   1.11406  0.58489  -0.71126       5      0    6      0
## 106  -0.76096  2.04506  -1.37983       3      0    6      0
## 107   0.28783 -0.40581  -1.37983       4      0    5      0
## 108  -0.76096  0.58489   0.52975       5      3    6      0
## 109   0.13136  0.75830   1.86203       5      0    6      0
## 110  -0.91699 -0.52745  -0.71126       5      1    6      0
## 111  -0.30172 -0.14277   0.19268       5      0    6      0
## 112  -0.60633 -0.65253   0.19268       6      1    6      0
## 113  -1.21213 -0.78155  -0.21712       3      0    6      0
## 114   0.13136  0.75830   0.19268       4      0    6      0
## 115  -0.76096 -1.38502   1.86203       4      1    6      2
## 116   0.28783  1.13407  -1.37983       5      1    6      0
## 117  -1.77200 -0.40581   0.52975       4      0    4      0
## 118   0.13136 -1.13788   0.52975       5      1    6      2
## 119   1.11406  0.25953  -0.21712       5      0    6      0
## 120   0.28783  1.46191  -0.21712       5      0    4      0
## 121  -1.07533  0.75830   0.19268       6      1    6      0
## 122  -2.07848 -0.78155   0.52975       2      0    6      0
## 123  -0.30172 -0.89891  -0.21712       6      0    6      0
## 124  -0.01729  0.12331   1.29221       5      1    6      0
## 125   0.43852  0.58489  -0.21712       3      0    6      0
## 126   0.13136  1.13407   0.52975       6      0    5      0
## 127  -0.45321 -0.00665  -0.21712       5      1    5      0
## 128   0.28783  0.93949  -1.37983       5      0    0      0
## 129   0.13136  0.25953  -0.21712       0      0    1      0
## 130   0.94156  0.41594   0.19268       6      0    6      0
## 131   0.43852  2.33337  -0.71126       5      0    6      0
## 132   2.46262  0.58489  -1.37983       4      0    6      0
## 133  -0.15487  0.25953  -1.37983       4      0    6      0
## 134  -0.15487  0.12331   0.52975       5      0    6      0
## 135   0.59042 -0.65253  -1.37983       6      1    6      0
## 136   1.81866  1.63088   0.52975       1      0    6      0
## 137   1.81866  1.63088   1.29221       5      0    6      0
## 138   0.76096  0.41594  -2.55524       4      0    5      0
```

```
## 139   0.28783  0.93949 -1.37983       6      0    6      0
## 140   0.94156 -0.27607 -0.21712       6      0    6      0
## 141   0.94156 -0.27607 -0.71126       5      0    6      0
## 142   1.28610  0.58489 -1.37983       5      0    5      0
## 143   0.28783 -0.14277  0.52975       6      0    6      0
## 144   1.28610  2.04506 -0.71126       1      0    6      0
## 145  -1.21213 -0.00665 -0.21712       6      0    6      0
## 146   2.23427  0.75830  1.29221       4      0    6      0
## 147  -0.45321 -0.27607  0.19268       6      0    6      0
## 148   0.13136  0.93949 -0.21712       4      0    6      0
## 149  -0.91699  0.25953 -1.37983       4      0    6      0
## 150   2.03972  1.63088 -0.21712       4      0    3      0
## 151   0.59042  1.13407  0.19268       5      0    6      0
## 152   0.43852 -0.89891 -0.71126       5      0    6      0
## 153  -0.60633 -0.65253 -2.55524       5      0    6      0
## 154   0.76096  0.75830 -0.21712       6      0    4      0
## 155  -0.45321  0.58489 -0.21712       5      0    6      0
## 156   0.28783 -0.27607 -0.71126       5      0    6      0
## 157   1.11406  0.12331  0.19268       5      2    6      0
## 158  -0.45321  0.75830 -0.21712       6      0    6      0
## 159  -0.30172  0.41594  0.88113       3      0    6      0
## 160   0.13136  0.25953 -0.21712       4      0    6      0
## 161  -0.15487  0.25953 -0.21712       5      1    6      0
## 162   1.81866 -0.40581 -0.71126       5      0    6      0
## 163   1.61108  0.93949 -1.37983       3      0    5      0
## 164   0.94156  0.12331 -0.21712       4      0    6      0
## 165   1.45039  1.13407 -1.37983       3      1    3      0
## 166  -0.45321  1.63088 -1.37983       6      0    6      0
## 167  -2.35413 -1.92173  0.88113       5      0    5      0
## 168  -0.45321  0.93949  0.52975       2      0    5      0
## 169  -0.30172 -1.13788  0.52975       5      0    6      0
## 170   0.59042 -0.14277 -0.71126       5      0    6      0
## 171   0.13136 -0.14277  0.88113       2      1    6      0
## 172   0.76096 -0.78155  1.29221       6      0    6      0
## 173  -0.45321  0.75830  0.19268       5      0    6      0
## 174   0.13136  0.25953  0.52975       6      0    6      0
## 175   0.76096 -1.51840  0.88113       6      0    6      0
## 176   1.28610  0.12331  0.19268       5      0    6      0
## 177  -1.21213 -0.52745 -1.37983       3      0    5      0
## 178  -0.91699  1.13407 -0.71126       5      0    6      0
## 179   0.76096 -0.14277  0.19268       5      1    6      0
## 180   1.11406 -0.65253 -1.37983       5      1    6      0
## 181   0.28783  0.93949  0.19268       5      0    6      0
## 182   0.59042  0.93949 -0.71126       5      0    6      0
## 183   1.28610  0.75830 -1.37983       5      0    0      0
## 184  -0.76096  0.93949 -0.71126       6      3    6      0
## 185   0.59042  0.25953 -1.37983       6      0    6      0
## 186   0.76096 -0.14277 -0.21712       5      0    6      0
## 187   0.28783  1.81175 -1.37983       6      0    6      0
## 188   1.11406  0.58489 -1.37983       4      0    3      0
## 189   0.59042 -0.27607 -1.37983       4      0    3      0
## 190   0.13136  0.75830 -0.71126       5      0    5      0
## 191   0.59042 -0.27607 -0.71126       5      0    3      0
## 192   0.59042 -0.52745  0.52975       5      0    6      0
```

```
## 193   0.28783 -0.52745   0.88113       5      1    6      0
## 194   0.13136  0.12331  -1.37983       5      0    6      0
## 195  -0.01729  0.41594  -0.71126       3      0    4      0
## 196  -0.30172  0.93949   0.52975       5      1    6      0
## 197   1.28610 -0.89891   0.19268       4      0    5      0
## 198  -0.91699 -0.52745  -0.71126       5      0    5      0
## 199   0.76096 -0.00665   1.86203       6      5    5      2
## 200   1.81866  1.30612   0.52975       4      4    6      0
## 201   1.11406  1.46191   0.52975       6      0    5      0
## 202  -1.34289  1.30612  -0.71126       5      3    6      0
## 203   0.94156  1.13407   0.19268       6      0    6      0
## 204  -0.91699 -0.65253  -1.37983       5      0    6      0
## 205  -0.01729  0.25953  -0.21712       5      2    6      0
## 206  -0.91699 -1.01450   1.86203       5      0    6      0
## 207   0.13136  0.41594   0.88113       5      0    6      0
## 208   0.59042 -0.14277  -0.21712       5      1    6      0
## 209  -0.30172 -0.00665   0.52975       4      1    6      0
## 210  -0.45321  1.13407  -1.37983       0      0    6      0
## 211  -0.01729 -1.25773   1.86203       3      0    6      0
## 212   1.11406  0.93949  -1.37983       5      0    6      0
## 213   1.81866  0.58489  -0.21712       6      1    6      0
## 214   0.94156  0.12331  -1.37983       5      0    6      0
## 215   1.28610  1.30612   0.19268       5      0    5      0
## 216   1.11406 -0.40581   0.19268       5      2    6      0
## 217   1.45039 -0.00665   0.88113       5      1    6      0
## 218   1.45039 -1.64101   1.86203       2      1    6      1
## 219  -1.07533  0.75830  -0.21712       4      0    6      0
## 220   1.11406  0.25953  -1.37983       6      1    4      0
## 221  -0.01729  0.12331   0.19268       5      0    6      0
## 222  -0.76096  0.93949   0.52975       3      0    6      0
## 223   1.11406  0.25953   1.29221       6      2    5      0
## 224   1.11406  0.93949  -0.21712       1      0    1      0
## 225   0.43852  0.75830  -0.21712       5      0    0      0
## 226  -0.45321  0.25953  -1.37983       6      1    6      0
## 227   1.45039  1.46191  -0.21712       5      0    6      0
## 228  -0.60633  0.58489   1.29221       5      0    5      0
## 229  -0.76096 -0.14277   0.19268       6      1    6      0
## 230   0.94156  1.63088  -1.37983       6      0    6      0
## 231   0.59042  0.41594  -1.37983       5      0    5      0
## 232  -0.45321  0.25953  -0.21712       6      0    6      0
## 233   0.13136  0.75830   0.52975       5      1    6      0
## 234   0.94156  0.25953   0.52975       6      0    6      0
## 235  -0.91699  1.63088   0.19268       4      0    6      0
## 236   2.23427  2.04506  -1.37983       5      0    6      0
## 237   0.43852  0.41594   0.19268       6      0    6      0
## 238   0.28783  1.30612  -1.37983       5      1    6      0
## 239  -0.60633  0.25953  -0.21712       4      0    6      0
## 240   1.61108  0.25953  -1.37983       5      0    6      0
## 241   1.61108  2.63199  -1.37983       4      0    6      0
## 242   0.76096 -1.01450   0.19268       5      0    4      0
## 243   0.76096 -0.89891  -1.37983       5      0    6      0
## 244   0.94156  0.93949  -1.37983       5      3    6      0
## 245   1.11406 -2.90161  -0.71126       5      0    6      0
## 246  -1.47955 -1.38502  -2.55524       5      1    6      0
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## 247   0.43852 -0.65253  -0.21712       5      0    0      0
## 248   0.59042  1.63088  -0.21712       6      0    6      0
## 249   2.03972  1.81175  -0.71126       5      0    5      0
## 250   0.94156  1.13407  -0.71126       5      0    0      0
## 251  -0.45321  1.46191   0.19268       5      0    6      0
## 252  -0.15487  0.75830  -1.37983       4      0    5      0
## 253   2.23427  2.04506  -0.71126       5      0    6      0
## 254  -0.01729  0.93949  -1.37983       6      0    6      0
## 255  -0.91699 -0.27607  -1.37983       4      0    6      0
## 256   1.28610  0.75830   0.19268       5      1    5      0
## 257   0.76096  0.93949  -0.71126       4      2    2      0
## 258  -2.70172 -0.27607  -0.71126       4      1    6      0
## 259  -1.47955  1.81175  -0.71126       5      0    4      0
## 260   0.43852  0.75830  -0.21712       6      0    6      0
## 261  -0.91699 -0.00665   1.86203       5      0    6      0
## 262  -0.01729 -0.14277   1.86203       2      0    0      0
## 263   0.94156  0.25953  -1.37983       3      0    6      0
## 264   1.61108  1.13407  -0.71126       5      0    0      0
## 265   0.59042  0.58489  -1.37983       5      0    5      0
## 266  -0.01729 -0.00665  -0.71126       2      0    6      0
## 267   0.28783  0.75830  -0.21712       6      1    6      0
## 268  -0.45321 -0.00665  -0.21712       6      0    6      0
## 269   0.43852  2.04506  -0.21712       6      0    6      0
## 270  -0.76096  0.12331  -1.37983       4      0    2      0
## 271   0.76096  0.75830   0.88113       6      0    6      0
## 272   0.28783 -1.38502  -0.71126       6      1    6      0
## 273   0.28783 -0.00665   0.52975       6      0    6      0
## 274   0.28783  0.25953  -0.71126       6      3    6      0
## 275  -0.91699  0.58489  -0.21712       6      1    6      0
## 276   0.43852  1.63088  -1.37983       4      0    6      0
## 277  -0.30172 -0.52745  -0.21712       6      0    3      0
## 278   0.76096 -0.14277   0.52975       5      2    5      0
## 279   0.76096 -0.00665  -0.71126       5      0    6      0
## 280   0.43852  0.41594   0.19268       5      1    6      0
## 281  -0.01729 -0.89891  -0.71126       6      0    6      0
## 282  -0.15487 -0.14277  -0.71126       5      0    6      0
## 283   0.94156  0.93949   0.19268       5      0    5      0
## 284  -0.30172  0.75830   0.19268       6      0    6      0
## 285  -0.45321  0.25953   1.29221       3      2    6      0
## 286  -0.30172  0.25953  -1.37983       5      0    6      0
## 287  -1.34289 -0.14277  -1.37983       5      0    6      0
## 288   0.43852 -0.89891  -0.21712       3      0    6      0
## 289  -0.30172 -0.00665  -0.21712       6      0    6      0
## 290   1.61108  1.13407  -1.37983       4      0    6      0
## 291   1.45039  0.93949  -1.37983       0      0    5      0
## 292  -0.76096 -0.40581  -1.37983       5      1    4      0
## 293  -0.60633  0.41594  -0.71126       3      0    6      0
## 294  -0.76096 -0.40581   0.19268       3      1    3      0
## 295  -0.60633 -0.14277  -0.71126       5      0    4      0
## 296  -0.01729 -0.00665  -0.71126       5      0    5      2
## 297  -0.15487  1.13407  -0.21712       0      0    6      0
## 298   1.61108  0.41594  -0.21712       5      0    6      0
## 299   0.43852  0.58489  -0.71126       5      0    4      0
## 300   0.13136  0.58489  -1.37983       3      0    2      0
```

```
## 301   0.59042  0.93949 -0.71126       6      0    6      0
## 302  -0.76096 -0.40581 -0.21712       6      0    6      0
## 303  -0.15487  0.93949 -0.21712       6      0    6      0
## 304   1.61108  0.12331 -0.71126       4      1    6      0
## 305  -1.07533  0.75830 -1.37983       5      0    6      0
## 306   1.11406  0.75830 -0.71126       5      0    6      0
## 307  -0.01729  1.63088  0.19268       5      0    6      0
## 308   0.59042  0.41594 -1.37983       6      0    6      0
## 309   0.13136  0.58489 -1.37983       3      0    6      0
## 310  -0.30172 -0.14277  1.86203       3      0    6      0
## 311   0.28783  0.12331 -1.37983       6      0    6      0
## 312   0.59042  1.30612  0.19268       5      1    6      0
## 313   0.13136 -0.14277 -0.71126       5      0    6      0
## 314  -0.01729  0.41594 -0.71126       5      0    6      0
## 315  -0.45321 -0.78155  1.86203       5      1    6      0
## 316  -0.01729  1.13407 -0.71126       5      0    6      0
## 317   0.28783  0.93949 -1.37983       2      0    6      0
## 318  -0.15487  0.58489  0.88113       4      0    0      0
## 319  -1.07533 -0.14277 -1.37983       5      0    6      0
## 320   1.81866  1.63088 -1.37983       5      0    6      0
## 321   0.94156  0.12331 -0.21712       5      0    6      0
## 322   0.28783 -0.78155 -0.71126       6      1    6      1
## 323  -0.91699  0.93949  0.19268       5      0    6      0
## 324   0.94156  2.33337  0.19268       5      0    5      0
## 325   0.94156  0.41594  0.52975       6      3    4      0
## 326   1.61108  1.30612 -1.37983       6      0    6      0
## 327   1.11406 -0.52745 -1.37983       5      0    6      0
## 328   0.43852 -0.14277  0.52975       4      0    6      0
## 329   0.76096  0.75830 -0.21712       1      0    6      0
## 330  -0.45321  0.58489 -1.37983       6      2    6      0
## 331   0.94156  0.75830 -1.37983       0      0    5      0
## 332   0.43852 -1.78169  0.19268       6      0    6      0
## 333   0.13136  0.12331  1.29221       4      0    6      0
## 334  -1.34289 -0.00665 -0.21712       4      0    6      0
## 335   0.43852 -1.01450  1.86203       6      0    6      0
## 336  -0.01729  1.30612 -0.21712       5      0    0      0
## 337  -1.77200  0.41594  1.86203       5      1    6      0
## 338   0.76096  1.46191 -0.21712       6      0    0      0
## 339   0.94156  0.75830 -1.37983       5      0    3      0
## 340   0.28783  0.41594 -2.55524       5      0    6      0
## 341   0.94156  1.81175 -2.55524       5      0    6      0
## 342  -0.15487  0.58489  0.19268       1      0    6      0
## 343  -0.15487 -0.40581  0.88113       5      2    6      3
## 344   1.81866  1.13407 -0.71126       1      1    6      1
## 345   0.94156  0.25953  0.19268       2      2    6      0
## 346   2.46262  0.25953  1.86203       6      1    6      0
## 347  -0.01729  0.41594 -1.37983       2      2    6      2
## 348  -0.15487  0.25953 -0.21712       6      0    6      0
## 349   0.13136 -0.14277 -0.21712       5      1    6      0
## 350   1.28610 -0.65253  0.88113       4      2    6      2
## 351  -0.45321 -0.52745 -0.21712       5      2    5      2
## 352   0.76096 -1.38502  0.19268       1      1    6      1
## 353  -0.60633  0.41594  0.52975       2      2    5      0
## 354   0.28783 -0.27607 -0.71126       2      1    6      2
```

```
## 355   1.81866  0.93949   1.86203       6      1    6      2
## 356   1.45039  0.41594  -0.71126       6      0    6      0
## 357  -1.77200 -1.64101   1.86203       3      3    5      1
## 358   0.13136 -0.40581   0.52975       2      2    6      0
## 359   0.13136  0.41594   1.29221       5      2    6      2
## 360   0.13136 -0.14277  -0.21712       2      1    6      0
## 361   0.94156  1.30612   0.88113       5      5    6      2
## 362   0.59042  0.41594  -0.71126       2      1    6      2
## 363   0.76096  0.41594  -1.37983       5      0    6      0
## 364  -0.01729 -0.52745  -0.21712       5      0    5      0
## 365  -0.45321 -1.25773  -1.37983       5      0    6      0
## 366  -0.15487  0.58489  -1.37983       0      0    6      0
## 367   0.43852  0.25953   0.19268       5      0    6      0
## 368   0.13136  0.75830  -0.21712       6      1    6      0
## 369   0.76096 -0.65253   0.19268       3      2    6      2
## 370  -0.91699 -0.27607  -0.71126       5      2    6      0
## 371  -1.34289  0.41594   1.29221       5      0    6      0
## 372   0.59042  0.25953  -0.21712       5      2    4      0
## 373  -0.91699  0.12331  -0.21712       6      1    6      0
## 374   1.61108  1.13407  -0.71126       6      0    6      0
## 375  -1.34289  1.46191  -1.37983       6      0    6      0
## 376   0.13136  0.93949  -0.71126       5      0    6      0
## 377   0.43852 -0.52745  -0.71126       5      0    6      0
## 378   0.59042  0.75830   0.52975       0      0    4      0
## 379  -0.01729  0.25953  -0.21712       6      0    6      0
## 380  -0.60633  0.12331   0.19268       2      2    6      0
## 381  -0.91699 -0.78155   1.29221       4      1    6      0
## 382  -0.30172  0.75830   0.19268       5      0    6      0
## 383   1.11406  0.75830  -2.55524       5      0    6      0
## 384   0.76096  0.58489   0.19268       1      0    0      0
## 385   0.13136 -0.40581  -0.71126       5      0    6      0
## 386   1.61108  0.58489  -0.71126       4      0    6      0
## 387  -1.34289  2.04506  -0.71126       0      0    0      0
## 388  -0.15487 -0.27607  -0.21712       3      0    6      0
## 389   0.13136  0.58489  -1.37983       5      0    6      0
## 390   0.13136 -0.00665   0.19268       2      0    6      0
## 391   0.28783  0.12331  -0.71126       5      0    6      0
## 392  -0.01729  1.13407  -0.71126       5      0    6      0
## 393  -0.60633  1.46191  -1.37983       6      0    0      0
## 394  -0.76096  1.81175   0.52975       6      2    6      0
## 395  -1.47955 -0.78155   1.86203       6      1    4      0
## 396  -0.30172  0.58489  -0.21712       6      0    6      0
## 397  -1.47955  0.41594   1.29221       6      0    6      0
## 398  -1.34289  0.93949   0.88113       6      0    6      0
## 399   0.94156  0.58489  -0.71126       1      1    5      0
## 400   0.59042  0.75830  -0.71126       4      0    6      0
## 401  -1.62090 -0.65253   1.86203       5      2    6      0
## 402  -0.60633 -1.25773   0.52975       5      0    5      0
## 403  -0.76096 -0.40581  -1.37983       5      0    5      0
## 404  -0.15487  0.25953   0.88113       3      1    6      0
## 405   1.28610 -0.00665   1.29221       5      3    6      0
## 406  -0.01729 -0.40581   0.19268       3      1    6      0
## 407  -0.30172 -0.65253  -0.21712       6      1    6      0
## 408   0.13136 -0.27607   0.19268       3      1    6      0
```

```
## 409   0.28783  0.58489 -0.21712       1      1    6      0
## 410   0.94156 -1.38502  0.88113       5      2    6      1
## 411   0.13136 -1.64101 -0.21712       3      0    3      0
## 412   0.43852 -0.27607 -0.71126       6      0    3      0
## 413   0.13136 -0.40581 -0.21712       5      2    6      0
## 414  -0.15487 -0.65253  0.19268       6      0    6      0
## 415  -2.07848  2.63199 -0.21712       6      3    6      0
## 416  -2.21844 -1.25773  0.19268       5      0    6      0
## 417  -1.07533 -0.65253  1.29221       5      2    5      0
## 418  -0.45321  0.41594 -0.21712       6      0    6      0
## 419  -0.30172  0.12331  0.19268       6      0    6      0
## 420  -0.91699  1.13407  0.52975       4      3    6      0
## 421  -0.30172 -0.40581  0.52975       5      2    6      0
## 422   1.81866 -0.65253 -0.21712       4      1    6      0
## 423   1.28610  0.93949 -0.21712       6      0    6      0
## 424   0.94156 -0.00665  1.29221       3      1    6      1
## 425  -0.30172 -1.64101 -0.21712       6      2    6      0
## 426  -0.15487 -0.00665  0.52975       5      1    5      0
## 427  -1.34289 -0.14277  0.88113       6      1    6      0
## 428   0.28783  0.75830 -1.37983       5      0    6      0
## 429  -0.76096 -0.27607 -0.21712       5      1    6      0
## 430   0.94156 -1.01450  0.19268       5      2    6      0
## 431   0.28783  0.12331 -0.71126       5      0    5      0
## 432   1.28610 -0.14277  1.86203       6      1    2      0
## 433   2.23427  1.63088 -0.21712       5      0    6      0
## 434   0.59042  1.81175 -0.71126       4      0    4      0
## 435   1.81866  0.75830 -1.37983       1      0    2      0
## 436  -0.91699  0.41594  0.52975       6      2    6      2
## 437  -1.77200 -2.04506  0.88113       5      2    6      2
## 438  -0.15487 -1.78169  0.19268       4      0    5      0
## 439   0.76096  1.81175 -0.21712       6      0    6      0
## 440  -0.01729  0.58489  0.52975       3      0    5      0
## 441  -0.15487 -0.00665  0.19268       5      2    6      0
## 442  -0.76096 -0.27607 -0.21712       5      0    6      0
## 443   0.13136  0.75830 -2.55524       5      0    6      0
## 444  -0.91699  0.41594 -0.21712       5      0    6      0
## 445   2.75696 -0.65253 -0.71126       6      2    5      0
## 446  -0.76096 -1.13788  1.29221       6      2    6      0
## 447  -1.77200 -0.89891  1.29221       5      0    6      0
## 448  -0.30172  0.75830 -0.21712       5      3    3      0
## 449   0.59042 -1.01450  0.52975       5      2    6      0
## 450  -0.15487  0.75830  0.19268       5      0    4      0
## 451   0.13136  0.93949 -1.37983       5      0    3      0
## 452   0.13136  0.41594 -1.37983       5      2    4      0
## 453  -0.76096 -0.27607  1.86203       6      6    6      5
## 454  -0.76096 -2.57309  0.88113       6      3    6      0
## 455  -2.21844 -0.65253  0.88113       6      3    6      3
## 456   0.59042  0.75830 -1.37983       5      0    6      0
## 457   0.59042  0.12331 -0.21712       6      4    6      0
## 458  -2.53830 -0.40581  0.52975       4      3    6      0
## 459  -1.77200  0.25953  0.88113       6      3    6      3
## 460   1.81866 -1.25773  0.52975       5      0    6      0
## 461   0.13136 -2.30408  1.29221       3      2    6      0
## 462   1.45039 -1.25773 -0.21712       6      1    6      0
```

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## 463   0.76096  0.93949   0.19268       5      2    5      0
## 464  -0.45321 -0.40581   1.29221       5      0    6      0
## 465   1.11406 -0.27607  -0.71126       0      2    6      0
## 466  -0.01729  1.46191  -0.21712       6      1    2      0
## 467  -0.30172  0.12331  -1.37983       6      0    6      0
## 468   0.76096 -0.00665   0.88113       5      3    6      0
## 469   1.61108 -2.04506  -0.21712       3      1    6      2
## 470  -0.15487  0.75830  -0.71126       4      0    6      0
## 471   1.11406  2.33337  -0.21712       5      2    6      0
## 472   1.28610 -0.00665   0.19268       5      2    6      2
## 473  -0.76096 -0.52745   0.88113       2      0    6      0
## 474  -0.15487  0.41594  -1.37983       6      0    6      0
## 475   0.76096  0.93949  -0.71126       3      1    6      0
## 476  -1.77200 -0.40581   0.19268       6      0    6      0
## 477  -1.21213 -1.25773   1.29221       6      0    6      0
## 478   0.94156  0.58489  -0.21712       6      0    6      0
## 479   1.45039  0.25953   0.19268       6      0    6      0
## 480  -1.34289 -0.65253  -1.37983       3      3    6      3
## 481  -0.15487  0.58489   0.19268       6      2    6      1
## 482   0.13136  1.63088  -0.71126       0      1    6      1
## 483   0.28783  0.93949   0.19268       2      0    5      0
## 484   0.76096 -0.27607  -1.37983       4      1    6      0
## 485   1.11406 -0.78155  -1.37983       6      0    6      0
## 486  -0.76096 -1.38502  -0.71126       5      5    6      0
## 487  -1.07533  0.25953   0.19268       4      0    6      1
## 488   0.76096 -0.40581  -0.21712       6      3    6      0
## 489  -1.92595 -1.64101  -0.21712       3      0    0      0
## 490  -1.34289 -1.38502  -0.71126       5      0    6      0
## 491  -0.30172 -0.78155   1.29221       5      1    6      1
## 492   0.59042 -0.00665   0.19268       6      2    5      0
## 493  -0.01729  0.25953   0.88113       5      0    6      0
## 494  -1.21213 -1.64101  -1.37983       6      0    6      0
## 495   0.59042  0.12331  -1.37983       4      0    6      0
## 496   0.59042  0.93949  -1.37983       3      1    6      0
## 497  -0.60633 -0.00665  -0.71126       6      2    6      0
## 498   0.43852 -0.78155  -0.21712       4      1    6      0
## 499  -0.15487 -1.92173   0.88113       5      1    6      1
## 500  -0.76096  1.13407   0.52975       3      0    6      0
## 501  -0.01729 -0.40581   0.88113       3      1    6      0
## 502  -0.60633 -0.27607   0.52975       5      0    6      0
## 503  -0.76096  0.58489   1.29221       1      0    5      0
## 504  -0.01729  0.41594  -1.37983       1      0    6      0
## 505  -1.07533 -1.13788   0.88113       3      1    6      0
## 506  -0.76096  0.58489   0.19268       4      2    6      0
## 507  -1.34289 -0.00665   0.19268       3      2    5      0
## 508  -1.77200 -0.78155  -0.71126       5      2    5      0
## 509   0.28783  0.12331  -1.37983       5      0    5      0
## 510  -0.30172 -0.40581   0.52975       5      2    6      0
## 511  -0.15487  0.25953  -0.21712       5      1    6      1
## 512   0.13136 -1.01450   1.86203       6      3    6      0
## 513   0.76096  0.41594  -0.21712       3      2    6      1
## 514  -0.45321 -0.27607  -0.21712       6      0    5      0
## 515   0.13136  0.25953   0.88113       5      3    6      0
## 516  -1.62090  0.25953  -0.21712       6      2    6      2
```

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## 517  -0.45321  0.93949  -0.71126       2      0    6      0
## 518  -0.15487 -0.78155   0.52975       2      3    6      3
## 519   1.11406  1.81175   0.52975       5      2    5      2
## 520  -0.76096  0.93949  -1.37983       5      0    6      0
## 521  -0.45321  0.12331  -0.71126       3      0    5      0
## 522  -1.34289 -0.14277   0.52975       5      0    6      0
## 523  -0.76096 -1.25773   0.19268       5      0    6      0
## 524   0.13136  0.41594  -1.37983       2      2    6      2
## 525   2.03972  2.63199   0.19268       5      1    0      0
## 526  -0.01729  0.41594  -0.71126       6      0    6      0
## 527  -1.92595 -1.38502   0.88113       4      0    4      0
## 528   0.59042 -1.64101   0.52975       6      0    6      0
## 529  -0.01729 -0.00665  -0.21712       5      2    6      0
## 530  -1.92595  0.58489  -0.21712       5      0    6      0
## 531   0.28783 -0.89891  -0.21712       5      2    6      1
## 532   1.61108  1.13407   0.19268       4      0    5      0
## 533  -1.62090 -0.65253   0.52975       4      0    5      0
## 534   1.45039  1.46191   0.19268       6      0    6      0
## 535  -2.07848 -0.52745   0.19268       5      4    6      3
## 536   0.94156 -0.65253   0.52975       6      0    5      0
## 537   0.76096 -0.89891  -1.37983       0      0    6      0
## 538   0.59042  0.58489   0.19268       6      0    6      0
## 539   0.59042  1.81175  -2.55524       6      0    6      0
## 540  -0.91699  0.12331  -1.37983       5      0    6      0
## 541   0.76096  0.41594   0.19268       4      0    6      0
## 542  -1.21213 -1.01450   0.19268       6      1    6      1
## 543  -0.76096  0.25953  -0.21712       6      0    5      0
## 544  -0.76096 -1.01450   1.29221       5      0    6      0
## 545   0.59042 -0.78155  -0.71126       5      0    6      0
## 546   3.15735 -0.00665  -1.37983       2      2    6      0
## 547  -0.45321  2.04506  -1.37983       5      0    6      0
## 548   0.13136 -1.78169   0.52975       4      0    6      0
## 549  -0.60633 -0.14277  -0.21712       4      0    5      0
## 550   0.76096  1.30612  -1.37983       6      0    6      0
## 551  -1.07533  1.13407  -0.21712       4      2    6      0
## 552   0.76096  0.25953  -0.21712       2      0    6      0
## 553  -0.01729  0.41594  -0.71126       6      0    6      0
## 554  -0.01729  1.30612   0.52975       4      0    6      0
## 555  -0.01729  0.93949  -0.71126       6      0    6      0
## 556  -0.15487  0.25953  -1.37983       6      2    6      0
## 557   1.45039  1.30612  -0.71126       4      0    5      0
## 558   0.94156 -0.14277   1.29221       5      2    6      0
## 559   0.28783  1.13407   0.19268       6      1    6      0
## 560   0.28783  0.41594  -0.71126       6      0    6      0
## 561  -1.07533  0.75830  -0.21712       5      1    6      0
## 562  -0.30172  1.46191  -0.21712       6      0    6      0
## 563  -1.77200 -0.27607   0.19268       5      0    6      0
## 564   0.13136 -0.40581   1.86203       2      6    6      0
## 565   0.59042 -0.78155  -0.71126       5      0    5      0
## 566   0.94156  0.58489  -1.37983       5      2    5      0
## 567  -0.91699 -0.52745  -0.21712       6      0    6      0
## 568  -0.30172 -0.00665  -0.21712       1      0    1      0
## 569  -0.91699  2.63199  -0.71126       6      0    6      0
## 570  -1.77200 -0.40581   0.52975       6      0    6      0
```

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## 571   1.11406  1.81175   0.19268       6      0    6      0
## 572  -1.07533 -0.65253   1.86203       6      1    6      0
## 573  -0.60633 -0.40581   0.52975       5      0    6      0
## 574   0.59042 -1.78169  -0.71126       6      1    5      0
## 575  -0.45321  1.13407  -0.21712       5      0    3      0
## 576   0.59042  0.93949  -0.71126       4      0    3      0
## 577   1.28610 -0.14277  -0.71126       4      0    6      0
## 578   1.11406  1.46191  -1.37983       6      1    4      0
## 579   0.13136  0.75830  -0.21712       5      0    6      0
## 580  -0.01729 -1.92173   1.86203       6      1    6      0
## 581  -0.30172 -0.65253   0.88113       6      0    6      0
## 582  -0.30172  0.93949   0.52975       6      0    6      0
## 583   0.43852 -0.40581  -0.21712       5      0    6      0
## 584  -1.21213  0.75830   1.29221       2      0    3      0
## 585  -1.07533 -0.27607   0.52975       2      0    6      0
## 586   0.76096 -1.78169   0.19268       5      5    6      0
## 587   0.94156  0.12331  -0.21712       5      3    6      0
## 588  -0.91699  0.41594   0.52975       2      1    6      0
## 589  -0.60633  0.58489  -0.21712       3      3    6      1
## 590  -1.62090  1.63088  -0.21712       6      0    6      0
## 591   0.43852  2.04506  -0.71126       5      0    6      0
## 592   0.59042  0.58489   0.19268       5      0    6      0
## 593  -1.21213 -0.65253   1.29221       5      2    6      0
## 594  -1.34289  0.41594  -0.21712       6      1    6      0
## 595   0.94156  0.93949   0.52975       5      2    5      0
## 596  -0.76096  0.58489   0.88113       1      1    6      0
## 597   0.43852  0.25953  -0.21712       5      1    6      0
## 598  -0.01729 -0.89891   0.52975       4      0    5      0
## 599   1.81866  0.12331  -0.71126       6      0    6      0
## 600   0.13136 -1.01450   1.86203       4      5    6      0
## 601  -2.07848  0.58489   0.52975       6      3    6      0
## 602  -0.60633 -1.01450   0.52975       6      3    6      0
## 603  -1.47955  0.12331  -0.71126       5      0    6      0
## 604   0.94156  0.41594  -0.71126       5      0    6      0
## 605   1.28610 -1.01450  -0.71126       5      3    6      1
## 606   1.45039 -0.78155  -0.21712       5      0    6      0
## 607   2.03972 -0.14277  -0.71126       2      1    6      1
## 608   0.13136  1.13407   0.52975       6      6    6      2
## 609   1.11406 -1.51840   1.86203       4      1    5      0
## 610   0.13136 -0.65253   0.19268       6      1    6      0
## 611   1.28610  0.58489   0.52975       5      0    6      0
## 612  -0.30172 -0.40581  -0.21712       1      1    6      0
## 613  -1.62090 -0.65253   0.19268       6      3    5      0
## 614  -0.91699  0.25953   1.29221       3      2    6      3
## 615   0.76096 -0.27607   0.88113       6      0    6      0
## 616  -0.60633 -1.01450   1.29221       2      6    6      0
## 617  -0.60633  0.75830  -0.71126       3      2    6      1
## 618   0.13136 -0.00665   0.52975       5      0    6      0
## 619  -0.91699  0.58489  -1.37983       5      0    6      0
## 620   1.45039 -1.78169   1.29221       5      0    6      0
## 621  -1.34289  0.25953   0.88113       5      0    6      0
## 622   0.28783  1.63088  -0.71126       5      0    6      0
## 623  -0.30172 -1.38502   1.86203       6      0    6      0
## 624  -0.01729  0.25953  -1.37983       6      0    6      0
```

```
## 625  -0.91699  0.25953  -0.71126       6      1    6      0
## 626  -0.45321  0.41594  -0.21712       6      1    6      0
## 627   1.81866  0.58489  -2.55524       5      1    5      0
## 628   1.61108  0.25953  -1.37983       5      0    6      0
## 629   0.28783 -0.14277  -0.21712       5      0    6      0
## 630   0.28783  1.13407  -1.37983       6      1    6      0
## 631   2.23427  1.13407  -1.37983       5      0    6      0
## 632  -0.91699  0.75830  -1.37983       5      0    4      0
## 633   0.13136  0.25953  -0.71126       5      0    6      0
## 634  -1.07533 -0.65253  -0.21712       6      3    6      1
## 635   1.11406 -0.52745  -0.71126       5      2    6      0
## 636   0.43852 -0.00665   0.19268       4      0    6      0
## 637   0.76096  0.41594  -1.37983       4      0    6      0
## 638  -0.15487  1.63088  -0.71126       5      0    6      0
## 639   1.28610  0.41594   0.52975       5      1    6      0
## 640   0.13136 -0.14277  -0.21712       5      0    6      0
## 641   2.23427  1.81175  -0.21712       5      1    4      0
## 642   1.28610  1.30612  -0.71126       5      0    4      0
## 643   0.59042 -0.65253  -0.21712       5      3    5      0
## 644  -0.76096 -0.40581   1.29221       5      0    4      0
## 645  -0.15487  0.75830  -0.21712       5      0    6      0
## 646  -1.62090  0.93949  -0.71126       6      0    6      0
## 647   2.03972 -1.01450   1.29221       6      2    4      3
## 648  -0.01729  2.04506   0.19268       5      2    2      0
## 649   1.61108  0.12331   1.29221       5      2    6      0
## 650   0.59042 -1.01450   0.19268       5      0    6      0
## 651  -0.60633 -1.01450   0.19268       5      5    6      0
## 652   0.13136 -0.00665   1.29221       6      0    4      0
## 653   0.43852  1.13407  -0.71126       5      0    6      0
## 654  -0.15487 -1.01450   0.52975       5      0    6      0
## 655  -1.21213 -1.13788   1.29221       4      0    6      0
## 656  -0.45321 -1.38502   1.86203       5      1    6      1
## 657  -0.30172 -0.52745   0.88113       5      0    6      0
## 658  -0.91699 -0.40581   1.29221       5      3    6      0
## 659   1.11406  0.12331  -1.37983       6      0    6      0
## 660  -0.15487  1.46191  -1.37983       6      0    6      0
## 661   2.03972  1.81175   0.52975       5      0    6      0
## 662  -1.34289 -1.38502  -0.21712       6      1    6      0
## 663   0.28783 -0.52745   0.52975       5      0    6      0
## 664   0.28783 -0.27607  -0.71126       6      2    5      0
## 665  -0.15487 -0.89891   0.88113       3      0    6      0
## 666  -0.30172  0.25953  -0.21712       4      2    4      5
## 667   0.28783 -0.40581   0.19268       5      0    6      0
## 668  -0.30172 -0.14277   0.19268       6      0    6      0
## 669  -0.76096 -0.40581  -2.55524       5      0    6      0
## 670  -0.60633  0.12331   0.88113       2      1    6      0
## 671   0.76096  0.93949   0.52975       2      0    6      0
## 672   0.59042  0.93949  -0.71126       5      0    6      0
## 673  -0.60633 -1.01450  -0.71126       3      0    6      0
## 674  -0.76096 -0.78155   0.19268       3      2    6      0
## 675  -0.15487  0.25953   0.88113       3      0    6      0
## 676  -0.60633 -0.65253  -0.21712       6      2    4      0
## 677  -0.01729 -2.04506  -1.37983       0      0    3      0
## 678  -1.21213  1.46191  -0.71126       5      4    6      0
```

```
## 679  -0.01729 -2.04506  -0.71126       6      6    6      3
## 680  -0.60633  0.12331   0.88113       6      0    6      0
## 681   0.28783  0.58489  -1.37983       6      0    6      0
## 682  -0.15487 -0.65253  -1.37983       3      2    3      0
## 683  -1.21213 -1.51840   1.29221       4      0    6      0
## 684  -0.45321 -0.78155   0.88113       6      5    6      0
## 685  -0.30172 -0.89891   0.88113       5      0    6      0
## 686   0.94156  0.25953  -1.37983       4      1    5      0
## 687  -1.21213  0.58489   0.88113       2      2    6      0
## 688  -0.01729 -0.14277   1.86203       6      1    6      0
## 689  -1.47955 -0.14277   0.52975       6      0    6      1
## 690   0.13136  0.41594  -0.71126       4      0    5      0
## 691  -0.30172 -0.52745  -0.71126       6      0    6      0
## 692   0.43852  0.58489  -1.37983       6      1    6      0
## 693  -0.60633 -0.27607   0.19268       5      1    6      0
## 694   1.28610  1.81175  -0.71126       6      0    5      0
## 695  -1.47955  1.46191  -0.21712       5      1    6      0
## 696   1.61108 -0.00665  -0.71126       4      0    6      0
## 697  -0.01729 -0.65253  -0.21712       6      5    6      1
## 698   0.28783 -1.01450  -0.21712       6      2    6      0
## 699  -0.91699  0.12331   1.29221       5      2    6      1
## 700   0.76096  1.13407  -0.71126       1      1    6      0
## 701  -0.30172 -0.00665   0.88113       3      1    4      0
## 702  -0.91699 -0.14277  -0.71126       6      0    6      0
## 703  -0.60633  0.25953  -0.71126       6      1    1      1
## 704   2.03972  0.12331  -0.71126       3      2    4      0
## 705  -0.45321  0.25953   0.52975       4      0    4      0
## 706  -0.15487 -0.52745   0.52975       5      2    6      0
## 707   0.76096  1.13407  -1.37983       5      0    6      0
## 708   0.59042  0.41594  -0.71126       3      0    6      0
## 709  -0.60633 -1.25773   0.19268       5      2    3      0
## 710   1.11406  0.41594  -1.37983       3      0    3      0
## 711   0.13136  1.13407  -0.21712       4      3    5      0
## 712   1.81866 -0.00665   0.88113       6      5    6      0
## 713  -1.07533 -0.27607   0.88113       5      0    6      0
## 714   1.81866  0.25953  -0.21712       5      3    6      2
## 715  -0.60633 -1.78169   1.29221       3      0    6      0
## 716   0.13136  0.25953  -0.71126       5      1    4      0
## 717  -0.60633 -0.27607   1.86203       5      2    5      0
## 718  -0.45321 -0.40581   0.52975       5      1    6      0
## 719  -0.15487  1.13407   0.88113       6      4    6      2
## 720   0.76096  0.12331  -0.71126       4      2    6      0
## 721  -0.60633 -0.40581  -1.37983       1      1    6      1
## 722   0.94156  0.58489   0.19268       5      0    5      0
## 723   0.76096 -0.40581   0.19268       4      3    6      0
## 724   1.61108  0.25953  -0.21712       5      2    6      0
## 725  -1.21213 -0.52745  -0.71126       6      0    6      0
## 726   0.13136 -0.14277   0.19268       5      0    5      0
## 727  -0.30172 -1.51840   0.19268       4      0    3      0
## 728  -0.60633  0.12331   1.29221       6      2    6      2
## 729  -0.01729 -0.00665  -0.21712       5      1    6      0
## 730  -0.15487 -0.52745   0.19268       4      4    4      0
## 731  -0.15487 -0.00665  -0.71126       6      0    6      0
## 732  -0.30172 -0.27607  -0.21712       5      2    6      0
```

```
## 733  -1.47955 -1.78169   0.88113       6      3    5      0
## 734   1.61108 -0.65253   1.29221       4      3    6      2
## 735  -1.47955 -1.13788  -1.37983       6      2    6      0
## 736   0.13136  2.33337   0.52975       5      2    6      0
## 737   1.28610  0.58489  -0.71126       4      0    6      0
## 738  -0.45321 -0.52745   0.19268       6      2    6      0
## 739   1.28610 -0.65253   0.88113       5      3    6      0
## 740   0.76096  1.63088   0.52975       6      1    6      0
## 741  -0.91699 -0.89891  -1.37983       5      0    5      0
## 742  -0.91699  0.75830   0.52975       1      0    0      0
## 743   0.59042 -1.51840   1.29221       5      0    6      0
## 744   0.43852 -0.40581  -0.71126       6      0    6      0
## 745   0.28783  0.41594  -0.71126       4      0    6      0
## 746  -0.01729 -1.78169   0.19268       2      6    6      0
## 747   1.61108  2.04506  -0.21712       5      0    6      0
## 748   1.11406 -0.14277  -0.21712       5      0    6      0
## 749   1.11406  1.30612  -0.21712       6      2    6      0
## 750   1.45039 -1.78169   1.86203       6      3    3      0
## 751   1.28610  0.41594   0.19268       5      2    6      0
## 752   1.11406 -0.52745   0.19268       4      1    6      0
## 753   0.76096  2.63199  -0.71126       5      4    6      3
## 754   0.13136  0.75830  -0.21712       5      0    5      0
## 755   0.76096 -2.18109   1.29221       6      6    5      0
## 756  -0.15487 -0.27607   0.52975       3      3    6      0
## 757   1.11406  0.25953  -0.71126       6      0    6      0
## 758  -0.45321 -0.65253   0.19268       6      2    6      3
## 759  -0.45321 -2.42317   2.90161       6      0    6      0
## 760   1.11406  0.12331  -0.21712       6      6    5      0
## 761   0.94156 -1.51840   0.88113       5      0    5      0
## 762   0.59042 -1.01450   0.52975       5      0    4      0
## 763   0.76096 -0.00665   0.19268       4      2    6      0
## 764   2.23427 -0.65253   0.52975       6      3    6      2
## 765  -0.76096 -0.27607  -0.71126       6      2    6      2
## 766  -0.30172  0.75830   1.29221       4      6    6      0
## 767   0.43852  0.75830  -1.37983       6      2    6      0
## 768  -0.01729 -0.89891   1.86203       3      3    3      0
## 769   0.94156  0.25953   0.52975       0      0    6      0
## 770  -0.60633 -1.78169   0.19268       6      5    6      1
## 771  -0.30172 -0.52745  -0.21712       1      1    4      1
## 772   0.28783 -0.00665  -0.71126       4      2    6      2
## 773  -0.30172 -1.78169   0.19268       4      0    6      0
## 774  -0.30172 -0.00665  -0.71126       3      6    6      3
## 775  -0.60633 -0.52745   0.19268       6      4    6      0
## 776  -0.45321 -0.65253   0.88113       4      6    5      0
## 777   0.59042 -0.40581   0.19268       5      3    6      1
## 778   0.43852 -0.00665  -1.37983       4      3    3      2
## 779  -1.34289 -0.78155   0.19268       6      0    6      0
## 780  -0.01729 -1.13788   1.86203       3      3    6      2
## 781   0.43852 -0.52745   0.52975       6      3    3      0
## 782  -0.01729  1.13407  -0.21712       6      5    5      0
## 783  -0.01729  0.25953  -0.21712       4      2    5      0
## 784  -0.30172 -1.64101   0.88113       3      3    4      0
## 785  -0.76096  0.12331   1.29221       6      1    6      1
## 786  -0.60633 -1.13788   1.86203       5      0    5      0
```

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## 787   0.13136  0.75830   0.19268       3      0    6      0
## 788  -0.60633 -0.78155   1.29221       5      3    6      0
## 789  -1.62090 -0.14277   1.29221       5      3    6      0
## 790  -1.07533 -1.38502  -0.71126       5      5    6      3
## 791  -0.60633 -0.00665   1.29221       5      2    6      0
## 792   1.28610 -0.52745   0.19268       6      1    6      0
## 793  -0.60633  1.13407  -0.71126       3      3    6      0
## 794   0.43852 -0.14277  -0.21712       3      6    5      5
## 795   0.59042  1.30612  -0.71126       5      3    4      0
## 796  -0.30172  0.75830  -0.21712       6      3    6      0
## 797   0.43852 -0.65253   1.86203       5      2    6      1
## 798   0.43852  2.04506  -0.21712       4      3    6      0
## 799   0.59042 -1.01450   0.52975       3      5    6      0
## 800  -0.76096 -0.65253   0.88113       5      4    6      0
## 801   0.76096 -0.27607  -1.37983       6      6    6      3
## 802   0.94156 -0.00665  -0.21712       5      2    6      0
## 803  -1.77200  0.41594   0.52975       6      4    6      6
## 804  -0.45321 -0.89891   1.29221       2      6    6      3
## 805   0.59042 -0.89891   1.86203       5      0    6      0
## 806  -1.07533 -0.52745   0.88113       6      0    6      0
## 807   0.76096 -1.51840  -1.37983       3      3    6      3
## 808   1.81866 -0.14277  -0.21712       5      0    4      0
## 809  -0.91699 -0.40581  -0.71126       3      0    3      0
## 810  -1.92595 -1.64101   0.88113       6      4    6      1
## 811  -1.34289 -0.89891   1.29221       4      0    6      3
## 812  -1.62090  0.41594  -0.21712       3      2    6      5
## 813  -0.91699  0.25953   0.52975       5      3    6      0
## 814  -0.91699 -1.01450   1.86203       5      2    5      3
## 815   0.43852  0.75830  -0.21712       3      0    1      3
## 816   2.46262  0.25953  -0.71126       4      3    4      3
## 817  -0.30172 -1.13788   0.19268       5      2    6      0
## 818   0.13136  0.41594   0.88113       3      0    6      0
## 819  -0.15487  0.12331   0.88113       5      4    6      0
## 820  -0.45321  0.41594  -0.21712       6      0    5      0
## 821   0.28783 -0.40581   0.88113       4      0    6      0
## 822  -2.07848 -2.04506   1.29221       5      0    6      0
## 823   0.94156 -1.38502  -0.71126       5      6    6      0
## 824  -1.07533  1.30612  -0.21712       6      2    6      6
## 825  -1.21213 -0.78155   0.52975       3      6    6      4
## 826  -0.76096 -0.40581   0.19268       6      2    6      0
## 827   0.59042  0.12331  -1.37983       5      3    3      0
## 828   1.28610 -0.27607  -1.37983       4      3    6      0
## 829   0.94156 -0.14277   0.19268       6      6    6      0
## 830   0.59042 -0.14277  -0.21712       4      0    6      0
## 831   0.13136  0.58489   0.52975       6      3    6      0
## 832  -0.76096 -0.78155   0.88113       6      6    4      0
## 833  -0.30172  0.58489  -0.21712       5      0    6      0
## 834  -0.15487 -0.14277  -0.21712       6      3    6      0
## 835  -0.30172 -1.51840   0.19268       4      0    6      0
## 836  -1.21213  0.25953   0.19268       3      6    6      0
## 837   0.43852  0.93949   1.29221       4      0    4      0
## 838   0.13136 -1.51840   1.29221       6      0    6      0
## 839  -2.78793 -0.00665   0.88113       5      6    6      3
## 840  -0.45321 -1.25773   1.86203       4      4    6      0
```

```
## 841   1.81866  1.30612 -0.21712       3      2    5      0
## 842  -1.07533 -0.27607 -1.37983       6      1    6      1
## 843   1.11406 -0.52745  0.19268       5      0    4      0
## 844  -0.15487  0.25953 -1.37983       6      0    6      0
## 845   1.11406 -0.65253  0.19268       2      6    5      0
## 846  -1.92595 -0.89891  0.52975       3      6    6      4
## 847  -1.07533 -0.40581  1.29221       6      6    6      0
## 848   1.28610  0.41594  0.19268       4      0    6      0
## 849  -0.30172  0.41594  0.19268       5      0    6      0
## 850   0.94156  0.12331  0.52975       0      2    6      0
## 851  -1.21213 -1.25773  0.19268       2      2    6      2
## 852   0.13136 -0.27607  0.19268       5      5    6      2
## 853  -0.15487 -1.01450  1.29221       5      0    6      0
## 854  -1.07533 -1.13788  0.52975       5      4    5      5
## 855   1.61108  0.41594 -0.21712       2      3    2      0
## 856   0.59042  2.04506  0.88113       5      5    4      3
## 857  -1.92595 -1.64101  0.19268       4      6    6      6
## 858  -0.15487  0.93949  0.88113       5      5    6      0
## 859  -1.07533 -1.25773  2.90161       3      6    4      2
## 860  -0.45321 -1.78169  1.29221       6      0    6      0
## 861  -0.60633 -0.40581  1.86203       6      2    3      0
## 862   0.76096  0.93949 -0.71126       0      0    5      0
## 863  -1.62090 -0.65253 -0.71126       6      1    6      0
## 864  -0.60633 -0.78155  0.88113       5      0    6      0
## 865   0.59042 -0.78155  0.19268       5      5    2      0
## 866   0.76096  2.04506  0.52975       6      3    6      0
## 867   0.94156  1.63088 -0.71126       5      3    5      0
## 868  -0.30172 -1.78169  1.29221       3      1    6      1
## 869  -0.45321  1.13407  0.88113       6      2    6      2
## 870  -1.62090 -1.01450  0.52975       5      4    6      0
## 871   0.59042 -0.27607 -0.71126       5      0    6      0
## 872  -0.76096 -2.42317 -0.71126       4      0    6      0
## 873   0.28783 -1.01450  0.52975       5      6    6      0
## 874  -0.01729 -0.78155  1.86203       5      6    6      0
## 875  -1.92595 -0.40581  2.90161       3      5    5      4
## 876   0.43852 -2.18109  1.86203       5      3    5      0
## 877  -0.01729  0.12331  0.88113       5      3    6      0
## 878  -0.15487 -0.14277  1.29221       6      6    6      0
## 879  -0.45321 -1.38502  0.19268       5      4    5      4
## 880  -0.60633 -0.78155  1.86203       4      6    6      3
## 881  -0.91699 -0.14277  0.52975       2      2    6      2
## 882   0.28783 -0.65253  0.19268       6      3    6      2
## 883   0.76096 -0.14277 -0.21712       5      6    6      0
## 884  -0.01729 -0.14277  0.19268       4      2    6      0
## 885  -0.30172 -0.00665  0.88113       4      0    6      0
## 886   1.45039  0.12331  0.19268       6      3    6      0
## 887   1.81866 -0.78155  0.19268       5      0    5      0
## 888   1.11406  0.58489 -0.71126       5      0    4      0
## 889   0.59042  0.58489 -0.71126       4      3    6      0
## 890  -0.01729  0.93949 -0.21712       5      6    6      3
## 891  -2.35413 -0.14277  0.52975       3      3    4      0
## 892  -3.00537 -1.51840  1.29221       4      4    6      2
## 893  -1.07533 -2.30408  0.52975       6      3    6      1
## 894  -2.35413 -0.27607  0.52975       5      3    3      0
```

```
## 895   0.13136 -0.65253  -0.71126       4      2    6      0
## 896   0.13136  0.41594  -0.21712       5      4    6      0
## 897  -0.45321 -1.01450   1.86203       6      0    6      0
## 898  -0.91699 -1.01450   2.90161       6      0    6      0
## 899  -3.46436 -0.14277   0.52975       5      6    6      4
## 900  -0.60633 -0.89891   0.52975       5      0    6      0
## 901  -0.60633 -1.13788   0.52975       6      2    5      6
## 902   0.43852 -0.65253   0.88113       4      6    6      3
## 903  -1.07533  0.41594  -1.37983       6      0    6      0
## 904  -2.35413 -1.13788   0.88113       2      3    6      6
## 905  -0.01729  2.04506  -0.71126       5      2    6      0
## 906  -1.34289  0.41594   0.52975       4      5    6      0
## 907   0.76096 -0.78155  -1.37983       5      4    6      0
## 908  -1.34289 -0.00665   0.88113       5      5    4      3
## 909  -0.91699 -1.78169   1.86203       6      0    3      0
## 910  -0.01729 -1.38502   0.52975       4      4    5      5
## 911  -1.34289 -0.78155  -0.21712       4      0    6      0
## 912  -1.62090  0.75830  -0.71126       3      0    6      0
## 913   0.94156  0.93949   0.19268       5      0    6      0
## 914  -2.21844 -3.15735   1.86203       5      4    6      0
## 915  -0.45321  0.93949  -0.71126       6      6    5      3
## 916  -0.15487 -0.52745   0.19268       4      3    3      4
## 917   1.61108  0.41594   0.52975       3      0    6      0
## 918  -0.30172 -1.01450   1.86203       6      4    6      5
## 919  -0.76096  0.12331   1.29221       5      0    6      1
## 920  -1.34289  0.41594  -0.21712       6      4    4      0
## 921   0.43852 -1.13788  -0.21712       3      4    6      0
## 922  -1.21213 -1.13788   0.19268       3      0    6      0
## 923  -1.07533 -0.78155   1.29221       3      0    6      2
## 924   0.13136 -0.89891   0.52975       3      3    6      3
## 925   1.11406 -0.65253  -0.21712       5      2    5      0
## 926  -0.76096 -0.27607  -0.21712       5      0    5      0
## 927   1.61108  0.58489   0.19268       4      1    6      0
## 928   0.28783 -0.27607   0.52975       4      5    6      0
## 929   0.13136 -0.65253  -1.37983       3      2    6      0
## 930   0.94156  0.41594   0.52975       4      2    6      1
## 931   1.11406 -0.78155  -0.21712       3      2    6      4
## 932   0.59042  2.04506  -0.71126       5      0    6      0
## 933   0.28783 -0.78155   1.86203       5      3    5      4
## 934   0.13136 -0.78155   0.52975       4      0    6      0
## 935  -0.01729 -0.40581   0.52975       3      5    5      0
## 936   0.59042 -0.89891   0.88113       6      0    5      0
## 937  -0.60633  0.75830  -0.71126       5      0    5      0
## 938  -1.47955 -0.14277  -0.21712       6      0    3      0
## 939  -0.76096  1.46191   0.19268       5      3    5      0
## 940   1.28610  1.30612  -0.21712       4      2    5      0
## 941   0.43852 -1.13788   0.88113       3      3    6      4
## 942   0.76096 -1.25773   1.29221       3      2    6      3
## 943   1.45039 -0.89891  -0.71126       4      0    6      0
## 944  -0.76096 -1.51840   0.88113       4      6    6      0
## 945  -0.30172 -1.64101   1.29221       6      2    6      0
## 946  -0.30172  0.75830  -1.37983       2      2    6      0
## 947   0.13136 -1.51840   0.88113       5      1    6      0
## 948  -0.45321 -0.65253  -0.21712       6      2    6      2
```

```
## 949   0.59042 -0.14277   2.90161       3      3    4      0
## 950  -0.30172 -0.27607   1.86203       5      5    5      0
## 951  -0.30172 -1.64101   0.52975       5      0    6      0
## 952  -0.15487 -0.78155  -0.71126       0      0    5      0
## 953  -1.47955 -2.90161   1.86203       4      5    5      4
## 954   0.13136  0.41594  -0.71126       5      6    6      1
## 955   1.28610  1.30612  -0.71126       6      0    6      0
## 956  -1.21213  2.04506  -0.21712       5      0    5      0
## 957   1.11406 -0.65253   0.52975       5      0    6      0
## 958   2.03972 -0.40581  -0.21712       5      6    6      1
## 959   0.28783 -0.27607   1.86203       5      3    5      0
## 960   0.76096 -1.13788   0.88113       5      3    6      5
## 961   0.13136 -0.00665   0.19268       5      3    6      6
## 962   0.76096  0.25953  -0.21712       5      3    6      0
## 963   0.43852 -0.27607   0.19268       5      1    6      0
## 964   0.28783  0.41594   0.19268       5      2    6      0
## 965   1.11406  0.25953  -0.71126       4      3    6      0
## 966   1.45039 -0.40581   1.29221       5      0    6      0
## 967  -1.47955  0.93949  -0.21712       6      0    3      0
## 968   1.11406  0.75830   0.52975       6      1    6      1
## 969  -0.60633 -0.52745   0.88113       5      1    4      0
## 970  -1.07533  0.93949  -0.21712       6      4    6      0
## 971   0.13136 -0.52745  -0.71126       6      0    6      0
## 972   1.45039  0.58489  -0.71126       6      2    6      0
## 973  -1.21213 -0.78155   0.52975       5      0    2      0
## 974   0.76096  0.75830   0.52975       1      0    1      0
## 975   0.59042 -0.00665  -0.21712       0      2    6      0
## 976   1.61108 -0.40581   1.29221       5      4    6      0
## 977  -0.15487  0.75830  -0.71126       6      1    6      0
## 978  -0.60633 -0.27607  -0.71126       4      1    5      0
## 979  -0.76096  0.41594  -0.21712       4      0    4      0
## 980  -0.91699 -1.01450   0.88113       6      6    6      0
## 981  -1.77200  1.13407   0.52975       5      1    6      3
## 982   0.94156 -0.14277   0.88113       6      3    6      0
## 983  -0.45321 -0.89891   0.52975       5      3    6      0
## 984  -0.45321  0.25953   0.88113       5      6    6      6
## 985  -1.34289 -2.18109   1.29221       4      0    6      0
## 986  -0.01729 -0.89891  -0.71126       4      3    5      0
## 987  -1.07533 -0.27607   1.29221       5      6    6      2
## 988   0.13136 -0.40581   0.88113       6      4    6      6
## 989  -0.76096 -1.78169   1.86203       5      4    6      0
## 990   0.13136 -0.00665  -0.21712       3      1    6      1
## 991   2.23427  1.13407  -0.21712       5      2    6      0
## 992   0.94156 -0.78155   0.52975       5      5    6      2
## 993  -0.91699 -0.14277   0.52975       5      0    4      0
## 994   0.43852  0.75830   0.88113       5      2    5      0
## 995  -0.60633  0.93949  -0.21712       6      0    6      0
## 996  -0.15487  0.93949  -0.21712       3      6    6      0
## 997   0.13136  1.46191  -0.71126       4      3    5      4
## 998  -0.15487 -0.65253   1.29221       5      0    6      0
## 999  -2.35413 -0.89891   1.29221       5      6    5      4
## 1000  0.43852  0.75830  -1.37983       4      1    6      0
## 1001 -1.47955  0.25953  -1.37983       3      0    6      0
## 1002 -0.45321 -3.46436  -0.21712       5      0    6      0
```

```
## 1003 -0.01729 -1.64101   1.29221       5      3    6      0
## 1004  0.13136 -0.89891  -0.71126       3      0    4      0
## 1005  0.94156 -0.00665   0.19268       4      0    4      0
## 1006 -0.45321 -1.13788  -0.21712       6      6    4      0
## 1007 -0.30172 -0.27607   0.52975       5      6    4      0
## 1008 -0.01729  0.41594  -2.55524       6      0    4      0
## 1009  1.28610 -0.78155   0.19268       6      0    6      0
## 1010 -0.76096 -1.38502   0.19268       6      6    5      2
## 1011  0.13136 -0.14277   0.19268       5      4    6      0
## 1012  0.43852 -0.65253   1.86203       5      3    6      2
## 1013  0.76096  1.30612  -1.37983       1      6    6      1
## 1014  0.13136  1.63088   0.19268       6      0    6      0
## 1015 -1.62090 -2.57309   0.88113       6      4    6      2
## 1016  0.43852  1.13407  -0.71126       5      0    6      0
## 1017 -1.47955 -0.00665  -0.21712       0      4    6      0
## 1018 -0.45321 -0.78155   0.19268       3      6    6      5
## 1019 -1.92595  0.75830  -0.21712       6      3    5      0
## 1020 -0.45321 -2.42317  -0.71126       5      0    2      0
## 1021 -0.91699 -0.40581  -0.21712       5      0    4      0
## 1022 -1.07533 -2.42317   1.29221       6      4    6      0
## 1023  0.59042 -0.65253   0.88113       4      6    6      0
## 1024 -0.30172 -0.40581  -0.21712       5      0    2      0
## 1025 -0.91699 -0.00665   0.19268       2      0    6      2
## 1026 -0.01729  0.58489   1.29221       5      2    6      1
## 1027  0.59042  1.30612  -0.21712       5      3    5      0
## 1028 -1.07533 -0.40581  -0.21712       5      2    6      0
## 1029  1.11406 -0.00665   0.19268       3      4    6      0
## 1030 -1.07533 -1.38502   1.29221       3      2    3      2
## 1031 -0.60633 -0.27607   0.19268       6      3    6      0
## 1032 -0.60633 -1.01450   0.52975       6      3    6      0
## 1033 -0.01729 -0.52745   0.52975       6      3    6      0
## 1034 -0.15487 -0.27607   1.29221       6      0    6      3
## 1035  0.59042  0.75830  -1.37983       4      4    6      0
## 1036  2.75696 -0.78155  -0.21712       6      0    6      0
## 1037  2.23427  1.13407   0.52975       5      0    6      0
## 1038 -0.76096  0.41594  -0.71126       6      3    6      0
## 1039 -0.15487 -1.01450   0.88113       6      1    6      0
## 1040 -1.34289 -1.38502   1.86203       6      0    6      0
## 1041  0.94156 -0.52745   0.88113       5      3    6      0
## 1042  0.76096 -0.65253  -1.37983       6      0    6      0
## 1043  0.94156 -0.89891   1.29221       6      3    6      0
## 1044 -2.53830 -1.25773   1.29221       5      0    6      3
## 1045 -0.01729  0.25953  -1.37983       5      3    5      0
## 1046 -0.76096  0.58489   0.88113       6      0    6      0
## 1047  0.28783 -0.52745  -0.21712       5      0    6      0
## 1048  1.61108 -0.65253   0.88113       5      3    6      0
## 1049 -1.92595  0.25953   0.19268       5      2    6      0
## 1050 -0.30172 -0.27607  -0.21712       5      0    6      0
## 1051 -1.92595 -2.04506   1.29221       6      5    5      5
## 1052 -0.30172 -0.40581  -0.21712       5      0    4      0
## 1053 -0.60633  0.58489   0.19268       6      2    5      0
## 1054  0.59042  1.46191  -1.37983       4      2    5      0
## 1055 -1.77200 -1.38502   0.19268       4      5    5      0
## 1056 -0.45321 -0.40581   0.52975       5      4    6      0
```

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## 1057  0.94156 -0.27607  -0.71126       5      0    6      0
## 1058  0.59042  0.93949  -1.37983       5      1    2      1
## 1059  0.13136  0.75830   1.29221       2      0    4      0
## 1060 -0.15487 -0.52745   1.29221       5      0    5      0
## 1061 -1.47955  0.41594  -0.21712       5      2    4      0
## 1062  0.59042  0.58489  -0.21712       5      4    6      0
## 1063  1.11406 -1.13788   0.88113       4      0    4      0
## 1064  0.28783  1.63088  -1.37983       5      0    6      0
## 1065 -0.30172 -0.27607  -2.55524       3      0    6      0
## 1066 -0.01729 -0.89891   0.88113       6      0    5      0
## 1067  2.03972  2.04506  -1.37983       6      0    5      0
## 1068 -0.15487  1.30612  -0.21712       6      0    6      0
## 1069 -0.60633  0.12331   0.88113       5      0    6      0
## 1070  0.13136 -1.38502  -0.21712       5      0    6      0
## 1071  0.28783 -0.40581  -0.71126       2      0    6      0
## 1072 -0.30172  1.46191  -1.37983       5      0    3      0
## 1073 -0.45321 -0.14277   0.19268       6      0    5      0
## 1074  1.28610 -0.27607  -0.71126       3      0    5      0
## 1075  0.13136 -0.14277  -1.37983       4      0    6      0
## 1076 -0.91699  0.25953   0.19268       3      1    6      0
## 1077 -0.45321  0.25953  -0.21712       4      0    6      0
## 1078  0.13136 -1.13788  -1.37983       4      0    5      0
## 1079  0.28783  0.58489   0.52975       6      0    6      0
## 1080  1.11406  1.30612  -0.21712       5      0    6      0
## 1081  0.28783 -0.52745  -0.21712       5      0    6      0
## 1082 -0.45321 -1.25773  -0.71126       6      0    6      0
## 1083  0.28783  0.41594  -1.37983       5      2    6      0
## 1084 -0.15487  1.81175   0.52975       6      0    5      0
## 1085  0.43852  0.58489  -0.71126       6      2    6      0
## 1086 -0.30172  0.25953  -1.37983       3      0    6      0
## 1087 -0.30172  0.25953   0.19268       6      0    6      0
## 1088  0.59042  0.93949   0.19268       6      6    6      0
## 1089  1.11406 -0.27607  -1.37983       6      2    6      0
## 1090  2.46262 -0.52745   1.29221       5      0    6      0
## 1091  1.11406  0.12331   0.19268       4      3    6      0
## 1092 -1.21213 -1.25773   0.19268       3      4    6      0
## 1093 -0.60633  0.58489   0.88113       6      2    6      0
## 1094 -0.01729  0.93949   0.88113       5      0    4      0
## 1095 -0.01729  0.12331  -0.21712       5      0    6      0
## 1096  1.81866 -1.13788  -0.21712       5      2    5      0
## 1097  0.13136 -0.65253   0.88113       3      2    6      2
## 1098 -0.91699 -0.65253  -1.37983       4      0    6      0
## 1099  0.43852  0.58489  -0.21712       5      2    5      0
## 1100  0.28783 -1.78169   0.19268       6      4    6      0
## 1101 -0.30172  1.30612  -0.71126       5      0    6      0
## 1102 -0.45321 -0.40581  -0.21712       6      0    5      0
## 1103 -0.91699 -1.78169   0.19268       5      0    5      0
## 1104 -1.21213 -2.04506  -1.37983       6      3    6      0
## 1105  2.23427  1.63088  -1.37983       4      0    6      0
## 1106 -1.21213 -1.01450   0.19268       5      3    3      2
## 1107 -0.15487 -0.52745   1.86203       5      4    5      0
## 1108  1.28610 -0.27607   0.19268       6      5    6      0
## 1109  0.13136 -1.64101   0.88113       5      3    6      1
## 1110  2.23427  1.46191  -1.37983       5      0    6      0
```

```
## 1111  0.28783 -1.25773   1.29221       6      6    6      0
## 1112 -1.07533  0.58489  -0.71126       5      0    6      0
## 1113  1.28610  2.04506  -0.21712       5      0    6      0
## 1114 -2.53830 -0.27607   0.88113       3      1    6      3
## 1115 -0.15487 -1.38502   1.29221       5      0    6      0
## 1116 -0.91699 -0.65253  -0.71126       6      4    6      0
## 1117  1.11406 -0.27607   0.52975       6      6    6      0
## 1118 -1.77200 -1.01450   0.88113       4      5    4      0
## 1119  0.43852  0.75830   0.19268       5      2    6      0
## 1120 -0.76096 -0.27607   0.19268       2      5    6      3
## 1121 -0.01729 -0.40581  -0.71126       3      2    6      0
## 1122 -0.01729 -1.25773   0.52975       6      6    6      0
## 1123  0.43852 -0.00665   1.29221       6      2    4      0
## 1124 -0.15487 -2.30408  -0.21712       4      4    6      3
## 1125 -1.62090  0.58489  -0.21712       3      1    6      0
## 1126  0.28783 -0.78155   0.52975       4      3    6      2
## 1127  1.11406 -1.25773   0.88113       5      5    6      0
## 1128  1.61108 -1.78169  -0.21712       5      0    3      0
## 1129 -0.01729 -1.92173   1.29221       6      3    4      5
## 1130 -2.07848 -1.78169   1.86203       4      0    6      5
## 1131 -1.21213 -0.27607  -0.21712       6      2    6      2
## 1132  1.11406  0.25953   1.29221       3      3    3      0
## 1133 -0.91699 -0.52745   1.86203       5      5    6      0
## 1134 -1.34289 -1.64101   1.29221       3      3    6      3
## 1135 -0.01729  0.41594  -1.37983       5      0    6      0
## 1136  0.59042 -1.25773  -0.21712       5      0    6      0
## 1137 -3.15735 -0.52745   1.86203       6      3    6      2
## 1138  1.45039 -0.27607  -0.21712       6      2    5      3
## 1139 -1.07533 -1.51840   0.52975       4      2    6      0
## 1140 -0.15487  0.58489   0.52975       4      1    6      2
## 1141  1.45039 -1.13788  -0.21712       6      3    6      0
## 1142 -0.30172 -0.65253   0.19268       1      1    6      0
## 1143 -1.21213 -2.18109  -0.21712       5      4    6      0
## 1144 -0.01729 -1.01450  -0.71126       5      6    6      0
## 1145 -1.47955  0.93949  -0.21712       5      6    6      0
## 1146 -1.47955 -1.25773   0.88113       3      3    6      0
## 1147 -0.60633 -0.65253   0.52975       5      4    6      2
## 1148  0.43852  0.93949  -0.71126       1      6    5      2
## 1149  1.11406  0.41594   0.19268       4      6    6      2
## 1150 -0.30172 -1.25773   0.88113       1      3    6      1
## 1151 -1.21213 -0.27607   0.52975       3      0    6      0
## 1152 -0.15487 -1.92173   0.52975       4      3    4      0
## 1153  0.76096 -0.52745   0.19268       6      2    6      0
## 1154  1.61108 -0.52745  -0.21712       6      2    6      0
## 1155 -0.60633  0.41594  -0.21712       3      2    3      0
## 1156  0.43852 -0.40581   1.29221       4      5    5      0
## 1157 -1.21213  0.93949  -0.71126       3      2    6      0
## 1158 -0.01729 -1.13788   0.19268       6      2    4      0
## 1159 -0.91699  0.12331   0.52975       5      6    6      0
## 1160  0.13136  0.25953   0.52975       5      3    4      3
## 1161  0.94156  2.04506  -0.71126       5      0    6      0
## 1162  0.13136  0.41594   0.19268       4      5    6      0
## 1163 -0.60633  1.13407   0.88113       5      0    4      0
## 1164  0.76096 -1.78169   1.86203       6      0    6      0
```

```
## 1165 -0.30172  0.58489  -0.21712       5      1    6      0
## 1166 -0.76096 -1.01450   0.88113       6      2    6      0
## 1167 -1.92595 -1.01450   0.52975       5      6    6      0
## 1168  1.28610  0.25953  -0.71126       6      0    6      1
## 1169 -0.76096  0.12331  -0.71126       3      0    6      0
## 1170  0.59042  0.93949   0.88113       5      3    6      4
## 1171  0.59042  0.58489  -1.37983       4      0    6      0
## 1172 -0.30172  1.13407  -0.21712       4      5    6      3
## 1173 -0.91699  1.13407   1.86203       6      6    6      0
## 1174  0.76096 -0.27607  -0.21712       3      3    6      0
## 1175 -1.34289 -0.89891  -1.37983       5      2    2      0
## 1176  1.61108  0.12331   1.29221       5      0    6      0
## 1177 -2.78793 -1.25773   1.86203       4      6    6      3
## 1178  0.76096 -0.27607  -0.21712       0      3    6      0
## 1179 -0.60633 -0.27607  -0.71126       2      0    3      0
## 1180 -0.45321 -1.01450   0.19268       5      3    6      0
## 1181  2.23427 -0.78155   0.52975       6      3    6      0
## 1182 -0.30172  1.81175  -0.71126       5      3    6      0
## 1183  0.94156  0.25953  -0.21712       4      1    6      0
## 1184 -0.91699 -0.89891   0.88113       5      5    6      3
## 1185  0.59042 -0.78155   1.86203       6      0    5      0
## 1186  0.43852 -0.00665   0.19268       5      0    6      0
## 1187 -0.45321 -0.00665  -0.21712       6      1    6      1
## 1188 -0.60633 -0.00665   1.29221       4      4    6      0
## 1189  1.81866  0.93949  -0.71126       5      0    6      0
## 1190  0.13136 -2.57309   1.86203       3      6    6      0
## 1191  0.43852 -1.13788   1.86203       6      6    4      0
## 1192  1.61108 -0.52745   0.19268       5      3    4      0
## 1193 -1.07533  0.41594   0.52975       5      2    6      0
## 1194 -0.45321 -1.64101   0.88113       5      3    6      0
## 1195 -0.76096 -0.52745  -0.21712       4      3    6      0
## 1196 -1.92595 -0.27607   0.52975       0      6    3      0
## 1197 -0.01729  0.25953  -1.37983       5      0    6      0
## 1198  0.28783 -1.92173   0.52975       3      0    6      0
## 1199  0.94156 -1.64101  -0.21712       6      0    6      0
## 1200 -0.76096 -0.65253   1.29221       5      4    5      6
## 1201 -1.07533 -0.78155  -0.21712       6      0    6      0
## 1202 -1.34289 -0.27607   0.52975       5      3    6      5
## 1203 -1.07533 -1.13788   0.19268       3      2    6      0
## 1204 -2.07848 -1.38502   1.29221       5      0    5      0
## 1205  1.45039  1.30612  -0.21712       4      0    6      0
## 1206 -2.21844  1.46191   0.88113       6      0    6      4
## 1207 -1.07533 -0.40581   0.52975       3      3    3      0
## 1208 -1.07533  0.75830   0.88113       5      4    6      0
## 1209 -0.60633 -0.78155   0.88113       5      0    6      0
## 1210 -0.45321 -1.01450  -1.37983       5      0    3      0
## 1211 -0.15487 -2.04506  -1.37983       4      6    5      0
## 1212 -0.45321 -0.00665   0.19268       5      4    6      0
## 1213 -0.91699  0.12331   1.29221       6      0    6      0
## 1214 -0.01729 -0.89891   0.88113       6      6    6      2
## 1215  0.13136 -1.38502   0.52975       5      4    6      0
## 1216 -0.91699 -0.00665   0.19268       5      4    5      0
## 1217 -0.76096 -1.01450   0.19268       5      5    5      0
## 1218 -1.21213 -1.51840  -0.71126       4      0    6      0
```

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## 1219 -1.62090 -0.89891   0.88113       4      3    4      2
## 1220 -1.47955 -0.65253   0.88113       6      3    5      0
## 1221 -0.45321 -0.00665   1.29221       5      3    6      0
## 1222 -0.15487 -0.14277  -0.21712       5      0    5      0
## 1223 -0.01729 -0.40581  -0.21712       5      2    5      0
## 1224  0.13136  0.93949   0.19268       6      5    6      0
## 1225 -0.15487 -1.38502   0.52975       5      3    6      0
## 1226  0.59042 -1.51840  -1.37983       2      2    3      1
## 1227  0.13136  0.58489   0.52975       3      0    3      0
## 1228 -0.45321 -0.14277   0.19268       6      3    4      0
## 1229 -2.07848 -0.52745   1.29221       6      2    5      0
## 1230  0.59042  0.41594   0.19268       5      0    6      0
## 1231  0.59042 -0.14277   0.19268       5      4    6      0
## 1232  0.28783  0.58489  -1.37983       4      2    2      0
## 1233 -0.30172  0.58489  -0.21712       5      1    6      0
## 1234  0.59042 -0.00665  -0.21712       5      0    6      0
## 1235 -0.45321  1.30612   0.19268       4      0    6      0
## 1236  1.11406 -0.78155   0.52975       5      2    6      0
## 1237 -1.34289  0.41594   0.52975       6      0    5      0
## 1238  0.59042 -0.00665   0.52975       2      1    6      0
## 1239 -0.15487 -0.89891  -0.21712       6      0    5      0
## 1240 -1.07533 -0.14277  -0.21712       3      2    6      0
## 1241  1.45039  0.93949  -1.37983       4      0    6      0
## 1242  0.13136 -1.38502  -0.71126       6      3    6      0
## 1243  0.13136  2.04506  -1.37983       4      0    5      0
## 1244  1.61108 -1.25773  -1.37983       3      0    6      0
## 1245 -0.45321 -1.25773   0.52975       6      0    6      0
## 1246  1.28610  0.58489  -1.37983       5      0    6      0
## 1247 -0.01729  0.93949   1.86203       5      0    6      0
## 1248 -0.45321  1.13407  -0.71126       6      0    6      0
## 1249 -0.45321  0.75830   0.52975       6      1    6      0
## 1250 -1.07533 -1.38502  -1.37983       5      0    6      0
## 1251  0.28783 -0.27607  -1.37983       6      0    6      0
## 1252 -0.45321 -0.65253  -0.21712       3      0    3      0
## 1253  1.45039  0.12331  -1.37983       6      0    6      0
## 1254 -1.34289  0.58489   0.88113       5      0    6      0
## 1255 -0.91699 -0.00665  -0.71126       6      0    6      0
## 1256 -0.60633 -0.00665  -1.37983       3      0    6      0
## 1257 -1.21213 -0.14277   1.86203       3      0    6      0
## 1258  0.28783 -0.78155   0.19268       5      1    6      0
## 1259  1.11406 -0.78155   1.86203       4      0    6      0
## 1260  0.13136  0.58489   0.52975       6      1    6      0
## 1261  0.28783  0.58489  -0.71126       6      0    6      0
## 1262  0.59042 -0.00665   0.52975       6      0    6      0
## 1263 -0.30172  0.25953   0.19268       5      0    6      0
## 1264 -1.77200 -2.04506   1.29221       5      2    6      0
## 1265  0.59042  0.25953  -1.37983       6      0    6      0
## 1266 -1.62090 -0.00665   0.19268       5      2    5      0
## 1267  1.81866  0.25953  -1.37983       5      0    6      0
## 1268  0.94156  0.12331  -0.71126       3      2    3      0
## 1269  0.76096 -0.52745   0.88113       6      0    6      0
## 1270  0.76096 -1.01450   0.19268       4      0    6      0
## 1271 -1.07533 -0.40581  -0.21712       4      0    5      0
## 1272 -0.30172  0.58489  -0.21712       5      1    6      0
```

```
## 1273  0.13136  1.81175 -0.71126       3      6    5      0
## 1274 -0.60633 -1.13788  0.52975       5      3    5      0
## 1275 -0.91699 -0.52745  1.29221       5      2    6      2
## 1276  0.94156  1.13407 -1.37983       4      1    4      1
## 1277  0.28783 -0.52745  0.52975       5      0    5      0
## 1278 -2.21844  0.93949  1.86203       0      0    0      0
## 1279  1.11406  0.41594 -0.21712       4      0    6      0
## 1280  0.13136 -0.27607 -0.71126       4      5    6      0
## 1281 -1.21213 -1.92173  1.86203       4      5    6      0
## 1282 -1.21213 -1.25773 -0.71126       6      0    6      0
## 1283  0.76096  0.25953  1.29221       5      6    4      4
## 1284 -1.47955 -0.52745  1.86203       3      0    5      2
## 1285 -0.45321 -0.14277  0.88113       6      1    6      1
## 1286 -1.07533 -0.40581 -0.21712       4      0    2      0
## 1287 -0.15487  0.75830 -0.21712       5      2    6      0
## 1288 -1.07533 -1.01450  0.19268       5      0    5      0
## 1289 -0.30172  0.12331  1.86203       5      3    6      0
## 1290 -1.62090 -1.25773  1.29221       5      0    6      2
## 1291 -0.76096  1.46191  0.88113       6      2    6      0
## 1292 -0.76096 -1.01450 -0.21712       5      0    6      0
## 1293  0.76096 -1.13788 -0.71126       4      3    6      0
## 1294 -0.91699  1.30612 -0.21712       6      0    6      0
## 1295 -0.15487 -0.52745  0.19268       4      3    3      3
## 1296 -1.34289 -0.52745  0.52975       6      1    6      0
## 1297  0.13136  0.25953  0.52975       3      2    6      0
## 1298  0.28783 -0.65253 -0.21712       3      6    5      2
## 1299  0.94156  1.13407  0.19268       3      0    5      0
## 1300  1.45039  1.13407 -1.37983       5      0    6      0
## 1301 -0.60633  0.41594 -1.37983       5      4    6      0
## 1302  0.94156 -1.38502  1.29221       5      3    5      0
## 1303 -0.01729 -2.42317  0.19268       6      0    6      0
## 1304 -0.60633  0.25953  0.19268       4      6    5      0
## 1305 -0.76096  0.12331 -0.21712       6      0    6      0
## 1306  0.43852 -0.00665  0.52975       5      0    6      0
## 1307  2.23427  0.25953  0.52975       5      2    6      0
## 1308 -0.76096 -0.27607  0.52975       5      3    6      0
## 1309  0.43852  0.75830 -0.21712       6      0    5      0
## 1310 -0.45321  1.81175 -0.71126       6      0    6      0
## 1311 -1.47955 -1.38502  1.86203       6      6    6      0
## 1312  0.94156  1.13407  0.52975       6      2    6      0
## 1313 -0.30172  1.30612 -0.21712       2      5    5      0
## 1314 -1.77200 -0.40581 -0.21712       5      3    6      0
## 1315 -1.34289  0.58489 -0.71126       5      0    6      0
## 1316  0.94156 -0.14277  0.88113       5      3    6      0
## 1317 -0.15487  1.30612 -0.21712       6      1    6      0
## 1318 -0.30172 -0.27607  1.29221       5      0    6      0
## 1319  0.76096 -0.27607 -1.37983       4      6    5      0
## 1320  0.43852 -1.64101  0.19268       5      0    6      0
## 1321  0.28783  1.46191 -0.71126       1      1    6      2
## 1322  0.43852 -1.01450  0.19268       4      0    6      0
## 1323  0.13136 -0.52745 -0.71126       4      4    6      0
## 1324 -0.30172 -0.40581  1.29221       4      0    5      0
## 1325  1.28610  1.13407  0.19268       4      0    6      0
## 1326  1.81866  0.25953 -0.21712       5      3    6      3
```

```
## 1327 -1.62090 -1.13788   0.88113       5      0    0      0
## 1328  1.81866 -1.13788   0.52975       5      3    6      3
## 1329  0.13136 -0.65253  -0.71126       2      1    6      0
## 1330 -0.91699  2.33337  -1.37983       4      0    4      0
## 1331 -0.91699  0.25953   0.52975       5      2    5      3
## 1332  2.46262 -0.00665   1.29221       5      0    6      0
## 1333 -0.91699 -0.00665  -0.71126       4      0    6      0
## 1334  0.76096  1.30612   0.19268       6      0    6      0
## 1335 -0.76096  0.75830   0.19268       6      0    4      0
## 1336 -0.60633  0.75830   0.52975       6      3    6      1
## 1337 -0.45321 -2.72827   1.29221       5      2    5      6
## 1338 -0.60633  0.93949   1.86203       5      3    6      5
## 1339 -0.30172 -0.52745  -0.71126       6      0    0      4
## 1340  0.13136 -1.51840   0.52975       3      0    4      0
## 1341 -1.07533 -0.89891   0.88113       5      3    6      0
## 1342 -2.53830  0.93949  -1.37983       5      6    6      0
## 1343  1.28610  0.25953   0.88113       5      0    5      0
## 1344 -0.15487  0.12331   0.19268       6      0    6      0
## 1345 -0.45321 -2.04506  -0.21712       5      3    4      0
## 1346  0.28783 -0.40581  -0.21712       4      3    6      3
## 1347 -1.21213 -1.25773   1.86203       5      2    6      0
## 1348 -0.01729 -0.65253   0.19268       3      3    6      0
## 1349 -0.15487  1.46191  -1.37983       5      0    6      0
## 1350 -1.21213 -0.27607   0.88113       2      6    6      0
## 1351  0.76096  0.12331   0.19268       3      0    6      0
## 1352 -0.15487 -1.25773   0.88113       5      3    6      3
## 1353  0.94156 -0.00665   1.29221       4      4    6      0
## 1354 -0.01729  0.58489   0.88113       6      0    6      0
## 1355 -0.91699  0.41594   0.88113       4      6    6      0
## 1356 -0.45321 -1.38502   0.88113       4      2    5      0
## 1357 -1.07533  0.12331  -0.21712       4      4    5      4
## 1358 -0.01729  1.30612   0.52975       5      0    6      0
## 1359 -1.21213 -2.30408  -0.21712       3      0    6      0
## 1360  0.76096 -1.13788   0.88113       6      6    5      4
## 1361  0.59042  2.04506  -0.21712       5      0    5      0
## 1362 -1.07533 -1.38502   1.29221       5      6    6      0
## 1363  1.11406 -0.89891   0.88113       6      4    6      0
## 1364 -1.77200 -2.18109   1.29221       6      0    6      0
## 1365  0.43852 -1.38502  -1.37983       3      0    5      0
## 1366 -1.47955 -1.13788   0.88113       5      5    5      4
## 1367  0.43852 -0.27607   0.52975       5      0    6      3
## 1368 -1.21213 -1.51840   1.86203       4      3    6      3
## 1369  0.76096 -0.52745  -1.37983       6      0    0      0
## 1370 -0.30172 -1.25773  -1.37983       4      3    6      0
## 1371  0.43852 -0.78155   0.52975       5      3    6      3
## 1372 -0.15487 -0.14277  -1.37983       6      0    6      0
## 1373  0.76096 -1.01450   0.19268       3      0    3      0
## 1374 -1.62090 -0.40581  -0.21712       5      2    6      2
## 1375  1.45039  0.93949  -1.37983       5      0    6      0
## 1376 -0.01729  2.04506  -0.21712       3      4    6      0
## 1377 -0.15487  0.25953   0.88113       5      5    6      0
## 1378 -0.45321  0.58489  -0.71126       5      0    6      0
## 1379  1.81866  1.30612  -0.21712       6      0    4      0
## 1380  1.11406 -1.01450  -0.71126       5      2    6      0
```

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## 1381  0.76096  0.12331   1.29221       5      3    6      0
## 1382 -0.60633  1.46191  -0.21712       5      0    6      0
## 1383 -0.01729  0.58489  -1.37983       5      0    6      0
## 1384 -0.60633 -0.27607   0.19268       6      5    6      2
## 1385 -0.60633 -0.65253  -0.21712       0      0    6      0
## 1386 -0.60633 -0.89891   1.29221       5      4    6      0
## 1387 -0.76096  0.25953  -0.71126       5      2    6      0
## 1388 -0.01729 -0.14277   1.29221       5      0    6      0
## 1389 -0.60633 -1.25773   1.86203       5      4    5      2
## 1390 -0.45321  0.12331  -1.37983       0      0    6      0
## 1391 -0.01729  0.41594  -0.71126       3      0    6      0
## 1392  0.76096  1.46191  -1.37983       3      0    6      0
## 1393  0.76096  0.58489  -0.21712       5      0    6      0
## 1394  1.45039 -0.89891  -1.37983       5      0    6      0
## 1395  1.61108  0.58489  -0.21712       5      2    6      0
## 1396  1.28610  2.04506   0.88113       3      2    5      0
## 1397 -0.45321 -0.27607  -0.71126       5      0    6      0
## 1398 -0.60633 -0.14277  -1.37983       5      0    6      0
## 1399  1.28610  0.41594  -0.71126       5      0    6      0
## 1400  0.94156 -0.52745  -1.37983       6      2    6      0
## 1401  0.13136  0.58489  -1.37983       5      0    6      0
## 1402  2.75696 -0.89891  -2.55524       5      0    4      0
## 1403  0.28783 -0.78155   0.52975       6      2    6      0
## 1404  0.43852 -1.38502  -1.37983       6      0    5      0
## 1405  1.28610  0.41594   0.19268       5      0    6      0
## 1406  0.43852 -1.25773   0.88113       6      0    6      0
## 1407  0.13136 -0.52745  -0.71126       5      2    5      0
## 1408  1.45039  1.30612  -0.71126       3      0    5      0
## 1409 -0.30172  1.46191  -0.21712       5      1    5      0
## 1410 -0.01729  0.25953  -1.37983       5      0    5      0
## 1411 -0.76096  0.75830  -0.71126       5      0    6      0
## 1412  0.59042  0.58489  -0.21712       5      0    6      0
## 1413 -1.77200 -1.64101   0.88113       3      3    6      0
## 1414  0.28783  0.25953  -1.37983       5      4    6      0
## 1415  0.28783 -0.00665  -0.71126       0      0    5      0
## 1416  1.81866 -0.27607  -1.37983       5      0    6      0
## 1417  0.59042 -0.00665   0.19268       6      3    6      0
## 1418 -0.76096 -0.52745   0.88113       4      0    5      0
## 1419 -0.60633  0.25953  -0.21712       6      0    5      0
## 1420  1.11406 -1.01450   0.19268       1      3    4      0
## 1421  0.43852 -0.27607   0.19268       4      2    6      2
## 1422 -0.45321 -1.13788   1.29221       5      0    6      0
## 1423  0.76096  0.58489   0.19268       6      6    5      3
## 1424 -0.15487 -0.00665   1.29221       5      0    5      0
## 1425  0.28783  1.81175   0.88113       6      0    6      0
## 1426 -1.34289  1.13407   0.52975       4      3    6      0
## 1427  0.43852 -0.89891  -0.21712       3      0    6      0
## 1428 -0.60633 -0.14277   0.88113       6      0    6      0
## 1429 -2.21844 -0.65253   1.86203       6      0    6      0
## 1430 -0.45321  0.58489  -0.71126       6      1    6      0
## 1431  2.75696  1.46191  -1.37983       5      0    6      0
## 1432  0.59042  0.25953  -1.37983       2      0    4      0
## 1433  0.28783  0.75830   0.52975       6      1    6      0
## 1434  0.28783 -1.13788   1.86203       5      0    6      0
```

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## 1435  0.43852 -0.14277  -0.71126       3      2    6      2
## 1436 -0.91699  1.13407  -0.71126       5      0    6      3
## 1437 -1.21213 -0.78155  -0.21712       6      0    4      0
## 1438  0.76096  0.41594  -1.37983       6      0    6      0
## 1439  1.45039  1.30612  -0.71126       6      0    6      0
## 1440  1.28610  0.93949  -1.37983       1      0    6      0
## 1441  0.94156  0.58489  -0.71126       6      1    6      0
## 1442  1.81866  0.93949  -0.71126       6      0    5      0
## 1443  0.94156  1.13407  -1.37983       5      0    6      0
## 1444  1.11406  2.04506   0.19268       4      0    6      0
## 1445 -0.60633  1.81175  -0.21712       4      0    2      0
## 1446  1.28610  1.63088   0.52975       5      0    5      0
## 1447  0.59042  0.75830  -0.21712       0      0    6      0
## 1448 -1.07533  1.46191  -0.21712       5      2    5      0
## 1449  1.11406  1.81175  -1.37983       5      0    6      0
## 1450 -1.92595  2.33337   1.29221       3      3    6      3
## 1451  0.43852  1.13407  -1.37983       4      0    5      0
## 1452  0.76096  0.75830  -0.71126       5      0    6      0
## 1453  2.03972 -0.40581  -0.71126       5      4    6      0
## 1454  1.45039  1.63088  -0.71126       5      0    6      0
## 1455  1.81866  0.41594  -1.37983       4      1    6      0
## 1456  0.43852  1.13407  -0.71126       4      0    6      0
## 1457  1.11406 -0.65253  -0.21712       5      2    6      0
## 1458  0.13136  0.75830   0.19268       5      1    6      0
## 1459  0.28783 -0.78155  -0.71126       5      0    6      0
## 1460  0.43852  0.12331  -0.71126       5      0    6      0
## 1461  0.94156  0.41594  -0.21712       6      0    6      0
## 1462  0.76096 -0.52745   0.52975       4      1    5      0
## 1463 -0.91699 -0.14277   0.88113       3      0    5      0
## 1464 -0.15487  0.58489  -1.37983       5      0    5      0
## 1465  1.61108  0.93949  -0.21712       4      1    3      1
## 1466  1.28610  0.12331  -1.37983       4      0    0      0
## 1467  0.76096 -0.27607  -1.37983       5      0    6      0
## 1468  2.46262  0.41594  -1.37983       0      0    6      0
## 1469  0.28783  1.46191  -0.21712       5      2    6      0
## 1470 -1.07533  0.12331  -0.71126       6      0    6      0
## 1471  0.43852  0.12331  -0.71126       6      0    6      0
## 1472 -1.21213  0.75830   1.86203       4      4    6      0
## 1473 -2.35413 -2.30408   1.29221       5      6    5      4
## 1474 -0.45321  0.12331  -0.71126       5      2    6      0
## 1475 -0.30172 -1.25773  -1.37983       6      3    6      0
## 1476 -0.01729 -0.52745   1.86203       6      3    6      2
## 1477 -0.01729 -0.27607  -0.71126       5      3    3      0
## 1478  0.94156  0.12331  -0.71126       3      2    6      2
## 1479 -0.01729 -2.04506   0.88113       4      1    2      1
## 1480  0.13136  0.75830  -0.21712       5      0    6      0
## 1481  1.61108 -0.14277  -0.71126       5      4    5      0
## 1482  0.13136 -1.13788   0.88113       3      1    6      2
## 1483  0.94156  0.58489  -0.71126       5      0    6      0
## 1484 -1.62090 -0.65253   0.52975       6      3    6      0
## 1485 -0.01729  0.75830  -0.71126       5      0    6      0
## 1486 -1.07533  0.58489   1.29221       6      5    6      3
## 1487 -1.77200 -1.25773   1.86203       6      0    6      0
## 1488 -1.47955  1.13407   0.88113       5      1    6      0
```

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## 1489 -0.45321 -0.78155   0.88113       5      0    5      0
## 1490 -0.45321 -1.51840   1.29221       6      4    4      0
## 1491  0.13136 -0.27607   1.29221       4      5    6      0
## 1492 -0.30172 -1.64101   1.29221       5      4    6      0
## 1493 -1.47955 -1.78169   1.86203       5      6    6      0
## 1494 -0.60633 -0.40581  -0.71126       4      2    4      0
## 1495 -0.91699 -0.89891   0.19268       5      5    5      0
## 1496 -0.45321 -1.01450   0.19268       5      4    6      0
## 1497 -0.01729  0.58489   0.88113       5      0    6      0
## 1498 -0.60633 -0.00665   0.52975       5      4    6      3
## 1499 -2.07848 -0.00665   1.86203       4      0    6      0
## 1500 -0.15487 -0.52745   0.19268       6      0    6      0
## 1501 -0.30172 -0.40581   0.19268       6      3    6      2
## 1502  0.13136 -0.52745   1.29221       6      4    6      0
## 1503  1.28610 -0.78155  -0.21712       5      1    6      0
## 1504  0.59042  2.04506  -0.21712       6      0    4      0
## 1505 -0.76096 -2.18109  -0.21712       4      0    6      0
## 1506 -1.77200 -0.40581   0.19268       6      0    6      0
## 1507  0.59042 -0.00665   0.52975       5      1    5      0
## 1508 -0.45321 -0.89891  -1.37983       0      0    6      0
## 1509  0.13136 -1.25773  -0.21712       5      5    6      0
## 1510 -0.60633 -0.14277  -1.37983       6      0    4      0
## 1511 -0.60633 -0.52745  -0.21712       3      0    6      0
## 1512 -0.30172 -1.92173   0.19268       3      2    6      4
## 1513 -1.34289 -1.13788   1.86203       6      5    6      0
## 1514 -1.07533 -0.40581   1.86203       5      4    6      0
## 1515 -0.91699 -0.52745   1.86203       5      3    6      0
## 1516 -0.91699  0.12331   0.19268       6      0    5      0
## 1517 -1.34289 -1.92173  -0.71126       0      2    3      2
## 1518 -0.15487 -1.25773   0.19268       5      3    6      0
## 1519 -0.91699 -1.38502   1.29221       5      5    5      0
## 1520  1.45039  0.41594  -1.37983       3      6    6      0
## 1521  0.13136 -0.65253   1.86203       4      6    6      2
## 1522  0.43852 -1.38502   0.52975       2      2    6      0
## 1523 -1.21213 -0.89891   0.88113       6      4    6      0
## 1524 -0.45321 -0.52745   1.86203       5      3    6      0
## 1525 -1.21213 -1.51840   1.29221       6      3    6      0
## 1526 -1.47955  0.12331   1.29221       6      0    6      0
## 1527 -0.01729 -0.14277   1.29221       5      6    6      0
## 1528  1.28610 -0.52745   0.88113       3      0    6      0
## 1529  0.76096 -0.27607  -0.21712       5      6    6      0
## 1530 -0.15487 -2.57309   0.88113       5      3    5      2
## 1531 -0.60633 -0.00665   0.88113       5      0    6      0
## 1532  0.28783 -0.65253  -0.71126       6      5    5      0
## 1533 -0.60633 -0.52745  -0.71126       5      3    6      0
## 1534  2.03972  1.81175  -1.37983       5      6    6      0
## 1535  0.43852 -1.13788  -0.71126       5      0    6      0
## 1536 -0.45321  2.33337   0.88113       4      0    5      0
## 1537  0.94156 -0.89891   1.29221       6      3    6      3
## 1538  1.45039  0.12331   0.88113       6      0    5      0
## 1539  0.43852  0.93949   0.19268       6      6    6      0
## 1540 -1.34289 -2.04506   0.88113       6      3    4      5
## 1541 -0.76096 -1.64101   1.29221       4      2    5      0
## 1542  0.59042 -0.78155   0.19268       4      4    6      0
```

```
## 1543  0.13136 -0.14277  -0.71126       3      0    6      0
## 1544 -0.60633 -1.13788   0.52975       3      0    6      0
## 1545 -0.01729  0.58489   0.52975       3      3    5      0
## 1546  0.28783  1.30612  -1.37983       5      0    6      0
## 1547  0.28783  1.30612  -0.71126       5      0    6      0
## 1548  0.28783 -0.00665   0.19268       6      2    6      0
## 1549 -0.91699 -0.40581  -1.37983       3      0    6      0
## 1550 -0.60633  0.41594  -0.21712       6      0    6      0
## 1551  0.94156  0.93949  -1.37983       6      0    6      0
## 1552 -1.77200 -0.40581   1.29221       6      0    6      0
## 1553 -0.01729  1.46191   0.19268       5      0    6      0
## 1554  0.28783  0.25953  -0.21712       6      0    6      0
## 1555  1.61108  1.13407   0.19268       5      0    6      0
## 1556  0.76096  1.63088   0.19268       4      0    6      0
## 1557 -0.76096  1.30612  -0.71126       5      0    5      0
## 1558 -0.91699  1.13407  -1.37983       4      0    6      0
## 1559  0.28783 -0.14277  -0.71126       1      1    6      0
## 1560 -0.60633 -0.27607  -0.21712       1      0    6      0
## 1561 -0.15487 -1.13788   0.88113       4      2    6      0
## 1562 -0.76096  2.63199  -1.37983       6      0    6      0
## 1563  1.45039  2.04506  -0.71126       6      0    6      0
## 1564  1.28610  0.25953  -1.37983       5      0    6      0
## 1565 -0.91699 -0.78155  -0.71126       4      0    6      0
## 1566  1.81866 -0.00665   0.19268       5      0    6      0
## 1567 -0.76096 -0.27607  -1.37983       5      0    6      0
## 1568 -0.15487 -0.00665   0.88113       5      0    5      0
## 1569  1.81866  0.75830  -0.71126       6      0    6      0
## 1570  0.59042  0.58489  -0.71126       3      0    6      0
## 1571  0.59042  0.41594   0.19268       6      0    6      0
## 1572  1.61108 -0.52745   0.88113       3      0    6      0
## 1573  0.94156  1.63088  -1.37983       3      0    5      0
## 1574 -0.45321  0.41594  -1.37983       4      0    6      0
## 1575  1.45039  0.93949   0.19268       5      0    6      0
## 1576 -0.45321  0.58489  -1.37983       3      0    6      0
## 1577  1.28610  0.75830  -0.21712       4      0    6      0
## 1578  1.28610  0.58489  -1.37983       6      0    6      0
## 1579 -0.91699  0.12331  -1.37983       5      0    0      0
## 1580  0.43852  1.46191  -0.21712       4      0    6      0
## 1581  0.76096  0.12331  -0.71126       6      0    6      0
## 1582  1.81866  0.12331   0.19268       5      0    6      0
## 1583 -0.15487  0.58489   0.88113       6      1    6      0
## 1584 -0.30172  0.58489   0.19268       5      1    6      0
## 1585 -0.60633  0.41594  -0.21712       5      0    6      0
## 1586 -0.60633  0.12331  -0.21712       6      0    6      0
## 1587  0.28783  0.93949   0.52975       4      0    6      0
## 1588  1.45039  1.13407  -0.21712       5      0    6      0
## 1589  2.75696  1.13407  -1.37983       5      0    6      0
## 1590  1.11406  0.41594   0.88113       5      0    6      0
## 1591 -0.01729 -0.14277  -0.21712       5      1    6      0
## 1592 -0.15487  0.41594  -0.71126       5      0    5      0
## 1593 -0.01729 -0.27607   1.29221       5      0    5      0
## 1594  0.43852  0.41594  -0.21712       5      0    6      0
## 1595  0.59042  0.12331  -0.71126       5      0    6      0
## 1596  0.13136  0.75830  -0.71126       5      0    4      0
```

```
## 1597  0.28783 -0.00665  -0.71126       4      0    6      0
## 1598 -0.15487  0.58489   0.19268       5      0    5      0
## 1599 -0.91699  1.63088  -0.71126       4      0    6      0
## 1600 -0.30172 -0.78155   0.52975       6      0    6      0
## 1601  0.94156 -0.89891   1.86203       4      0    6      0
## 1602  0.76096  1.30612  -1.37983       5      0    6      0
## 1603 -0.91699 -0.14277   1.29221       0      0    5      0
## 1604  0.43852  0.58489  -0.71126       5      0    6      0
## 1605 -0.15487  1.13407  -0.21712       5      0    6      0
## 1606 -0.91699 -0.65253   1.29221       3      5    5      2
## 1607  0.94156  0.75830  -0.71126       4      0    6      0
## 1608  0.76096 -0.52745  -1.37983       5      0    6      0
## 1609  1.11406  0.93949  -1.37983       3      0    6      0
## 1610  0.43852 -0.00665  -0.21712       5      1    6      0
## 1611 -1.47955  0.58489   0.88113       4      1    6      0
## 1612  1.11406  3.00537  -0.21712       5      0    6      0
## 1613  0.76096 -0.40581   0.19268       6      0    6      0
## 1614  0.59042 -0.27607   0.88113       5      0    6      0
## 1615  0.59042  0.58489   0.52975       5      0    6      0
## 1616 -0.30172 -0.89891   0.88113       5      4    6      3
## 1617 -0.60633  0.75830  -0.21712       5      0    6      0
## 1618 -0.30172 -0.27607   0.19268       6      0    0      0
## 1619  0.43852  1.13407   0.19268       5      0    6      0
## 1620  0.59042 -0.89891   0.19268       5      0    6      0
## 1621 -0.76096 -0.27607  -0.71126       5      1    6      0
## 1622  0.13136  0.12331  -0.21712       5      1    6      0
## 1623  0.76096  0.75830  -1.37983       6      0    6      0
## 1624  0.59042  0.58489  -1.37983       5      0    5      0
## 1625 -0.15487  1.46191  -1.37983       4      1    6      0
## 1626  0.76096 -0.00665  -1.37983       3      0    6      0
## 1627  0.28783  0.58489   0.52975       2      0    6      0
## 1628 -1.07533 -1.01450   0.19268       6      0    6      0
## 1629  2.75696  1.13407  -0.71126       5      0    6      0
## 1630 -0.01729  1.81175   1.29221       6      0    6      0
## 1631 -0.30172  0.41594   0.88113       5      0    6      0
## 1632 -0.01729 -0.00665  -1.37983       4      0    5      0
## 1633  0.43852  0.58489  -0.71126       5      0    5      0
## 1634 -1.07533 -0.00665  -0.71126       4      0    3      0
## 1635 -1.47955 -1.01450   0.88113       5      6    6      0
## 1636  0.28783  0.41594  -0.71126       5      0    6      0
## 1637 -0.15487 -0.27607   0.19268       6      0    6      0
## 1638  0.59042  0.12331   0.52975       6      0    6      0
## 1639  0.94156  0.93949   0.19268       5      0    6      0
## 1640 -0.30172  1.13407  -1.37983       4      0    6      0
## 1641  0.43852 -0.14277  -0.71126       3      0    1      0
## 1642  0.76096  0.25953  -0.21712       3      0    6      0
## 1643 -0.01729 -0.14277  -0.21712       5      1    6      0
## 1644  0.94156  0.58489  -1.37983       6      0    6      0
## 1645  0.43852 -0.40581   0.19268       5      0    6      0
## 1646  0.76096  1.46191  -0.21712       4      0    6      0
## 1647 -0.30172  1.46191  -0.71126       3      0    6      0
## 1648  1.28610  0.58489   1.29221       5      0    5      0
## 1649 -1.47955 -0.40581  -0.71126       4      1    6      0
## 1650 -0.45321 -1.13788   0.19268       5      0    5      6
```

```
## 1651  1.81866  1.46191 -0.71126       5      0    6      0
## 1652 -1.62090  0.41594 -0.21712       5      0    5      0
## 1653  0.76096  0.93949 -0.71126       5      1    6      0
## 1654 -0.60633  0.12331 -1.37983       4      0    6      0
## 1655 -0.45321  0.93949 -0.21712       3      3    5      3
## 1656  0.43852 -0.00665  1.29221       4      2    6      0
## 1657  0.13136  0.41594 -1.37983       6      0    6      0
## 1658 -1.34289 -1.38502  1.86203       3      5    5      2
## 1659  1.61108 -0.27607 -0.71126       2      2    6      0
## 1660  0.43852 -0.14277  0.88113       5      2    6      0
## 1661  0.43852 -0.78155  0.19268       4      3    6      0
## 1662  0.76096 -0.14277  1.86203       5      2    6      0
## 1663  2.03972  0.93949  0.19268       5      0    4      0
## 1664 -0.60633  0.12331  1.86203       4      3    6      0
## 1665 -0.01729  0.93949 -1.37983       3      0    6      0
## 1666 -0.91699  0.41594  0.19268       3      1    6      0
## 1667  0.43852  0.93949  0.88113       4      0    6      0
## 1668 -1.07533  0.12331 -0.71126       6      0    6      0
## 1669  0.94156 -1.13788 -0.71126       5      0    6      0
## 1670  0.76096 -1.13788 -0.21712       3      0    6      0
## 1671  0.43852  0.75830 -0.71126       3      3    6      0
## 1672 -0.30172  2.33337 -0.71126       5      0    2      0
## 1673 -0.30172 -0.52745 -0.21712       5      0    6      0
## 1674  1.11406 -0.65253 -1.37983       3      0    0      0
## 1675  0.76096 -0.27607  0.19268       5      0    6      0
## 1676  1.28610  1.13407 -0.71126       5      0    6      0
## 1677 -2.21844  1.63088  0.19268       3      0    6      0
## 1678  0.43852  0.41594 -0.71126       5      0    6      0
## 1679  1.28610  0.58489 -0.71126       5      0    6      0
## 1680 -0.76096 -0.14277 -0.21712       5      2    6      0
## 1681  0.43852 -1.51840 -0.21712       4      2    6      0
## 1682  0.76096  0.25953 -0.21712       5      2    6      0
## 1683 -0.01729 -1.13788 -0.21712       4      5    6      0
## 1684  0.59042  0.58489 -0.21712       6      0    6      0
## 1685  2.03972 -0.27607 -0.71126       6      2    5      0
## 1686  0.43852 -0.27607  0.52975       6      0    6      0
## 1687 -1.47955 -0.00665 -1.37983       6      1    6      1
## 1688  1.45039 -0.89891  0.19268       3      0    6      0
## 1689  2.46262 -0.27607 -0.21712       5      0    4      0
## 1690  0.43852 -0.40581 -1.37983       5      0    6      0
## 1691  1.45039  1.13407 -1.37983       5      0    6      0
## 1692 -0.30172 -0.40581  1.29221       6      2    6      0
## 1693 -0.15487 -0.65253  0.88113       6      0    6      0
## 1694  0.28783 -0.40581 -0.71126       3      0    5      0
## 1695 -1.21213  1.13407 -0.21712       6      0    6      0
## 1696 -0.15487  0.41594  0.52975       4      0    6      0
## 1697 -0.15487 -0.00665 -0.21712       6      3    6      0
## 1698 -1.77200 -1.92173  1.86203       4      3    6      0
## 1699  0.76096 -0.00665  1.29221       6      0    5      0
## 1700  0.28783  0.93949 -0.71126       5      0    6      0
## 1701  0.28783 -1.13788 -0.21712       6      2    5      3
## 1702 -0.91699 -0.89891  0.52975       5      5    3      0
## 1703 -0.76096 -1.78169  0.52975       4      2    6      0
## 1704 -0.60633  1.81175 -0.21712       4      0    5      0
```

```
## 1705  0.94156 -0.14277   0.52975       5      0    5      0
## 1706  0.28783  1.13407   0.19268       5      0    6      0
## 1707  0.94156 -0.14277  -0.21712       6      0    6      0
## 1708 -0.91699  0.25953  -0.71126       4      0    6      0
## 1709  0.13136 -0.14277   1.29221       5      0    6      0
## 1710 -1.07533  0.25953  -0.71126       5      2    6      1
## 1711  0.59042  2.63199   0.88113       4      1    6      0
## 1712  1.28610  1.46191  -1.37983       5      0    6      0
## 1713 -0.76096  0.93949  -0.71126       1      0    6      0
## 1714 -0.76096 -0.89891  -0.21712       5      0    6      0
## 1715  0.76096  0.58489  -0.71126       5      0    6      0
## 1716 -0.91699  0.12331  -0.21712       5      0    6      0
## 1717  0.94156 -1.38502  -0.71126       5      0    5      0
## 1718  2.46262  1.30612  -1.37983       0      0    6      0
## 1719  0.59042  1.13407   0.52975       5      0    6      0
## 1720  0.94156  1.81175   1.29221       6      2    3      0
## 1721  0.59042  0.41594  -0.21712       6      0    6      0
## 1722  0.28783  0.58489  -1.37983       5      0    6      0
## 1723  1.81866  0.58489  -2.55524       3      0    5      0
## 1724 -0.76096 -0.52745  -2.55524       5      1    5      0
## 1725  1.81866  0.75830  -0.21712       4      0    6      0
## 1726 -0.45321 -0.40581  -0.21712       6      0    6      0
## 1727  0.13136  1.63088  -2.55524       4      0    6      0
## 1728 -0.01729 -0.78155  -0.21712       6      2    6      0
## 1729 -0.15487  0.12331  -0.21712       5      1    6      0
## 1730 -1.21213  1.30612   0.19268       4      2    6      0
## 1731 -0.01729  0.12331  -1.37983       5      0    6      0
## 1732  0.94156  1.46191   0.19268       5      0    4      0
## 1733  2.03972  2.04506  -0.21712       5      0    6      0
## 1734  1.28610  0.25953  -0.71126       5      0    4      0
## 1735  0.43852 -0.00665  -0.21712       5      0    5      0
## 1736  0.94156  0.58489  -0.71126       5      0    6      0
## 1737  0.28783 -0.00665  -0.71126       4      0    3      0
## 1738 -0.15487  1.13407  -1.37983       6      0    3      0
## 1739 -1.62090 -0.00665  -1.37983       5      0    6      0
## 1740 -0.60633 -0.52745   0.52975       5      2    6      0
## 1741 -0.30172  0.93949  -0.21712       5      0    2      0
## 1742  0.43852 -0.00665  -0.71126       3      0    0      0
## 1743  2.23427  2.33337  -1.37983       4      0    6      0
## 1744  0.13136  0.12331  -0.21712       0      0    1      0
## 1745  1.45039 -0.14277   0.19268       6      0    6      0
## 1746  3.46436 -0.78155   0.88113       5      6    2      0
## 1747 -1.92595 -2.04506   0.88113       5      6    6      0
## 1748 -0.60633  0.41594  -0.21712       5      0    6      0
## 1749 -1.07533 -0.65253   1.29221       5      6    6      0
## 1750  2.03972  1.13407   0.52975       5      0    6      0
## 1751  0.13136 -0.40581   0.88113       6      1    6      0
## 1752 -2.35413 -1.51840   0.88113       4      0    6      0
## 1753 -0.45321  1.13407   0.52975       5      0    6      0
## 1754  0.59042 -1.64101   0.52975       5      3    6      0
## 1755 -0.30172  0.75830  -1.37983       6      0    6      0
## 1756 -0.76096  1.13407   1.86203       3      6    6      3
## 1757 -0.30172  0.25953  -0.21712       5      0    5      0
## 1758 -1.34289  0.93949   0.19268       5      0    6      0
```

```
## 1759 -0.30172  0.75830   0.88113       5      0    6      0
## 1760 -2.21844 -1.38502  -0.71126       4      0    6      0
## 1761  0.28783  3.00537  -0.21712       4      3    3      0
## 1762  0.28783 -0.89891   0.88113       5      4    6      4
## 1763 -0.30172  0.93949  -0.71126       4      5    6      3
## 1764  2.75696  0.25953  -0.71126       5      0    6      0
## 1765  1.28610  2.63199  -1.37983       3      3    6      0
## 1766 -0.01729 -0.65253  -0.21712       5      2    6      0
## 1767  0.59042 -0.00665  -0.71126       5      0    6      0
## 1768  0.43852 -0.00665   0.88113       5      2    6      0
## 1769 -1.34289  0.93949   0.52975       2      1    6      0
## 1770 -0.01729 -0.52745   0.52975       4      3    6      0
## 1771 -1.21213 -0.78155   0.88113       6      6    5      3
## 1772  0.43852 -1.01450  -0.71126       0      0    6      4
## 1773  0.43852  0.41594  -0.71126       4      0    4      0
## 1774  0.28783  1.13407   0.88113       5      0    6      0
## 1775 -0.30172 -0.89891   1.86203       1      4    5      1
## 1776 -2.53830  0.75830   0.88113       5      0    5      0
## 1777  0.28783 -0.27607   0.88113       2      2    6      1
## 1778 -1.34289 -1.01450   0.19268       5      2    6      6
## 1779 -1.62090  1.30612  -0.71126       5      0    3      0
## 1780  0.43852  1.30612   0.88113       5      2    6      0
## 1781 -1.07533 -0.89891   1.29221       5      3    6      0
## 1782 -0.15487 -1.25773   0.19268       5      0    4      0
## 1783  0.43852  0.25953  -1.37983       5      0    6      0
## 1784 -0.01729 -0.78155   0.52975       6      0    5      0
## 1785  0.76096 -0.65253  -0.21712       4      0    5      0
## 1786 -0.60633  0.58489  -0.71126       6      1    6      0
## 1787 -1.07533 -1.51840   1.86203       5      6    6      0
## 1788 -1.21213 -0.40581   1.86203       3      2    6      2
## 1789  0.13136  2.33337  -1.37983       4      2    6      2
## 1790 -0.60633  3.00537   0.19268       6      3    4      0
## 1791  1.81866 -0.52745  -0.71126       4      5    6      0
## 1792  0.13136 -0.78155   1.86203       0      0    6      0
## 1793 -0.45321  0.75830   0.19268       6      6    6      2
## 1794 -0.76096 -1.92173  -0.21712       2      6    6      0
## 1795  0.28783 -1.51840   1.29221       6      0    4      0
## 1796 -2.07848 -0.78155   0.88113       3      6    4      0
## 1797 -1.07533  1.63088   0.88113       5      0    5      0
## 1798 -2.53830 -2.90161  -0.21712       2      1    6      0
## 1799  1.28610  1.81175   0.52975       6      0    6      0
## 1800  1.11406  0.12331   1.29221       4      3    6      0
## 1801  0.28783 -1.01450   0.88113       6      0    6      2
## 1802  1.28610 -0.65253   0.52975       4      0    3      0
## 1803  0.43852 -0.52745   0.52975       5      0    4      0
## 1804 -0.15487 -1.13788   0.52975       4      5    6      0
## 1805 -0.60633 -1.64101   0.52975       5      2    6      2
## 1806  0.13136 -0.40581  -1.37983       4      0    5      0
## 1807 -1.47955  0.12331   0.88113       4      3    6      2
## 1808 -1.21213  0.93949   0.52975       6      0    6      2
## 1809 -0.01729  2.33337  -0.71126       6      6    6      0
## 1810 -1.34289 -1.25773   0.88113       4      1    6      2
## 1811 -0.15487 -0.52745   1.29221       4      1    5      1
## 1812 -0.45321  1.46191   0.19268       2      0    5      0
```

```
## 1813  1.61108  0.93949 -0.71126       6      2    6      0
## 1814 -0.76096 -0.14277  0.52975       5      0    6      0
## 1815  1.11406  0.25953  0.88113       4      2    5      0
## 1816 -0.60633 -0.14277  1.86203       5      0    5      0
## 1817  0.28783  1.46191 -0.21712       6      3    6      0
## 1818 -0.60633 -2.72827  1.86203       2      0    6      0
## 1819  0.43852 -0.65253  1.86203       3      0    6      0
## 1820 -1.07533 -0.78155 -0.21712       3      3    5      0
## 1821 -0.30172 -2.30408  0.88113       4      2    6      0
## 1822 -0.30172 -0.40581  0.52975       6      0    0      0
## 1823 -1.34289 -0.00665 -0.21712       5      5    6      0
## 1824  1.28610 -0.00665  0.88113       4      0    5      0
## 1825  0.28783  0.25953 -0.21712       4      1    6      0
## 1826 -2.53830 -0.14277  0.88113       5      3    6      0
## 1827 -1.47955 -1.13788 -1.37983       2      1    1      1
## 1828 -1.07533 -0.89891 -0.71126       6      2    5      2
## 1829 -0.91699 -1.92173  0.19268       6      0    5      0
## 1830  0.28783  2.33337 -0.71126       5      0    6      0
## 1831 -0.30172  1.30612 -0.21712       6      1    6      0
## 1832 -0.45321  0.25953  0.88113       6      0    6      0
## 1833 -0.45321 -1.51840  1.29221       3      2    6      2
## 1834  0.28783 -1.78169  0.88113       2      6    2      0
## 1835  0.76096 -0.27607 -0.21712       3      6    6      0
## 1836  0.59042  0.25953 -1.37983       6      2    6      0
## 1837  1.45039  0.25953  1.29221       4      1    6      1
## 1838  1.45039 -0.14277  0.88113       2      2    5      2
## 1839 -0.30172 -1.13788  1.29221       5      0    5      0
## 1840 -2.07848  0.93949  0.52975       4      0    5      0
## 1841 -1.62090 -0.14277 -0.21712       5      1    6      1
## 1842  1.28610  0.41594  0.19268       6      3    6      0
## 1843  0.76096  1.30612 -0.21712       5      1    6      0
## 1844  1.11406  1.13407  0.88113       5      0    5      0
## 1845 -0.91699 -1.38502  2.90161       6      4    5      0
## 1846  0.59042  1.13407  1.86203       3      6    6      4
## 1847 -0.76096  0.75830 -1.37983       2      2    6      0
## 1848  0.76096 -1.01450  0.19268       3      5    6      0
## 1849 -0.30172 -1.25773  0.88113       5      2    6      0
## 1850 -0.45321  0.75830  0.19268       6      2    6      0
## 1851 -0.30172  0.93949 -0.21712       5      0    5      0
## 1852  0.43852 -0.14277 -0.21712       3      2    6      0
## 1853 -2.07848  0.41594 -0.21712       5      0    5      0
## 1854 -0.30172 -0.00665  0.88113       3      3    6      3
## 1855 -0.30172 -1.51840  1.29221       5      2    6      0
## 1856 -0.01729  0.12331 -0.71126       4      0    2      0
## 1857 -1.47955 -0.89891 -1.37983       3      3    6      0
## 1858 -0.15487 -1.78169  2.90161       6      3    6      3
## 1859 -0.15487 -0.14277  0.88113       4      3    6      0
## 1860  0.28783  0.12331 -0.21712       6      2    6      3
## 1861 -0.45321 -0.65253 -0.71126       5      5    6      2
## 1862 -0.15487  0.41594  0.88113       5      6    6      0
## 1863 -1.07533  0.25953  0.52975       6      1    6      2
## 1864 -1.07533  0.93949  0.88113       5      3    6      0
## 1865 -0.91699  0.41594 -0.21712       5      3    5      2
## 1866 -0.60633 -2.18109  0.88113       5      0    6      0
```

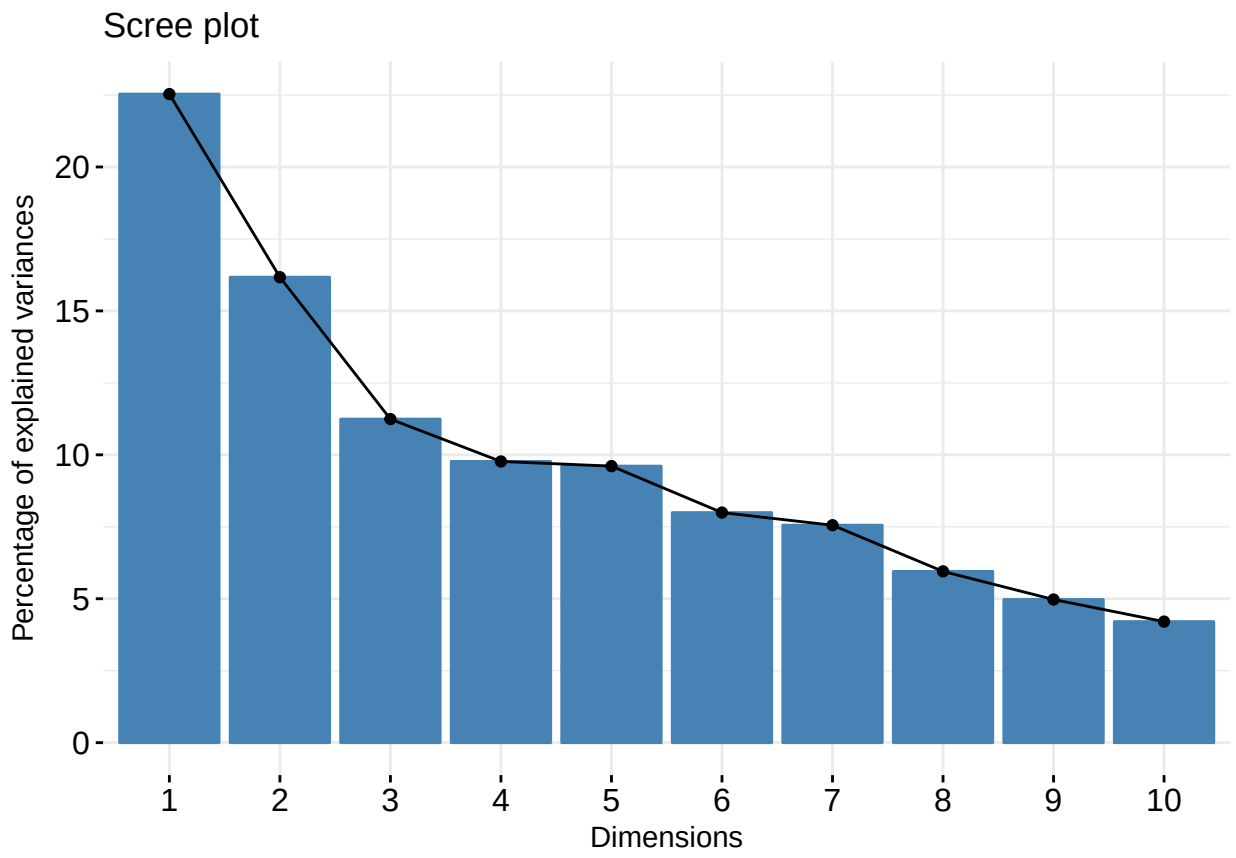
```
## 1867  0.28783  1.63088  -0.71126       6      0    6      0
## 1868 -0.76096 -0.14277   1.86203       6      0    6      2
## 1869 -1.62090 -1.38502   0.19268       2      4    6      0
## 1870 -0.30172 -0.00665   0.19268       3      2    5      0
## 1871  1.81866  1.30612  -0.71126       6      3    6      0
## 1872 -1.07533  0.12331  -0.71126       6      3    6      6
## 1873  0.76096 -1.51840   0.88113       5      6    5      0
## 1874 -0.60633 -0.40581   0.52975       5      3    6      2
## 1875  0.94156 -0.65253  -0.21712       5      0    6      0
## 1876 -0.76096 -0.14277   1.29221       5      0    5      0
## 1877 -0.91699 -0.78155   0.52975       6      0    5      0
## 1878 -1.77200  0.58489  -0.21712       6      2    6      5
## 1879 -0.76096  2.33337  -0.71126       4      0    2      0
## 1880 -0.30172 -0.27607   0.88113       4      3    5      2
## 1881  0.76096 -1.13788   0.88113       5      0    4      0
## 1882  0.76096 -1.51840   0.88113       5      0    5      0
## 1883 -1.77200 -1.38502   0.52975       4      6    6      0
## 1884 -1.62090 -2.57309   1.29221       5      0    6      0
## 1885  1.11406  0.41594   0.88113       4      3    6      0
```

valeure propres et ebouli des valeurs propres

```
res.PCA$eig
```

```
##         eigenvalue percentage of variance
## comp 1   2.2532953              22.532953
## comp 2   1.6170566              16.170566
## comp 3   1.1241202              11.241202
## comp 4   0.9769832               9.769832
## comp 5   0.9607505               9.607505
## comp 6   0.7993781               7.993781
## comp 7   0.7554827               7.554827
## comp 8   0.5950216               5.950216
## comp 9   0.4973476               4.973476
## comp 10  0.4205642               4.205642
##         cumulative percentage of variance
## comp 1                           22.53295
## comp 2                           38.70352
## comp 3                           49.94472
## comp 4                           59.71455
## comp 5                           69.32206
## comp 6                           77.31584
## comp 7                           84.87067
## comp 8                           90.82088
## comp 9                           95.79436
## comp 10                         100.00000
```

```
fviz_screeplot(res.PCA,ncp=10)
```



L'effet coude commence a partir de latroisiemmecomposante, donc no trois premiere composantes sont suffisante pour une bonne representation.

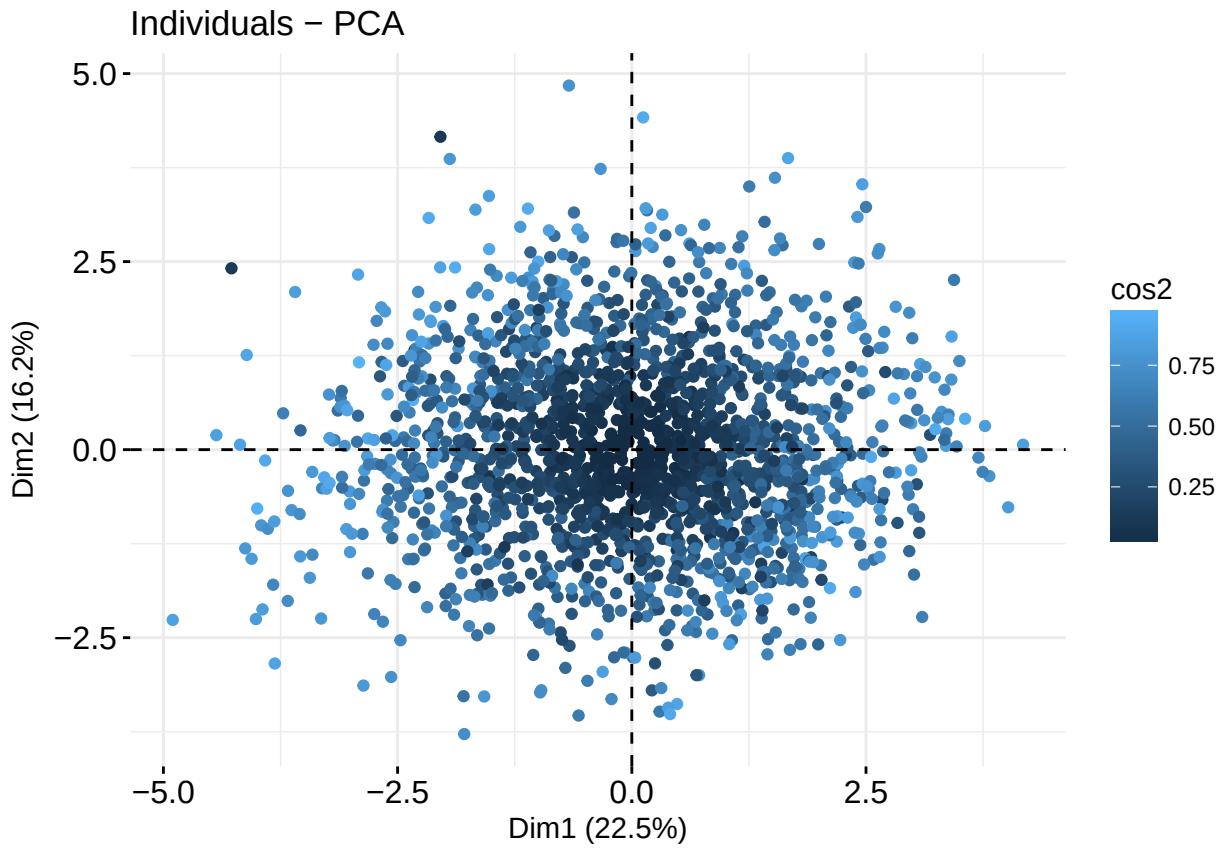
qualité des representations des individus

```
head(res.PCA$ind$cos2)
```

```
##         Dim.1      Dim.2       Dim.3      Dim.4        Dim.5      Dim.6
## 1 0.010705651 0.07590570 0.133149018 0.10539192 0.6267316296 0.01009339
## 2 0.167942697 0.33967945 0.006388805 0.08284111 0.0001441333 0.16516240
## 3 0.003147153 0.03683889 0.311670002 0.01983182 0.1029482317 0.01174068
## 4 0.193084994 0.07229227 0.204517886 0.02132255 0.0565246382 0.30946169
## 5 0.079276985 0.27005140 0.200302913 0.15164724 0.0339228611 0.08786420
## 6 0.415848237 0.21423592 0.029034123 0.08535011 0.0020432199 0.09621808
##        Dim.7        Dim.8       Dim.9       Dim.10
## 1 0.01275520 0.0038230500 0.011929749 9.514692e-03
## 2 0.02704120 0.0351667307 0.054946147 1.206873e-01
## 3 0.05258611 0.0029640198 0.304287762 1.539853e-01
## 4 0.08498852 0.0111194058 0.009532107 3.715595e-02
## 5 0.01257068 0.0009304637 0.102355326 6.107793e-02
## 6 0.11445153 0.0305588251 0.012259894 6.457791e-08
```

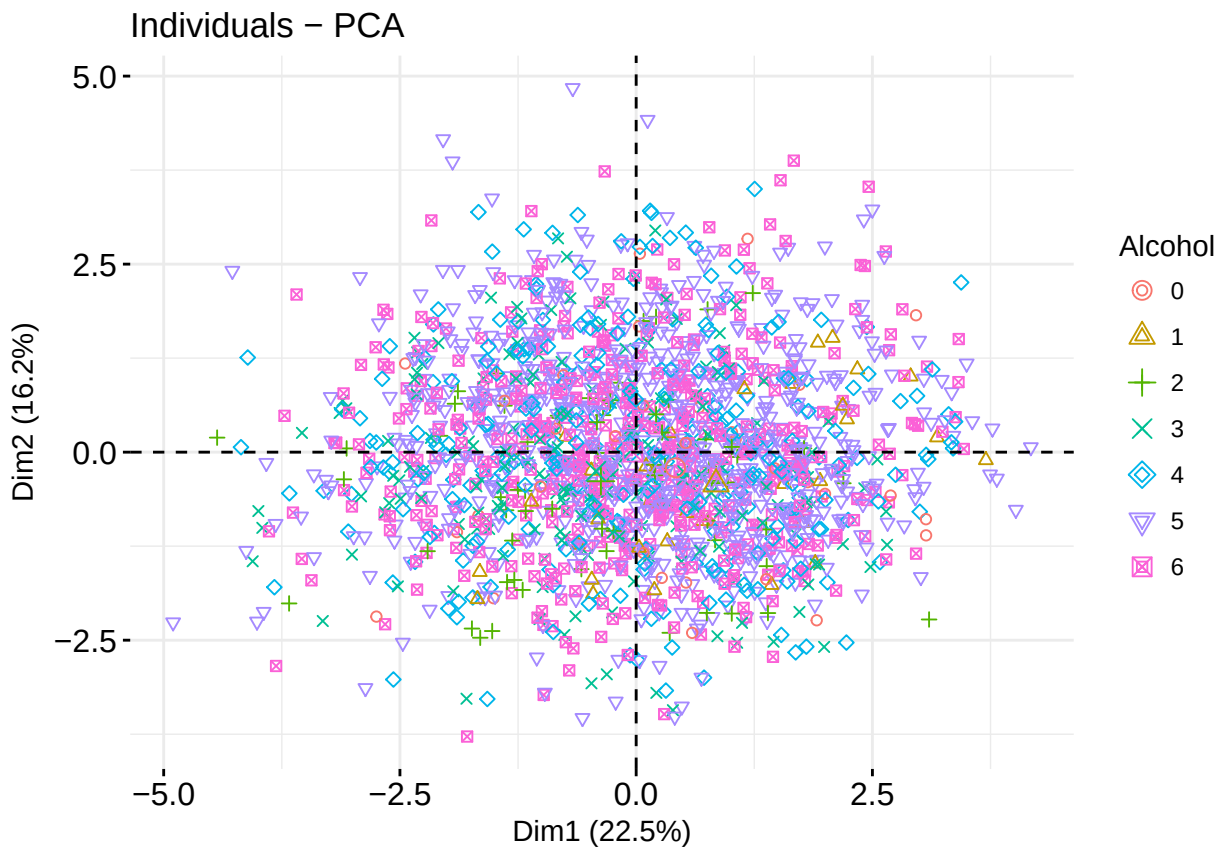
representation des individus et selon les cos2

```
fviz_pca_ind(res.PCA,geom = "point",col.ind = "cos2")
```

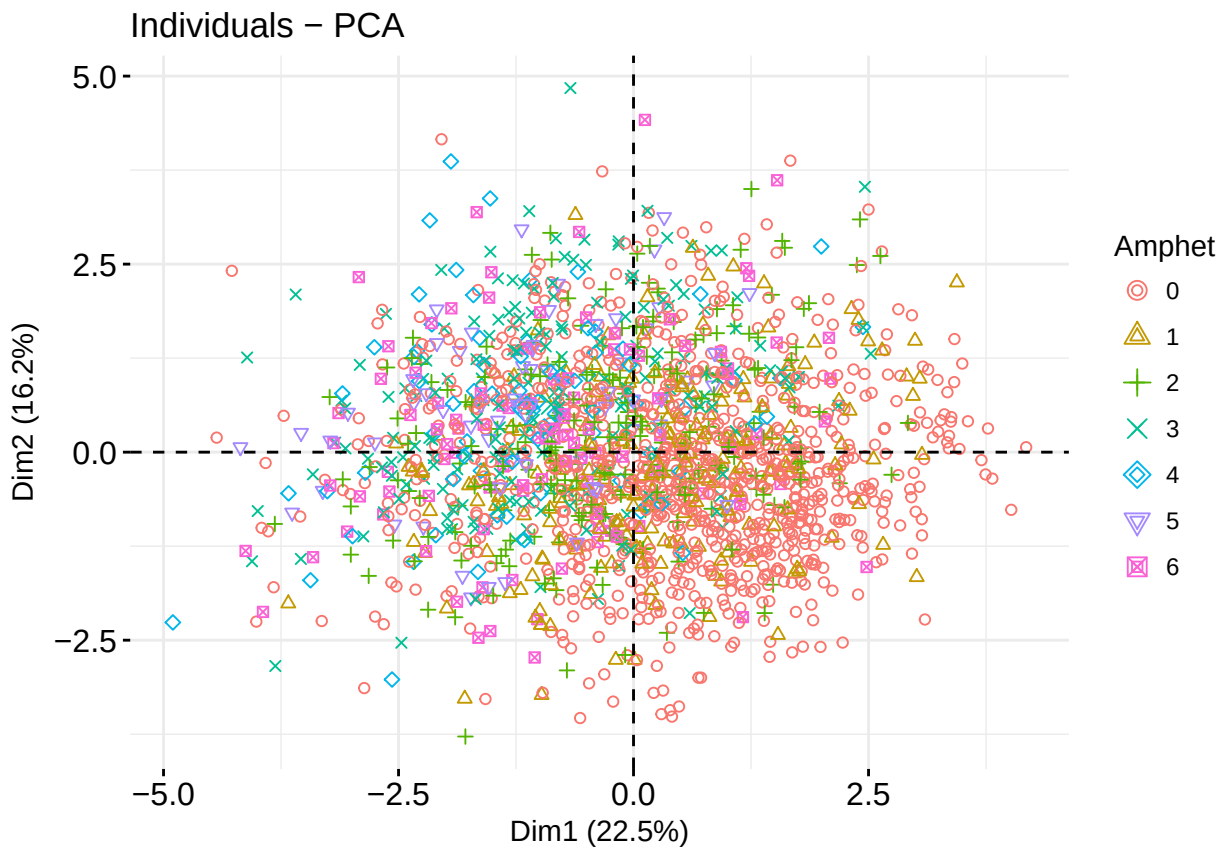


representation des individus et selon la consomation des drogues

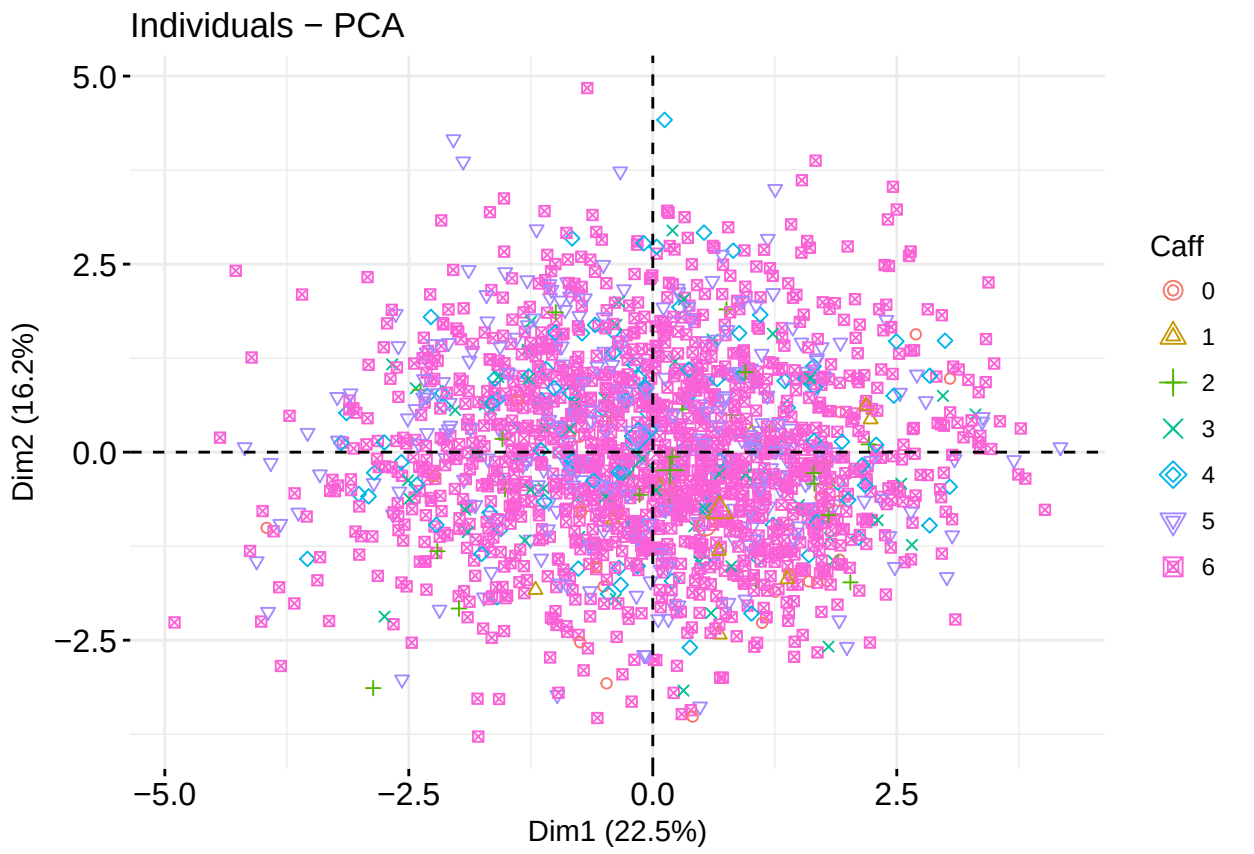
```
fviz_pca_ind(res.PCA,label="none",habillage = 11)
```



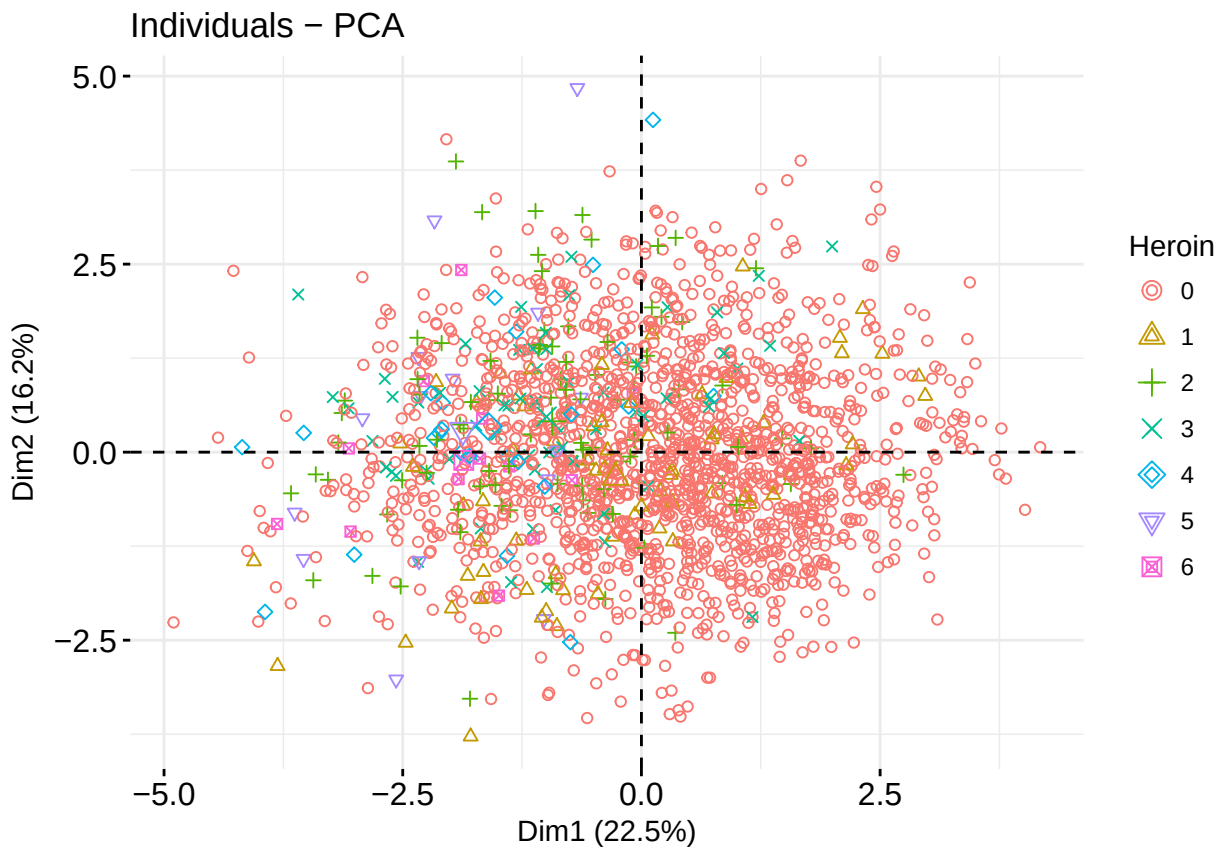

```
#pca3d(pca3,group = d$Alcohol,bg="white",axes.color = "black")
fviz_pca_ind(res.PCA,label="none",habillage = 12)
```




```
#pca3d(pca3,group = d$Amphet,bg="white",axes.color = "black")
fviz_pca_ind(res.PCA,label="none",habillage = 13)
```




```
#pca3d(pca3,group = d$Caff,bg="white",axes.color = "black")
fviz_pca_ind(res.PCA,label="none",habillage = 14)
```




```
#pca3d(pca3,group = d$Heroin,bg="white",axes.color = "black")
```

Quant on observe la representation selon la consomation de caffeine, on voit nettement que les individu de niveau 6 sont dominants, ces individus representent ceux là meme qui consommaient toujours l'alcool a la date de l'enquette. Par contre pour l'heroin,on note une dominance des individu de niveau 0, qui sont ceux la qui n'ont jamais pris ce stupefiant.

qualité des representations des variables

```
res.PCA$var$cos2
```

```
##                Dim.1        Dim.2       Dim.3       Dim.4        Dim.5
## Age        0.16191153 0.1488954183 0.029636172 0.112722020 0.1372166610
## Gender     0.14535019 0.0690665489 0.449754380 0.001699505 0.0153247812
## Education  0.19137246 0.0002276207 0.171904334 0.344798043 0.0295348532
## Ethnicity  0.01792511 0.0342747484 0.111428739 0.253274903 0.5684763050
## Nscore     0.37618506 0.1387699146 0.219865464 0.006004739 0.0093008129
## Escore     0.18188027 0.4932859350 0.002217856 0.003276085 0.0005989924
## Oscore     0.02643898 0.4957860817 0.075877545 0.021590118 0.0166678537
## Ascore     0.27863830 0.0059852650 0.052062261 0.160508391 0.1687497119
## Cscore     0.57235845 0.0103494805 0.002852361 0.002731710 0.0116145730
## Impulsive  0.30123492 0.2204155521 0.008521077 0.070377712 0.0032659731
##                 Dim.6        Dim.7        Dim.8        Dim.9       Dim.10
## Age        9.864614e-02 0.2711905407 0.0353781466 0.0021556324 2.247739e-03
## Gender     1.826037e-01 0.0546227971 0.0096050988 0.0354480167 3.652496e-02
## Education  1.458142e-01 0.0011547043 0.1137020404 0.0006285242 8.632030e-04
```

```
## Ethnicity 4.952228e-03 0.0049245855 0.0045436390 0.0001164667 8.327416e-05
## Nscore    9.303473e-04 0.0009083664 0.0532932104 0.0521997035 1.425424e-01
## Escore    9.875368e-02 0.0312923187 0.0002110364 0.0141680018 1.743158e-01
## Oscore    6.182405e-02 0.0904301409 0.1632455599 0.0303299004 1.780977e-02
## Ascore    2.359343e-06 0.2434567543 0.0585836695 0.0284373901 3.575899e-03
## Cscore    1.239732e-02 0.0517091400 0.1205359635 0.2088049970 6.646004e-03
## Impulsive 1.934541e-01 0.0057933566 0.0359232431 0.1250589240 3.595517e-02
```

###Correlation entre les variables et les axes (composantes principales)

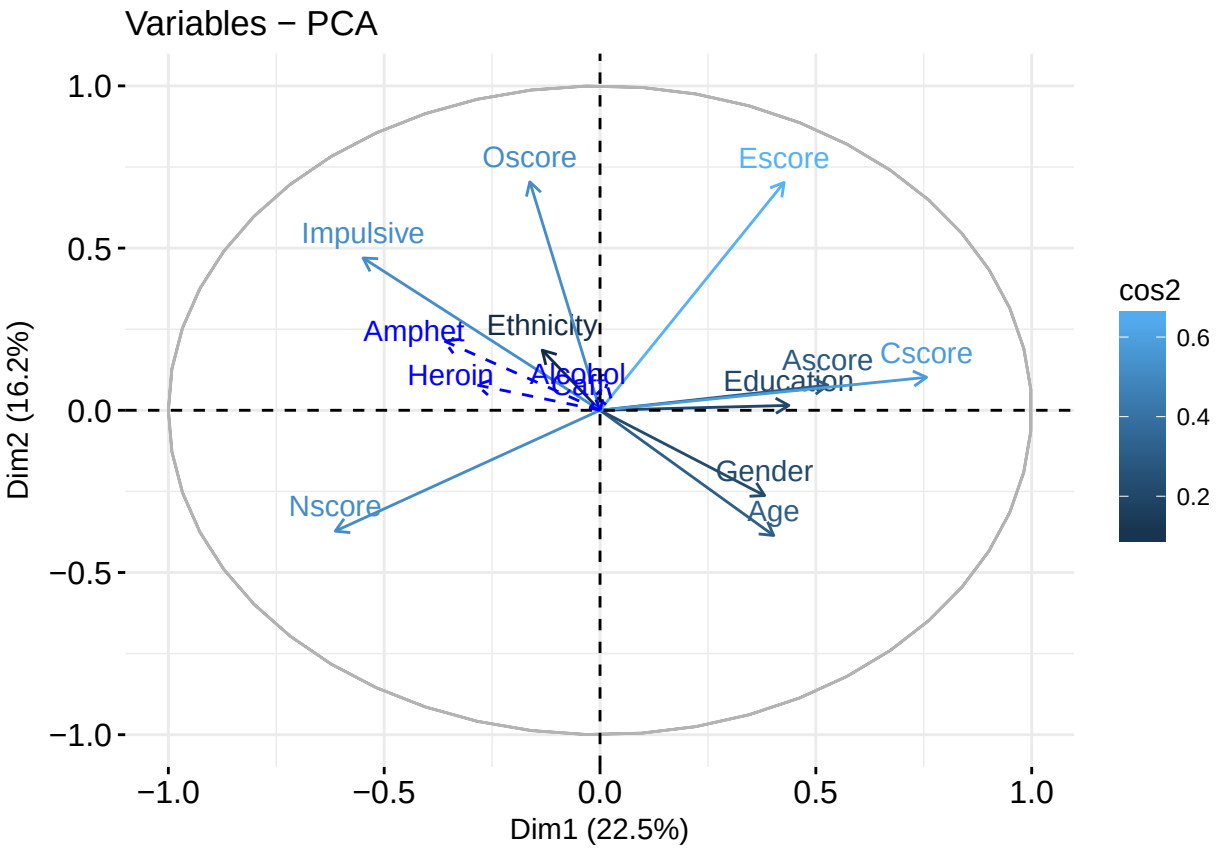
```
res.PCA$var$coord
```

```
##                Dim.1       Dim.2       Dim.3       Dim.4       Dim.5
## Age        0.4023823 -0.38586969 -0.17215160  0.33574100  0.37042767
## Gender     0.3812482 -0.26280515  0.67063729 -0.04122505 -0.12379330
## Education  0.4374614  0.01508710  0.41461348  0.58719506  0.17185707
## Ethnicity -0.1338847  0.18513441  0.33380944 -0.50326425  0.75397368
## Nscore    -0.6133393 -0.37251834  0.46889814  0.07749025 -0.09644072
## Escore     0.4264742  0.70234317 -0.04709412  0.05723709  0.02447432
## Oscore    -0.1626007  0.70412079  0.27545879  0.14693576 -0.12910404
## Ascore     0.5278620  0.07736449  0.22817156 -0.40063499 -0.41079157
## Cscore     0.7565438  0.10173240 -0.05340750 -0.05226576  0.10777093
## Impulsive -0.5488487  0.46948435  0.09230968  0.26528798  0.05714869
##                 Dim.6       Dim.7       Dim.8       Dim.9       Dim.10
## Age        0.314079829  0.52075958  0.18809079 -0.04642879  0.047410327
## Gender     0.427321564 -0.23371521  0.09800561 -0.18827644 -0.191115041
## Education -0.381856273 -0.03398094 -0.33719733  0.02507038  0.029380316
## Ethnicity -0.070372068  0.07017539 -0.06740652 -0.01079198  0.009125468
## Nscore    -0.030501595  0.03013912  0.23085322  0.22847254  0.377547858
## Escore     0.314250981 -0.17689635 -0.01452709 -0.11902942  0.417511468
## Oscore    -0.248644424  0.30071605  0.40403658 -0.17415482 -0.133453241
## Ascore     0.001536015  0.49341337 -0.24204064  0.16863389  0.059798818
## Cscore    -0.111343250 -0.22739644  0.34718290  0.45695185 -0.081523025
## Impulsive  0.439834146  0.07611410 -0.18953428  0.35363671 -0.189618485
```

c'est chiffres noous montre qu'il n'y a pratiquement pas de correlation entre les variables et les composantes principales.

cercle de correlation

```
fviz_pca_var(res.PCA,col.var = "cos2")
```



Plusieur choses sont à retenir quant à cette representation: Premierement,amphetamine et heroine d'une part, et alcool et caffeine d'autres parts sont deux à deux corrrelés donc on pourrai considéré que ces stupefiants sont consomé dans les meme dégrés et aussi la consomation dalcool ou de caffeine n'influ pas sur la consomation d'heroine ou d'amphetamine. Deuxiemement, le premier groupe de stupefiants,en occurence heroine et amphetamine dependent de l'impulsivité,l'ethnie,le genre et l'age. . . le volume de consomation evolu avec l'impulsivité et inversement avec l'age,etan donné que lage minimal des individus est de 18ans, alors on peut dire que les grands consomateurs de ces stupefiants sont les plus jeunes gens avec un caractere fort impulsif. En outre le second groupe de stupefiant depend en quelque sorte aussi du genre et de l'age mais, les differentes personalitésetudiée ici n'ont aucune influence sur la consomation de ces drogues.