Variable Transformation

Contents

Variables contained in a dataset seldom come in an analysis-ready format. Certain variables may need to be transformed before they can be used for predictive analysis. The nature and types of transformation depend on whether the variable is categorical or numeric. We will first examine transformations for categorical variables before moving on to numeric variables.

Categorical Variables

A variable containing a set of discrete levels is said to be categorical. Other labels used to characterize this type of data include qualitative variable, non-metric variable and discrete variable. Given below are some examples of categorical variables.

```
cat_demo =
  data.frame(gender = sample(c('Male','Female'),size = 10,T),
          age_group = sample( c('18-29','30-39','40-49','50-59','60 or over'),size = 10,T),
          marital_status = sample(c('married','widowed','divorced','separated','never married'),size =
          ethnicity = sample(c('White','Black or African American','Native American','Asian','Hispanic
          zip_code = factor(sample(10001:10055,10,T)))
cat_demo
```

```
##     gender  age_group marital_status                  ethnicity zip_code
## 1    Male       30-39       divorced                   Hispanic    10044
## 2    Male  60 or over        widowed Black or African American    10019
## 3  Female       30-39  never married                      White    10010
## 4    Male  60 or over  never married            Native American    10017
## 5  Female       40-49       divorced                      White    10017
## 6    Male       50-59        widowed                   Hispanic    10001
## 7  Female       18-29        married                      Other    10005
## 8  Female       18-29        widowed                   Hispanic    10036
## 9  Female       18-29       divorced            Native American    10022
## 10   Male       50-59      separated                      Other    10028
```

Note the following characteristics of the variables:
1. gender takes on two non-numeric values

2. age_group has five age categories that are ordered. The values of age are in character form
3. marital status has five non-numeric values. These values would not be expected to have an order
4. ethnicity has six non-numeric values that are unordered
5. zip_code has numeric values but the numbers are no more than identifiers of an area

With categorical variables, it is not possible to perform standard operations such as mean and standard deviation in general and barring a few exceptions (such as Tree and Tree-based models) cannot be used in their native form in a predictive model.

Data

To illustrate techniques for variable transformation, we will make use of some survey data gathered by a marketing researcher interested in examining the relationship between health consciousness and fast food. Data consists of 1. Health consciousness survey items scored on a scale of 1-7 (1 is strongly disagree, 7 is strongly agree) health1: I am concerned about my health health2: I watch what I eat health3: I usually read ingredients on food labels 2. Fastfood restaurant ratings scored on a 1-7 scale (1 is extremely bad, 7 is extremely good) mcdonalds: Rating of food at McDonalds chipotle: Rating of food at Chipotle shake_shack: Rating of food at Shake Shack 3. Fastfood restaurant Ranking (1-3 where is 1 most preferred) rank_mcdonalds: Rank of McDonads rank_chipotle: Rank of Chipotle rank_shake_shack: Rank of Shake Shack 4. Demographics of respondent gender: Male, Female age: 18-29, 30-39,40-49,50-59,60+ marital_status: married, widowed, divorced, separated, never married location (of restaurant): Manhattan, Brooklyn, Queens, New Jersey duration: time in seconds to complete the survey

```
df = read.csv('c:/myfiles/teaching/AppliedAnalytics_FM1/Slides/3_DataTidying/fastfood.csv')
str(df)
```

```
## 'data.frame':    2000 obs. of  15 variables:
##  $ id              : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ health1         : int  1 6 4 1 1 1 1 3 3 3 ...
##  $ health2         : int  1 3 3 1 1 1 1 1 2 3 ...
##  $ health3         : int  1 5 4 1 1 1 1 2 3 3 ...
##  $ mcdonalds       : int  6 5 4 1 7 1 3 1 7 7 ...
##  $ chipotle        : int  7 7 2 4 3 6 5 1 2 7 ...
##  $ shake_shack     : int  3 4 7 3 1 1 5 2 5 6 ...
##  $ gender          : chr  "Male" "Female" "Female" "Male" ...
##  $ age             : chr  "18-29" "50-59" "30-39" "40-49" ...
##  $ marital_status  : chr  "never married" "never married" "never married" "married" ...
##  $ location        : chr  "Manhattan" "New Jersey" "Brooklyn" "Brooklyn" ...
##  $ duration        : num  119 222 261 146 236 ...
##  $ rank_chipotle   : int  3 3 1 3 2 3 2 2 1 3 ...
##  $ rank_mcdonalds  : int  2 2 2 1 3 1 1 1 3 2 ...
##  $ rank_shake_shack: int  1 1 3 2 1 2 3 3 2 1 ...
```

Dummy Variables

The most common approach to prepare categorical variables for predictive models is to dummy code them. A categorical variable with k levels is represented using k-1 dummy variables, where one of the levels serves as a reference level. A dummy variable can only take on two values, 0 and 1. We will examine dummy coding and other variable transformations using fast food survey data.

In this data, age has five categories.

```
table(df$age)
```

```
##
##      18-29      30-39      40-49      50-59 60 or over
##        413        614        626        309         38
```

Since age has five levels, it can be represented using 4 (=5-1) dummy variables. In the following illustration, dummy variables are manually created. The first level is used as a reference level, so it does not have a dummy variable representing it.

```
df2 = df
df2$age30_39 = ifelse(test = df$age=='30-39',1,0)
df2$age40_49 = ifelse(test = df$age=='40-49',1,0)
df2$age50_59 = ifelse(test = df$age=='50-59',1,0)
df2$age60_or_over = ifelse(test = df$age=='60 or over',1,0)
head(df2)
```

```
##   id health1 health2 health3 mcdonalds chipotle shake_shack gender    age
## 1  1       1       1       1         6        7           3   Male  18-29
## 2  2       6       3       5         5        7           4 Female  50-59
## 3  3       4       3       4         4        2           7 Female  30-39
## 4  4       1       1       1         1        4           3   Male  40-49
## 5  5       1       1       1         7        3           1 Female  30-39
## 6  6       1       1       1         1        6           1 Female  40-49
##   marital_status   location duration rank_chipotle rank_mcdonalds
## 1  never married  Manhattan 119.3383             3              2
## 2  never married New Jersey 221.9706             3              2
## 3  never married   Brooklyn 260.7133             1              2
## 4        married   Brooklyn 146.2676             3              1
## 5  never married   Brooklyn 235.9876             2              3
## 6  never married  Manhattan 199.9097             3              1
##   rank_shake_shack age30_39 age40_49 age50_59 age60_or_over
## 1                1        0        0        0             0
## 2                1        0        0        1             0
## 3                3        1        0        0             0
## 4                2        0        1        0             0
## 5                1        1        0        0             0
## 6                2        0        1        0             0
```

```
library(tidyr); library(dplyr)
df2 %>%
  select(starts_with("age"))
```

```
##           age age30_39 age40_49 age50_59 age60_or_over
## 1       18-29        0        0        0             0
## 2       50-59        0        0        1             0
## 3       30-39        1        0        0             0
## 4       40-49        0        1        0             0
## 5       30-39        1        0        0             0
## 6       40-49        0        1        0             0
## 7       18-29        0        0        0             0
## 8       50-59        0        0        1             0
## 9       18-29        0        0        0             0
## 10      18-29        0        0        0             0
## 11      40-49        0        1        0             0
## 12      30-39        1        0        0             0
## 13      40-49        0        1        0             0
## 14      40-49        0        1        0             0
## 15      40-49        0        1        0             0
## 16      18-29        0        0        0             0
## 17      40-49        0        1        0             0
## 18      50-59        0        0        1             0
```

```
## 19        40-49          0          1          0          0
## 20        40-49          0          1          0          0
## 21        40-49          0          1          0          0
## 22        40-49          0          1          0          0
## 23        40-49          0          1          0          0
## 24        30-39          1          0          0          0
## 25        50-59          0          0          1          0
## 26        40-49          0          1          0          0
## 27        30-39          1          0          0          0
## 28        50-59          0          0          1          0
## 29        40-49          0          1          0          0
## 30        40-49          0          1          0          0
## 31        50-59          0          0          1          0
## 32        18-29          0          0          0          0
## 33        30-39          1          0          0          0
## 34        40-49          0          1          0          0
## 35        40-49          0          1          0          0
## 36        18-29          0          0          0          0
## 37        18-29          0          0          0          0
## 38        50-59          0          0          1          0
## 39        30-39          1          0          0          0
## 40        50-59          0          0          1          0
## 41        40-49          0          1          0          0
## 42        40-49          0          1          0          0
## 43        18-29          0          0          0          0
## 44        30-39          1          0          0          0
## 45        50-59          0          0          1          0
## 46        40-49          0          1          0          0
## 47        50-59          0          0          1          0
## 48        30-39          1          0          0          0
## 49        18-29          0          0          0          0
## 50        40-49          0          1          0          0
## 51        18-29          0          0          0          0
## 52        18-29          0          0          0          0
## 53        40-49          0          1          0          0
## 54        18-29          0          0          0          0
## 55        40-49          0          1          0          0
## 56        40-49          0          1          0          0
## 57        18-29          0          0          0          0
## 58        40-49          0          1          0          0
## 59        50-59          0          0          1          0
## 60        40-49          0          1          0          0
## 61        30-39          1          0          0          0
## 62        30-39          1          0          0          0
## 63        30-39          1          0          0          0
## 64        50-59          0          0          1          0
## 65        50-59          0          0          1          0
## 66        30-39          1          0          0          0
## 67        30-39          1          0          0          0
## 68        40-49          0          1          0          0
## 69        30-39          1          0          0          0
## 70        40-49          0          1          0          0
## 71        18-29          0          0          0          0
## 72        50-59          0          0          1          0
```

```
## 73        40-49         0          1          0          0
## 74        30-39         1          0          0          0
## 75        30-39         1          0          0          0
## 76        30-39         1          0          0          0
## 77        30-39         1          0          0          0
## 78        30-39         1          0          0          0
## 79        40-49         0          1          0          0
## 80        40-49         0          1          0          0
## 81        40-49         0          1          0          0
## 82        50-59         0          0          1          0
## 83     60 or over       0          0          0          1
## 84        18-29         0          0          0          0
## 85        50-59         0          0          1          0
## 86        30-39         1          0          0          0
## 87        40-49         0          1          0          0
## 88        18-29         0          0          0          0
## 89        40-49         0          1          0          0
## 90        30-39         1          0          0          0
## 91        40-49         0          1          0          0
## 92        18-29         0          0          0          0
## 93        18-29         0          0          0          0
## 94        50-59         0          0          1          0
## 95        40-49         0          1          0          0
## 96        40-49         0          1          0          0
## 97        40-49         0          1          0          0
## 98        40-49         0          1          0          0
## 99        30-39         1          0          0          0
## 100       40-49         0          1          0          0
## 101       40-49         0          1          0          0
## 102    60 or over       0          0          0          1
## 103       50-59         0          0          1          0
## 104       40-49         0          1          0          0
## 105       30-39         1          0          0          0
## 106       50-59         0          0          1          0
## 107       18-29         0          0          0          0
## 108       30-39         1          0          0          0
## 109       40-49         0          1          0          0
## 110       50-59         0          0          1          0
## 111       40-49         0          1          0          0
## 112       50-59         0          0          1          0
## 113       50-59         0          0          1          0
## 114       18-29         0          0          0          0
## 115       30-39         1          0          0          0
## 116       50-59         0          0          1          0
## 117       40-49         0          1          0          0
## 118       18-29         0          0          0          0
## 119       50-59         0          0          1          0
## 120       40-49         0          1          0          0
## 121       18-29         0          0          0          0
## 122       30-39         1          0          0          0
## 123       18-29         0          0          0          0
## 124       30-39         1          0          0          0
## 125       18-29         0          0          0          0
## 126       30-39         1          0          0          0
```

```
## 127        40-49        0        1        0        0
## 128        40-49        0        1        0        0
## 129        40-49        0        1        0        0
## 130        18-29        0        0        0        0
## 131        18-29        0        0        0        0
## 132        40-49        0        1        0        0
## 133        18-29        0        0        0        0
## 134        40-49        0        1        0        0
## 135        30-39        1        0        0        0
## 136        50-59        0        0        1        0
## 137        18-29        0        0        0        0
## 138        30-39        1        0        0        0
## 139        18-29        0        0        0        0
## 140        40-49        0        1        0        0
## 141        40-49        0        1        0        0
## 142        50-59        0        0        1        0
## 143        30-39        1        0        0        0
## 144        18-29        0        0        0        0
## 145        18-29        0        0        0        0
## 146        30-39        1        0        0        0
## 147        40-49        0        1        0        0
## 148        30-39        1        0        0        0
## 149        18-29        0        0        0        0
## 150        40-49        0        1        0        0
## 151        30-39        1        0        0        0
## 152        30-39        1        0        0        0
## 153        30-39        1        0        0        0
## 154        18-29        0        0        0        0
## 155        40-49        0        1        0        0
## 156        40-49        0        1        0        0
## 157        40-49        0        1        0        0
## 158        18-29        0        0        0        0
## 159        30-39        1        0        0        0
## 160        40-49        0        1        0        0
## 161        40-49        0        1        0        0
## 162        30-39        1        0        0        0
## 163        40-49        0        1        0        0
## 164        40-49        0        1        0        0
## 165        40-49        0        1        0        0
## 166   60 or over        0        0        0        1
## 167        18-29        0        0        0        0
## 168        40-49        0        1        0        0
## 169        30-39        1        0        0        0
## 170        40-49        0        1        0        0
## 171        40-49        0        1        0        0
## 172        30-39        1        0        0        0
## 173        18-29        0        0        0        0
## 174        18-29        0        0        0        0
## 175        40-49        0        1        0        0
## 176   60 or over        0        0        0        1
## 177        40-49        0        1        0        0
## 178        40-49        0        1        0        0
## 179        18-29        0        0        0        0
## 180        40-49        0        1        0        0
```

```
## 181        30-39       1       0       0           0
## 182        18-29       0       0       0           0
## 183        18-29       0       0       0           0
## 184        18-29       0       0       0           0
## 185        40-49       0       1       0           0
## 186        40-49       0       1       0           0
## 187        30-39       1       0       0           0
## 188        40-49       0       1       0           0
## 189        18-29       0       0       0           0
## 190        30-39       1       0       0           0
## 191        30-39       1       0       0           0
## 192        18-29       0       0       0           0
## 193        18-29       0       0       0           0
## 194  60 or over        0       0       0           1
## 195        50-59       0       0       1           0
## 196        40-49       0       1       0           0
## 197        30-39       1       0       0           0
## 198        40-49       0       1       0           0
## 199        40-49       0       1       0           0
## 200        40-49       0       1       0           0
## 201        30-39       1       0       0           0
## 202        18-29       0       0       0           0
## 203        30-39       1       0       0           0
## 204        18-29       0       0       0           0
## 205        40-49       0       1       0           0
## 206        30-39       1       0       0           0
## 207        40-49       0       1       0           0
## 208        40-49       0       1       0           0
## 209        18-29       0       0       0           0
## 210        18-29       0       0       0           0
## 211        40-49       0       1       0           0
## 212        30-39       1       0       0           0
## 213        40-49       0       1       0           0
## 214        40-49       0       1       0           0
## 215        40-49       0       1       0           0
## 216        50-59       0       0       1           0
## 217        18-29       0       0       0           0
## 218        50-59       0       0       1           0
## 219        18-29       0       0       0           0
## 220        50-59       0       0       1           0
## 221        40-49       0       1       0           0
## 222        18-29       0       0       0           0
## 223        18-29       0       0       0           0
## 224        30-39       1       0       0           0
## 225        40-49       0       1       0           0
## 226  60 or over        0       0       0           1
## 227        30-39       1       0       0           0
## 228        30-39       1       0       0           0
## 229        40-49       0       1       0           0
## 230        18-29       0       0       0           0
## 231        30-39       1       0       0           0
## 232        50-59       0       0       1           0
## 233        50-59       0       0       1           0
## 234        30-39       1       0       0           0
```

```
## 235      40-49      0      1      0      0
## 236      30-39      1      0      0      0
## 237      18-29      0      0      0      0
## 238      30-39      1      0      0      0
## 239      40-49      0      1      0      0
## 240      18-29      0      0      0      0
## 241      50-59      0      0      1      0
## 242      40-49      0      1      0      0
## 243      50-59      0      0      1      0
## 244      30-39      1      0      0      0
## 245      40-49      0      1      0      0
## 246      18-29      0      0      0      0
## 247      30-39      1      0      0      0
## 248      50-59      0      0      1      0
## 249      30-39      1      0      0      0
## 250      50-59      0      0      1      0
## 251      40-49      0      1      0      0
## 252      50-59      0      0      1      0
## 253      40-49      0      1      0      0
## 254      18-29      0      0      0      0
## 255      18-29      0      0      0      0
## 256      18-29      0      0      0      0
## 257      30-39      1      0      0      0
## 258      40-49      0      1      0      0
## 259      18-29      0      0      0      0
## 260      18-29      0      0      0      0
## 261      18-29      0      0      0      0
## 262      40-49      0      1      0      0
## 263      40-49      0      1      0      0
## 264      30-39      1      0      0      0
## 265      30-39      1      0      0      0
## 266      30-39      1      0      0      0
## 267      40-49      0      1      0      0
## 268      40-49      0      1      0      0
## 269      40-49      0      1      0      0
## 270      50-59      0      0      1      0
## 271      50-59      0      0      1      0
## 272      40-49      0      1      0      0
## 273      30-39      1      0      0      0
## 274      40-49      0      1      0      0
## 275      18-29      0      0      0      0
## 276      18-29      0      0      0      0
## 277      30-39      1      0      0      0
## 278      30-39      1      0      0      0
## 279      18-29      0      0      0      0
## 280      40-49      0      1      0      0
## 281      18-29      0      0      0      0
## 282      18-29      0      0      0      0
## 283      18-29      0      0      0      0
## 284      40-49      0      1      0      0
## 285      18-29      0      0      0      0
## 286      40-49      0      1      0      0
## 287      40-49      0      1      0      0
## 288      30-39      1      0      0      0
```

```
## 289          40-49          0          1          0                    0
## 290          18-29          0          0          0                    0
## 291          40-49          0          1          0                    0
## 292          40-49          0          1          0                    0
## 293          30-39          1          0          0                    0
## 294          18-29          0          0          0                    0
## 295          18-29          0          0          0                    0
## 296          50-59          0          0          1                    0
## 297          40-49          0          1          0                    0
## 298          30-39          1          0          0                    0
## 299          40-49          0          1          0                    0
## 300          18-29          0          0          0                    0
## 301          30-39          1          0          0                    0
## 302          40-49          0          1          0                    0
## 303          18-29          0          0          0                    0
## 304          30-39          1          0          0                    0
## 305          40-49          0          1          0                    0
## 306          50-59          0          0          1                    0
## 307          30-39          1          0          0                    0
## 308          40-49          0          1          0                    0
## 309          30-39          1          0          0                    0
## 310          30-39          1          0          0                    0
## 311          50-59          0          0          1                    0
## 312          30-39          1          0          0                    0
## 313          30-39          1          0          0                    0
## 314          40-49          0          1          0                    0
## 315          18-29          0          0          0                    0
## 316          30-39          1          0          0                    0
## 317          50-59          0          0          1                    0
## 318          50-59          0          0          1                    0
## 319          18-29          0          0          0                    0
## 320          18-29          0          0          0                    0
## 321          18-29          0          0          0                    0
## 322          40-49          0          1          0                    0
## 323          50-59          0          0          1                    0
## 324          40-49          0          1          0                    0
## 325          40-49          0          1          0                    0
## 326          30-39          1          0          0                    0
## 327          30-39          1          0          0                    0
## 328          30-39          1          0          0                    0
## 329          40-49          0          1          0                    0
## 330          40-49          0          1          0                    0
## 331          40-49          0          1          0                    0
## 332          40-49          0          1          0                    0
## 333          30-39          1          0          0                    0
## 334          30-39          1          0          0                    0
## 335          30-39          1          0          0                    0
## 336          18-29          0          0          0                    0
## 337          40-49          0          1          0                    0
## 338          30-39          1          0          0                    0
## 339          40-49          0          1          0                    0
## 340          30-39          1          0          0                    0
## 341          18-29          0          0          0                    0
## 342          30-39          1          0          0                    0
```

```
## 343         18-29        0        0        0            0
## 344  60 or over         0        0        0            1
## 345         40-49        0        1        0            0
## 346         30-39        1        0        0            0
## 347         40-49        0        1        0            0
## 348         40-49        0        1        0            0
## 349         18-29        0        0        0            0
## 350         40-49        0        1        0            0
## 351         40-49        0        1        0            0
## 352         50-59        0        0        1            0
## 353         40-49        0        1        0            0
## 354         30-39        1        0        0            0
## 355         18-29        0        0        0            0
## 356         50-59        0        0        1            0
## 357         40-49        0        1        0            0
## 358         30-39        1        0        0            0
## 359         18-29        0        0        0            0
## 360         30-39        1        0        0            0
## 361         30-39        1        0        0            0
## 362         30-39        1        0        0            0
## 363         30-39        1        0        0            0
## 364         30-39        1        0        0            0
## 365         30-39        1        0        0            0
## 366         40-49        0        1        0            0
## 367         18-29        0        0        0            0
## 368         40-49        0        1        0            0
## 369         50-59        0        0        1            0
## 370         18-29        0        0        0            0
## 371         40-49        0        1        0            0
## 372         18-29        0        0        0            0
## 373         30-39        1        0        0            0
## 374         40-49        0        1        0            0
## 375         30-39        1        0        0            0
## 376         18-29        0        0        0            0
## 377         40-49        0        1        0            0
## 378         50-59        0        0        1            0
## 379         30-39        1        0        0            0
## 380         50-59        0        0        1            0
## 381         50-59        0        0        1            0
## 382         40-49        0        1        0            0
## 383         50-59        0        0        1            0
## 384         18-29        0        0        0            0
## 385         30-39        1        0        0            0
## 386         18-29        0        0        0            0
## 387         40-49        0        1        0            0
## 388         18-29        0        0        0            0
## 389         30-39        1        0        0            0
## 390         18-29        0        0        0            0
## 391         40-49        0        1        0            0
## 392         18-29        0        0        0            0
## 393         30-39        1        0        0            0
## 394         40-49        0        1        0            0
## 395         18-29        0        0        0            0
## 396         40-49        0        1        0            0
```

```
## 397        40-49      0      1      0      0
## 398        40-49      0      1      0      0
## 399        30-39      1      0      0      0
## 400        30-39      1      0      0      0
## 401        30-39      1      0      0      0
## 402        50-59      0      0      1      0
## 403        30-39      1      0      0      0
## 404  60 or over       0      0      0      1
## 405        18-29      0      0      0      0
## 406        40-49      0      1      0      0
## 407        30-39      1      0      0      0
## 408        18-29      0      0      0      0
## 409        30-39      1      0      0      0
## 410        40-49      0      1      0      0
## 411        30-39      1      0      0      0
## 412        50-59      0      0      1      0
## 413        50-59      0      0      1      0
## 414        30-39      1      0      0      0
## 415        40-49      0      1      0      0
## 416        40-49      0      1      0      0
## 417        40-49      0      1      0      0
## 418        30-39      1      0      0      0
## 419        18-29      0      0      0      0
## 420        30-39      1      0      0      0
## 421        50-59      0      0      1      0
## 422        50-59      0      0      1      0
## 423        18-29      0      0      0      0
## 424        30-39      1      0      0      0
## 425        18-29      0      0      0      0
## 426        18-29      0      0      0      0
## 427  60 or over       0      0      0      1
## 428        40-49      0      1      0      0
## 429        18-29      0      0      0      0
## 430        40-49      0      1      0      0
## 431        50-59      0      0      1      0
## 432        30-39      1      0      0      0
## 433        40-49      0      1      0      0
## 434        40-49      0      1      0      0
## 435        40-49      0      1      0      0
## 436        40-49      0      1      0      0
## 437        30-39      1      0      0      0
## 438        40-49      0      1      0      0
## 439        40-49      0      1      0      0
## 440        30-39      1      0      0      0
## 441        40-49      0      1      0      0
## 442        40-49      0      1      0      0
## 443        18-29      0      0      0      0
## 444  60 or over       0      0      0      1
## 445        18-29      0      0      0      0
## 446        40-49      0      1      0      0
## 447        40-49      0      1      0      0
## 448        50-59      0      0      1      0
## 449        18-29      0      0      0      0
## 450        40-49      0      1      0      0
```

```
## 451        40-49       0       1       0           0
## 452        30-39       1       0       0           0
## 453        30-39       1       0       0           0
## 454        50-59       0       0       1           0
## 455        18-29       0       0       0           0
## 456        40-49       0       1       0           0
## 457        30-39       1       0       0           0
## 458        30-39       1       0       0           0
## 459        40-49       0       1       0           0
## 460        30-39       1       0       0           0
## 461        50-59       0       0       1           0
## 462        18-29       0       0       0           0
## 463        30-39       1       0       0           0
## 464        40-49       0       1       0           0
## 465        40-49       0       1       0           0
## 466        30-39       1       0       0           0
## 467        40-49       0       1       0           0
## 468        40-49       0       1       0           0
## 469        50-59       0       0       1           0
## 470        40-49       0       1       0           0
## 471        18-29       0       0       0           0
## 472        50-59       0       0       1           0
## 473        50-59       0       0       1           0
## 474        40-49       0       1       0           0
## 475        30-39       1       0       0           0
## 476        40-49       0       1       0           0
## 477        40-49       0       1       0           0
## 478        50-59       0       0       1           0
## 479        18-29       0       0       0           0
## 480        40-49       0       1       0           0
## 481        40-49       0       1       0           0
## 482        40-49       0       1       0           0
## 483        30-39       1       0       0           0
## 484        40-49       0       1       0           0
## 485        30-39       1       0       0           0
## 486        30-39       1       0       0           0
## 487        18-29       0       0       0           0
## 488        18-29       0       0       0           0
## 489        40-49       0       1       0           0
## 490        18-29       0       0       0           0
## 491        18-29       0       0       0           0
## 492        50-59       0       0       1           0
## 493        30-39       1       0       0           0
## 494        18-29       0       0       0           0
## 495        30-39       1       0       0           0
## 496        40-49       0       1       0           0
## 497        30-39       1       0       0           0
## 498        30-39       1       0       0           0
## 499        40-49       0       1       0           0
## 500        40-49       0       1       0           0
## 501        30-39       1       0       0           0
## 502        30-39       1       0       0           0
## 503        30-39       1       0       0           0
## 504        18-29       0       0       0           0
```

```
## 505    40-49    0    1    0    0
## 506    18-29    0    0    0    0
## 507    30-39    1    0    0    0
## 508    30-39    1    0    0    0
## 509    30-39    1    0    0    0
## 510    50-59    0    0    1    0
## 511    18-29    0    0    0    0
## 512    30-39    1    0    0    0
## 513    30-39    1    0    0    0
## 514    40-49    0    1    0    0
## 515    40-49    0    1    0    0
## 516    50-59    0    0    1    0
## 517    30-39    1    0    0    0
## 518    30-39    1    0    0    0
## 519    18-29    0    0    0    0
## 520    40-49    0    1    0    0
## 521    30-39    1    0    0    0
## 522    40-49    0    1    0    0
## 523    18-29    0    0    0    0
## 524    18-29    0    0    0    0
## 525    30-39    1    0    0    0
## 526    50-59    0    0    1    0
## 527    40-49    0    1    0    0
## 528    40-49    0    1    0    0
## 529    40-49    0    1    0    0
## 530    30-39    1    0    0    0
## 531    18-29    0    0    0    0
## 532    40-49    0    1    0    0
## 533    18-29    0    0    0    0
## 534    30-39    1    0    0    0
## 535    18-29    0    0    0    0
## 536    30-39    1    0    0    0
## 537    30-39    1    0    0    0
## 538    30-39    1    0    0    0
## 539    50-59    0    0    1    0
## 540    50-59    0    0    1    0
## 541    30-39    1    0    0    0
## 542    30-39    1    0    0    0
## 543    40-49    0    1    0    0
## 544    30-39    1    0    0    0
## 545    30-39    1    0    0    0
## 546    30-39    1    0    0    0
## 547    30-39    1    0    0    0
## 548    40-49    0    1    0    0
## 549    50-59    0    0    1    0
## 550    18-29    0    0    0    0
## 551    18-29    0    0    0    0
## 552    30-39    1    0    0    0
## 553    30-39    1    0    0    0
## 554    30-39    1    0    0    0
## 555    18-29    0    0    0    0
## 556    40-49    0    1    0    0
## 557    18-29    0    0    0    0
## 558    40-49    0    1    0    0
```

```
## 559      40-49       0       1       0           0
## 560      40-49       0       1       0           0
## 561      50-59       0       0       1           0
## 562      30-39       1       0       0           0
## 563      50-59       0       0       1           0
## 564      40-49       0       1       0           0
## 565      50-59       0       0       1           0
## 566      30-39       1       0       0           0
## 567      50-59       0       0       1           0
## 568      18-29       0       0       0           0
## 569      18-29       0       0       0           0
## 570      30-39       1       0       0           0
## 571      50-59       0       0       1           0
## 572      30-39       1       0       0           0
## 573      50-59       0       0       1           0
## 574      40-49       0       1       0           0
## 575      30-39       1       0       0           0
## 576      30-39       1       0       0           0
## 577      18-29       0       0       0           0
## 578      30-39       1       0       0           0
## 579      30-39       1       0       0           0
## 580      50-59       0       0       1           0
## 581      40-49       0       1       0           0
## 582      50-59       0       0       1           0
## 583      30-39       1       0       0           0
## 584  60 or over      0       0       0           1
## 585      30-39       1       0       0           0
## 586      50-59       0       0       1           0
## 587      30-39       1       0       0           0
## 588      40-49       0       1       0           0
## 589      30-39       1       0       0           0
## 590      40-49       0       1       0           0
## 591      40-49       0       1       0           0
## 592      40-49       0       1       0           0
## 593      18-29       0       0       0           0
## 594      40-49       0       1       0           0
## 595      40-49       0       1       0           0
## 596      50-59       0       0       1           0
## 597      40-49       0       1       0           0
## 598      18-29       0       0       0           0
## 599      40-49       0       1       0           0
## 600      40-49       0       1       0           0
## 601      30-39       1       0       0           0
## 602      40-49       0       1       0           0
## 603      50-59       0       0       1           0
## 604      18-29       0       0       0           0
## 605      50-59       0       0       1           0
## 606      40-49       0       1       0           0
## 607      30-39       1       0       0           0
## 608      50-59       0       0       1           0
## 609      18-29       0       0       0           0
## 610      30-39       1       0       0           0
## 611      40-49       0       1       0           0
## 612      18-29       0       0       0           0
```

```
## 613          40-49          0          1          0                    0
## 614          30-39          1          0          0                    0
## 615          40-49          0          1          0                    0
## 616          40-49          0          1          0                    0
## 617          30-39          1          0          0                    0
## 618          30-39          1          0          0                    0
## 619          40-49          0          1          0                    0
## 620          40-49          0          1          0                    0
## 621          18-29          0          0          0                    0
## 622          40-49          0          1          0                    0
## 623          50-59          0          0          1                    0
## 624          30-39          1          0          0                    0
## 625          40-49          0          1          0                    0
## 626          18-29          0          0          0                    0
## 627          30-39          1          0          0                    0
## 628          40-49          0          1          0                    0
## 629          30-39          1          0          0                    0
## 630          40-49          0          1          0                    0
## 631          40-49          0          1          0                    0
## 632          30-39          1          0          0                    0
## 633          30-39          1          0          0                    0
## 634          30-39          1          0          0                    0
## 635          30-39          1          0          0                    0
## 636          50-59          0          0          1                    0
## 637          50-59          0          0          1                    0
## 638          40-49          0          1          0                    0
## 639          18-29          0          0          0                    0
## 640          40-49          0          1          0                    0
## 641          30-39          1          0          0                    0
## 642          40-49          0          1          0                    0
## 643          40-49          0          1          0                    0
## 644          30-39          1          0          0                    0
## 645          30-39          1          0          0                    0
## 646          40-49          0          1          0                    0
## 647          18-29          0          0          0                    0
## 648          30-39          1          0          0                    0
## 649          40-49          0          1          0                    0
## 650          50-59          0          0          1                    0
## 651          18-29          0          0          0                    0
## 652          30-39          1          0          0                    0
## 653          18-29          0          0          0                    0
## 654          40-49          0          1          0                    0
## 655          50-59          0          0          1                    0
## 656          50-59          0          0          1                    0
## 657          18-29          0          0          0                    0
## 658          30-39          1          0          0                    0
## 659          18-29          0          0          0                    0
## 660          40-49          0          1          0                    0
## 661          30-39          1          0          0                    0
## 662          18-29          0          0          0                    0
## 663          30-39          1          0          0                    0
## 664          40-49          0          1          0                    0
## 665          50-59          0          0          1                    0
## 666          40-49          0          1          0                    0
```

```
## 667        40-49        0        1        0        0
## 668        18-29        0        0        0        0
## 669        40-49        0        1        0        0
## 670        30-39        1        0        0        0
## 671        30-39        1        0        0        0
## 672        40-49        0        1        0        0
## 673        50-59        0        0        1        0
## 674        40-49        0        1        0        0
## 675        30-39        1        0        0        0
## 676        30-39        1        0        0        0
## 677        30-39        1        0        0        0
## 678        40-49        0        1        0        0
## 679        50-59        0        0        1        0
## 680        30-39        1        0        0        0
## 681        40-49        0        1        0        0
## 682        50-59        0        0        1        0
## 683        40-49        0        1        0        0
## 684        30-39        1        0        0        0
## 685        30-39        1        0        0        0
## 686        50-59        0        0        1        0
## 687        40-49        0        1        0        0
## 688        18-29        0        0        0        0
## 689        30-39        1        0        0        0
## 690        30-39        1        0        0        0
## 691        40-49        0        1        0        0
## 692        30-39        1        0        0        0
## 693        30-39        1        0        0        0
## 694        30-39        1        0        0        0
## 695        30-39        1        0        0        0
## 696        40-49        0        1        0        0
## 697        18-29        0        0        0        0
## 698        40-49        0        1        0        0
## 699        30-39        1        0        0        0
## 700        40-49        0        1        0        0
## 701        40-49        0        1        0        0
## 702        40-49        0        1        0        0
## 703        30-39        1        0        0        0
## 704        18-29        0        0        0        0
## 705        18-29        0        0        0        0
## 706        50-59        0        0        1        0
## 707        18-29        0        0        0        0
## 708        30-39        1        0        0        0
## 709        50-59        0        0        1        0
## 710        30-39        1        0        0        0
## 711        30-39        1        0        0        0
## 712        30-39        1        0        0        0
## 713        40-49        0        1        0        0
## 714        18-29        0        0        0        0
## 715        40-49        0        1        0        0
## 716        18-29        0        0        0        0
## 717        30-39        1        0        0        0
## 718        18-29        0        0        0        0
## 719        40-49        0        1        0        0
## 720        40-49        0        1        0        0
```

```
## 721    18-29    0    0    0    0
## 722    40-49    0    1    0    0
## 723    40-49    0    1    0    0
## 724    30-39    1    0    0    0
## 725    40-49    0    1    0    0
## 726    40-49    0    1    0    0
## 727    40-49    0    1    0    0
## 728    18-29    0    0    0    0
## 729    50-59    0    0    1    0
## 730    50-59    0    0    1    0
## 731    40-49    0    1    0    0
## 732    30-39    1    0    0    0
## 733    30-39    1    0    0    0
## 734    40-49    0    1    0    0
## 735    18-29    0    0    0    0
## 736    50-59    0    0    1    0
## 737    50-59    0    0    1    0
## 738    30-39    1    0    0    0
## 739    30-39    1    0    0    0
## 740    18-29    0    0    0    0
## 741    30-39    1    0    0    0
## 742    18-29    0    0    0    0
## 743    50-59    0    0    1    0
## 744    40-49    0    1    0    0
## 745    30-39    1    0    0    0
## 746    40-49    0    1    0    0
## 747    40-49    0    1    0    0
## 748    30-39    1    0    0    0
## 749    50-59    0    0    1    0
## 750    30-39    1    0    0    0
## 751    50-59    0    0    1    0
## 752    18-29    0    0    0    0
## 753    40-49    0    1    0    0
## 754    40-49    0    1    0    0
## 755    18-29    0    0    0    0
## 756    40-49    0    1    0    0
## 757    30-39    1    0    0    0
## 758    18-29    0    0    0    0
## 759    40-49    0    1    0    0
## 760    40-49    0    1    0    0
## 761    18-29    0    0    0    0
## 762    18-29    0    0    0    0
## 763    40-49    0    1    0    0
## 764    30-39    1    0    0    0
## 765    30-39    1    0    0    0
## 766    30-39    1    0    0    0
## 767    50-59    0    0    1    0
## 768    30-39    1    0    0    0
## 769    18-29    0    0    0    0
## 770    18-29    0    0    0    0
## 771    40-49    0    1    0    0
## 772    18-29    0    0    0    0
## 773    18-29    0    0    0    0
## 774    40-49    0    1    0    0
```

```
## 775      30-39      1      0      0      0
## 776      30-39      1      0      0      0
## 777      50-59      0      0      1      0
## 778      40-49      0      1      0      0
## 779      40-49      0      1      0      0
## 780      30-39      1      0      0      0
## 781      18-29      0      0      0      0
## 782      40-49      0      1      0      0
## 783      18-29      0      0      0      0
## 784      50-59      0      0      1      0
## 785      40-49      0      1      0      0
## 786      40-49      0      1      0      0
## 787      40-49      0      1      0      0
## 788      40-49      0      1      0      0
## 789      40-49      0      1      0      0
## 790      18-29      0      0      0      0
## 791      18-29      0      0      0      0
## 792      30-39      1      0      0      0
## 793      50-59      0      0      1      0
## 794      30-39      1      0      0      0
## 795      40-49      0      1      0      0
## 796      18-29      0      0      0      0
## 797      40-49      0      1      0      0
## 798      50-59      0      0      1      0
## 799      30-39      1      0      0      0
## 800      30-39      1      0      0      0
## 801      40-49      0      1      0      0
## 802      40-49      0      1      0      0
## 803      18-29      0      0      0      0
## 804      18-29      0      0      0      0
## 805      18-29      0      0      0      0
## 806      30-39      1      0      0      0
## 807      50-59      0      0      1      0
## 808      50-59      0      0      1      0
## 809      30-39      1      0      0      0
## 810      30-39      1      0      0      0
## 811      30-39      1      0      0      0
## 812      40-49      0      1      0      0
## 813      30-39      1      0      0      0
## 814      30-39      1      0      0      0
## 815  60 or over     0      0      0      1
## 816      30-39      1      0      0      0
## 817      30-39      1      0      0      0
## 818      18-29      0      0      0      0
## 819      30-39      1      0      0      0
## 820      40-49      0      1      0      0
## 821      40-49      0      1      0      0
## 822      18-29      0      0      0      0
## 823      18-29      0      0      0      0
## 824      50-59      0      0      1      0
## 825      40-49      0      1      0      0
## 826      18-29      0      0      0      0
## 827      30-39      1      0      0      0
## 828      40-49      0      1      0      0
```

```
## 829         30-39        1        0        0        0
## 830         40-49        0        1        0        0
## 831         30-39        1        0        0        0
## 832         30-39        1        0        0        0
## 833         18-29        0        0        0        0
## 834         18-29        0        0        0        0
## 835         40-49        0        1        0        0
## 836         40-49        0        1        0        0
## 837         40-49        0        1        0        0
## 838         30-39        1        0        0        0
## 839         50-59        0        0        1        0
## 840         50-59        0        0        1        0
## 841         50-59        0        0        1        0
## 842         40-49        0        1        0        0
## 843         30-39        1        0        0        0
## 844         50-59        0        0        1        0
## 845         30-39        1        0        0        0
## 846         40-49        0        1        0        0
## 847         40-49        0        1        0        0
## 848         50-59        0        0        1        0
## 849         18-29        0        0        0        0
## 850         40-49        0        1        0        0
## 851         50-59        0        0        1        0
## 852         18-29        0        0        0        0
## 853         30-39        1        0        0        0
## 854         30-39        1        0        0        0
## 855         40-49        0        1        0        0
## 856         18-29        0        0        0        0
## 857         30-39        1        0        0        0
## 858         40-49        0        1        0        0
## 859         40-49        0        1        0        0
## 860         30-39        1        0        0        0
## 861         50-59        0        0        1        0
## 862         40-49        0        1        0        0
## 863         18-29        0        0        0        0
## 864         30-39        1        0        0        0
## 865         30-39        1        0        0        0
## 866         18-29        0        0        0        0
## 867         50-59        0        0        1        0
## 868         18-29        0        0        0        0
## 869         30-39        1        0        0        0
## 870         18-29        0        0        0        0
## 871         30-39        1        0        0        0
## 872         30-39        1        0        0        0
## 873         30-39        1        0        0        0
## 874         30-39        1        0        0        0
## 875         30-39        1        0        0        0
## 876         50-59        0        0        1        0
## 877         50-59        0        0        1        0
## 878         50-59        0        0        1        0
## 879         40-49        0        1        0        0
## 880         40-49        0        1        0        0
## 881   60 or over        0        0        0        1
## 882         40-49        0        1        0        0
```

```
## 883     40-49       0       1       0           0
## 884     40-49       0       1       0           0
## 885     40-49       0       1       0           0
## 886     30-39       1       0       0           0
## 887     40-49       0       1       0           0
## 888     40-49       0       1       0           0
## 889     30-39       1       0       0           0
## 890     40-49       0       1       0           0
## 891     40-49       0       1       0           0
## 892     50-59       0       0       1           0
## 893     18-29       0       0       0           0
## 894     18-29       0       0       0           0
## 895     18-29       0       0       0           0
## 896     50-59       0       0       1           0
## 897     40-49       0       1       0           0
## 898     30-39       1       0       0           0
## 899     30-39       1       0       0           0
## 900  60 or over     0       0       0           1
## 901     50-59       0       0       1           0
## 902     18-29       0       0       0           0
## 903     30-39       1       0       0           0
## 904     30-39       1       0       0           0
## 905     40-49       0       1       0           0
## 906     30-39       1       0       0           0
## 907     40-49       0       1       0           0
## 908     18-29       0       0       0           0
## 909     18-29       0       0       0           0
## 910     50-59       0       0       1           0
## 911     30-39       1       0       0           0
## 912     40-49       0       1       0           0
## 913     30-39       1       0       0           0
## 914     50-59       0       0       1           0
## 915     40-49       0       1       0           0
## 916     30-39       1       0       0           0
## 917     50-59       0       0       1           0
## 918     40-49       0       1       0           0
## 919     30-39       1       0       0           0
## 920     40-49       0       1       0           0
## 921     50-59       0       0       1           0
## 922     40-49       0       1       0           0
## 923     40-49       0       1       0           0
## 924     50-59       0       0       1           0
## 925     18-29       0       0       0           0
## 926     30-39       1       0       0           0
## 927     18-29       0       0       0           0
## 928     18-29       0       0       0           0
## 929     30-39       1       0       0           0
## 930     30-39       1       0       0           0
## 931     30-39       1       0       0           0
## 932     40-49       0       1       0           0
## 933     18-29       0       0       0           0
## 934     30-39       1       0       0           0
## 935     40-49       0       1       0           0
## 936     40-49       0       1       0           0
```

```
## 937       18-29       0       0       0       0
## 938       30-39       1       0       0       0
## 939       40-49       0       1       0       0
## 940       40-49       0       1       0       0
## 941       18-29       0       0       0       0
## 942       30-39       1       0       0       0
## 943       40-49       0       1       0       0
## 944       30-39       1       0       0       0
## 945       30-39       1       0       0       0
## 946       30-39       1       0       0       0
## 947       50-59       0       0       1       0
## 948       50-59       0       0       1       0
## 949       50-59       0       0       1       0
## 950       40-49       0       1       0       0
## 951       30-39       1       0       0       0
## 952       18-29       0       0       0       0
## 953       30-39       1       0       0       0
## 954       40-49       0       1       0       0
## 955       50-59       0       0       1       0
## 956       18-29       0       0       0       0
## 957       30-39       1       0       0       0
## 958       40-49       0       1       0       0
## 959       18-29       0       0       0       0
## 960       40-49       0       1       0       0
## 961       50-59       0       0       1       0
## 962       18-29       0       0       0       0
## 963       18-29       0       0       0       0
## 964       40-49       0       1       0       0
## 965       30-39       1       0       0       0
## 966  60 or over       0       0       0       1
## 967  60 or over       0       0       0       1
## 968       18-29       0       0       0       0
## 969       40-49       0       1       0       0
## 970       50-59       0       0       1       0
## 971       50-59       0       0       1       0
## 972       18-29       0       0       0       0
## 973       30-39       1       0       0       0
## 974       40-49       0       1       0       0
## 975       30-39       1       0       0       0
## 976       40-49       0       1       0       0
## 977       30-39       1       0       0       0
## 978       50-59       0       0       1       0
## 979       30-39       1       0       0       0
## 980       50-59       0       0       1       0
## 981       50-59       0       0       1       0
## 982       18-29       0       0       0       0
## 983       50-59       0       0       1       0
## 984       18-29       0       0       0       0
## 985       30-39       1       0       0       0
## 986       18-29       0       0       0       0
## 987       40-49       0       1       0       0
## 988       50-59       0       0       1       0
## 989       30-39       1       0       0       0
## 990       18-29       0       0       0       0
```

```
## 991    18-29    0    0    0    0
## 992    40-49    0    1    0    0
## 993    30-39    1    0    0    0
## 994    30-39    1    0    0    0
## 995    50-59    0    0    1    0
## 996    30-39    1    0    0    0
## 997    30-39    1    0    0    0
## 998    30-39    1    0    0    0
## 999    40-49    0    1    0    0
## 1000   40-49    0    1    0    0
## 1001   18-29    0    0    0    0
## 1002   30-39    1    0    0    0
## 1003   18-29    0    0    0    0
## 1004   40-49    0    1    0    0
## 1005   50-59    0    0    1    0
## 1006   30-39    1    0    0    0
## 1007   50-59    0    0    1    0
## 1008   40-49    0    1    0    0
## 1009   50-59    0    0    1    0
## 1010   18-29    0    0    0    0
## 1011   40-49    0    1    0    0
## 1012   30-39    1    0    0    0
## 1013   40-49    0    1    0    0
## 1014   30-39    1    0    0    0
## 1015   50-59    0    0    1    0
## 1016   18-29    0    0    0    0
## 1017   18-29    0    0    0    0
## 1018   30-39    1    0    0    0
## 1019   40-49    0    1    0    0
## 1020   18-29    0    0    0    0
## 1021   50-59    0    0    1    0
## 1022   18-29    0    0    0    0
## 1023   40-49    0    1    0    0
## 1024   18-29    0    0    0    0
## 1025   50-59    0    0    1    0
## 1026   30-39    1    0    0    0
## 1027   30-39    1    0    0    0
## 1028   30-39    1    0    0    0
## 1029   40-49    0    1    0    0
## 1030   40-49    0    1    0    0
## 1031   30-39    1    0    0    0
## 1032   50-59    0    0    1    0
## 1033   30-39    1    0    0    0
## 1034   50-59    0    0    1    0
## 1035   40-49    0    1    0    0
## 1036   30-39    1    0    0    0
## 1037   40-49    0    1    0    0
## 1038   18-29    0    0    0    0
## 1039   30-39    1    0    0    0
## 1040   30-39    1    0    0    0
## 1041   40-49    0    1    0    0
## 1042   30-39    1    0    0    0
## 1043   40-49    0    1    0    0
## 1044   30-39    1    0    0    0
```

```
## 1045    40-49    0    1    0    0
## 1046    40-49    0    1    0    0
## 1047    30-39    1    0    0    0
## 1048    40-49    0    1    0    0
## 1049    40-49    0    1    0    0
## 1050    30-39    1    0    0    0
## 1051    30-39    1    0    0    0
## 1052    50-59    0    0    1    0
## 1053    18-29    0    0    0    0
## 1054    18-29    0    0    0    0
## 1055    40-49    0    1    0    0
## 1056    40-49    0    1    0    0
## 1057    30-39    1    0    0    0
## 1058    18-29    0    0    0    0
## 1059    18-29    0    0    0    0
## 1060    40-49    0    1    0    0
## 1061    40-49    0    1    0    0
## 1062    30-39    1    0    0    0
## 1063    40-49    0    1    0    0
## 1064    18-29    0    0    0    0
## 1065    18-29    0    0    0    0
## 1066    50-59    0    0    1    0
## 1067    18-29    0    0    0    0
## 1068    50-59    0    0    1    0
## 1069    30-39    1    0    0    0
## 1070    50-59    0    0    1    0
## 1071    40-49    0    1    0    0
## 1072    18-29    0    0    0    0
## 1073    30-39    1    0    0    0
## 1074    50-59    0    0    1    0
## 1075    40-49    0    1    0    0
## 1076    40-49    0    1    0    0
## 1077    40-49    0    1    0    0
## 1078    30-39    1    0    0    0
## 1079    18-29    0    0    0    0
## 1080    30-39    1    0    0    0
## 1081    18-29    0    0    0    0
## 1082    30-39    1    0    0    0
## 1083    30-39    1    0    0    0
## 1084    18-29    0    0    0    0
## 1085    18-29    0    0    0    0
## 1086    40-49    0    1    0    0
## 1087    40-49    0    1    0    0
## 1088    40-49    0    1    0    0
## 1089    30-39    1    0    0    0
## 1090    30-39    1    0    0    0
## 1091    50-59    0    0    1    0
## 1092    40-49    0    1    0    0
## 1093    18-29    0    0    0    0
## 1094    50-59    0    0    1    0
## 1095    50-59    0    0    1    0
## 1096    30-39    1    0    0    0
## 1097    18-29    0    0    0    0
## 1098    18-29    0    0    0    0
```

```
## 1099      40-49          0          1          0          0
## 1100      50-59          0          0          1          0
## 1101      40-49          0          1          0          0
## 1102      18-29          0          0          0          0
## 1103      30-39          1          0          0          0
## 1104      50-59          0          0          1          0
## 1105      40-49          0          1          0          0
## 1106      30-39          1          0          0          0
## 1107      18-29          0          0          0          0
## 1108      18-29          0          0          0          0
## 1109      18-29          0          0          0          0
## 1110      40-49          0          1          0          0
## 1111      30-39          1          0          0          0
## 1112 60 or over          0          0          0          1
## 1113      30-39          1          0          0          0
## 1114      18-29          0          0          0          0
## 1115      40-49          0          1          0          0
## 1116      18-29          0          0          0          0
## 1117      30-39          1          0          0          0
## 1118      18-29          0          0          0          0
## 1119      18-29          0          0          0          0
## 1120      40-49          0          1          0          0
## 1121      50-59          0          0          1          0
## 1122      40-49          0          1          0          0
## 1123      18-29          0          0          0          0
## 1124      18-29          0          0          0          0
## 1125      30-39          1          0          0          0
## 1126      40-49          0          1          0          0
## 1127      30-39          1          0          0          0
## 1128      18-29          0          0          0          0
## 1129      30-39          1          0          0          0
## 1130      40-49          0          1          0          0
## 1131      30-39          1          0          0          0
## 1132      50-59          0          0          1          0
## 1133      30-39          1          0          0          0
## 1134      40-49          0          1          0          0
## 1135      40-49          0          1          0          0
## 1136      18-29          0          0          0          0
## 1137      40-49          0          1          0          0
## 1138      30-39          1          0          0          0
## 1139      40-49          0          1          0          0
## 1140      18-29          0          0          0          0
## 1141      30-39          1          0          0          0
## 1142      40-49          0          1          0          0
## 1143      30-39          1          0          0          0
## 1144      30-39          1          0          0          0
## 1145      40-49          0          1          0          0
## 1146      30-39          1          0          0          0
## 1147      40-49          0          1          0          0
## 1148      40-49          0          1          0          0
## 1149      30-39          1          0          0          0
## 1150      18-29          0          0          0          0
## 1151      50-59          0          0          1          0
## 1152      40-49          0          1          0          0
```

```
## 1153   18-29    0    0    0    0
## 1154   30-39    1    0    0    0
## 1155   50-59    0    0    1    0
## 1156   30-39    1    0    0    0
## 1157   50-59    0    0    1    0
## 1158   18-29    0    0    0    0
## 1159   30-39    1    0    0    0
## 1160   30-39    1    0    0    0
## 1161   40-49    0    1    0    0
## 1162   40-49    0    1    0    0
## 1163   30-39    1    0    0    0
## 1164   40-49    0    1    0    0
## 1165   18-29    0    0    0    0
## 1166   40-49    0    1    0    0
## 1167   30-39    1    0    0    0
## 1168   50-59    0    0    1    0
## 1169   18-29    0    0    0    0
## 1170   40-49    0    1    0    0
## 1171   30-39    1    0    0    0
## 1172   40-49    0    1    0    0
## 1173   30-39    1    0    0    0
## 1174   18-29    0    0    0    0
## 1175   40-49    0    1    0    0
## 1176   18-29    0    0    0    0
## 1177   50-59    0    0    1    0
## 1178   40-49    0    1    0    0
## 1179   30-39    1    0    0    0
## 1180   40-49    0    1    0    0
## 1181   50-59    0    0    1    0
## 1182   30-39    1    0    0    0
## 1183   18-29    0    0    0    0
## 1184   40-49    0    1    0    0
## 1185   40-49    0    1    0    0
## 1186   50-59    0    0    1    0
## 1187   50-59    0    0    1    0
## 1188   30-39    1    0    0    0
## 1189   50-59    0    0    1    0
## 1190   30-39    1    0    0    0
## 1191   40-49    0    1    0    0
## 1192   30-39    1    0    0    0
## 1193   18-29    0    0    0    0
## 1194   40-49    0    1    0    0
## 1195   40-49    0    1    0    0
## 1196   40-49    0    1    0    0
## 1197   30-39    1    0    0    0
## 1198   50-59    0    0    1    0
## 1199   40-49    0    1    0    0
## 1200   40-49    0    1    0    0
## 1201   30-39    1    0    0    0
## 1202   30-39    1    0    0    0
## 1203   40-49    0    1    0    0
## 1204   30-39    1    0    0    0
## 1205   30-39    1    0    0    0
## 1206   50-59    0    0    1    0
```

```
## 1207       30-39         1         0         0              0
## 1208       30-39         1         0         0              0
## 1209       40-49         0         1         0              0
## 1210       30-39         1         0         0              0
## 1211       40-49         0         1         0              0
## 1212       50-59         0         0         1              0
## 1213       30-39         1         0         0              0
## 1214       18-29         0         0         0              0
## 1215       40-49         0         1         0              0
## 1216 60 or over         0         0         0              1
## 1217       40-49         0         1         0              0
## 1218       30-39         1         0         0              0
## 1219       30-39         1         0         0              0
## 1220       30-39         1         0         0              0
## 1221       40-49         0         1         0              0
## 1222       50-59         0         0         1              0
## 1223       50-59         0         0         1              0
## 1224       40-49         0         1         0              0
## 1225       30-39         1         0         0              0
## 1226       40-49         0         1         0              0
## 1227       40-49         0         1         0              0
## 1228       30-39         1         0         0              0
## 1229       18-29         0         0         0              0
## 1230       50-59         0         0         1              0
## 1231       50-59         0         0         1              0
## 1232       50-59         0         0         1              0
## 1233       50-59         0         0         1              0
## 1234 60 or over         0         0         0              1
## 1235       30-39         1         0         0              0
## 1236       18-29         0         0         0              0
## 1237       50-59         0         0         1              0
## 1238       30-39         1         0         0              0
## 1239       30-39         1         0         0              0
## 1240       18-29         0         0         0              0
## 1241       30-39         1         0         0              0
## 1242       30-39         1         0         0              0
## 1243       18-29         0         0         0              0
## 1244       18-29         0         0         0              0
## 1245       18-29         0         0         0              0
## 1246       30-39         1         0         0              0
## 1247       30-39         1         0         0              0
## 1248       50-59         0         0         1              0
## 1249       40-49         0         1         0              0
## 1250       18-29         0         0         0              0
## 1251       40-49         0         1         0              0
## 1252       30-39         1         0         0              0
## 1253       30-39         1         0         0              0
## 1254       18-29         0         0         0              0
## 1255 60 or over         0         0         0              1
## 1256       18-29         0         0         0              0
## 1257       40-49         0         1         0              0
## 1258       18-29         0         0         0              0
## 1259       30-39         1         0         0              0
## 1260       30-39         1         0         0              0
```

```
## 1261       30-39        1         0         0              0
## 1262       40-49        0         1         0              0
## 1263 60 or over         0         0         0              1
## 1264       18-29        0         0         0              0
## 1265       18-29        0         0         0              0
## 1266       30-39        1         0         0              0
## 1267       50-59        0         0         1              0
## 1268       30-39        1         0         0              0
## 1269       40-49        0         1         0              0
## 1270       30-39        1         0         0              0
## 1271       30-39        1         0         0              0
## 1272       50-59        0         0         1              0
## 1273       40-49        0         1         0              0
## 1274       30-39        1         0         0              0
## 1275       30-39        1         0         0              0
## 1276       40-49        0         1         0              0
## 1277       30-39        1         0         0              0
## 1278       30-39        1         0         0              0
## 1279       18-29        0         0         0              0
## 1280       40-49        0         1         0              0
## 1281       40-49        0         1         0              0
## 1282       30-39        1         0         0              0
## 1283       50-59        0         0         1              0
## 1284       18-29        0         0         0              0
## 1285       18-29        0         0         0              0
## 1286       50-59        0         0         1              0
## 1287       30-39        1         0         0              0
## 1288       40-49        0         1         0              0
## 1289       30-39        1         0         0              0
## 1290       30-39        1         0         0              0
## 1291       18-29        0         0         0              0
## 1292       30-39        1         0         0              0
## 1293       50-59        0         0         1              0
## 1294       30-39        1         0         0              0
## 1295       30-39        1         0         0              0
## 1296       18-29        0         0         0              0
## 1297       18-29        0         0         0              0
## 1298       30-39        1         0         0              0
## 1299       18-29        0         0         0              0
## 1300       50-59        0         0         1              0
## 1301       30-39        1         0         0              0
## 1302       18-29        0         0         0              0
## 1303       50-59        0         0         1              0
## 1304       40-49        0         1         0              0
## 1305       18-29        0         0         0              0
## 1306       18-29        0         0         0              0
## 1307       30-39        1         0         0              0
## 1308       30-39        1         0         0              0
## 1309       40-49        0         1         0              0
## 1310       50-59        0         0         1              0
## 1311       50-59        0         0         1              0
## 1312       50-59        0         0         1              0
## 1313 60 or over         0         0         0              1
## 1314       40-49        0         1         0              0
```

```
## 1315        30-39       1          0          0          0
## 1316        40-49       0          1          0          0
## 1317        30-39       1          0          0          0
## 1318        30-39       1          0          0          0
## 1319        40-49       0          1          0          0
## 1320        40-49       0          1          0          0
## 1321        40-49       0          1          0          0
## 1322        40-49       0          1          0          0
## 1323        40-49       0          1          0          0
## 1324 60 or over         0          0          0          1
## 1325        50-59       0          0          1          0
## 1326        18-29       0          0          0          0
## 1327        18-29       0          0          0          0
## 1328        30-39       1          0          0          0
## 1329        30-39       1          0          0          0
## 1330        30-39       1          0          0          0
## 1331        18-29       0          0          0          0
## 1332        40-49       0          1          0          0
## 1333        40-49       0          1          0          0
## 1334        40-49       0          1          0          0
## 1335        18-29       0          0          0          0
## 1336        30-39       1          0          0          0
## 1337        40-49       0          1          0          0
## 1338        40-49       0          1          0          0
## 1339 60 or over         0          0          0          1
## 1340        40-49       0          1          0          0
## 1341        40-49       0          1          0          0
## 1342        18-29       0          0          0          0
## 1343        30-39       1          0          0          0
## 1344        18-29       0          0          0          0
## 1345        18-29       0          0          0          0
## 1346        18-29       0          0          0          0
## 1347        40-49       0          1          0          0
## 1348        40-49       0          1          0          0
## 1349        40-49       0          1          0          0
## 1350        50-59       0          0          1          0
## 1351        40-49       0          1          0          0
## 1352        50-59       0          0          1          0
## 1353        18-29       0          0          0          0
## 1354        50-59       0          0          1          0
## 1355        18-29       0          0          0          0
## 1356        40-49       0          1          0          0
## 1357        18-29       0          0          0          0
## 1358        30-39       1          0          0          0
## 1359        30-39       1          0          0          0
## 1360        18-29       0          0          0          0
## 1361        18-29       0          0          0          0
## 1362        50-59       0          0          1          0
## 1363        18-29       0          0          0          0
## 1364        50-59       0          0          1          0
## 1365        18-29       0          0          0          0
## 1366        18-29       0          0          0          0
## 1367        40-49       0          1          0          0
## 1368        30-39       1          0          0          0
```

```
## 1369    40-49    0    1    0    0
## 1370    18-29    0    0    0    0
## 1371    40-49    0    1    0    0
## 1372    50-59    0    0    1    0
## 1373    40-49    0    1    0    0
## 1374    40-49    0    1    0    0
## 1375    50-59    0    0    1    0
## 1376    50-59    0    0    1    0
## 1377    30-39    1    0    0    0
## 1378    18-29    0    0    0    0
## 1379    30-39    1    0    0    0
## 1380    40-49    0    1    0    0
## 1381    50-59    0    0    1    0
## 1382    18-29    0    0    0    0
## 1383    30-39    1    0    0    0
## 1384    30-39    1    0    0    0
## 1385    50-59    0    0    1    0
## 1386    40-49    0    1    0    0
## 1387    40-49    0    1    0    0
## 1388    50-59    0    0    1    0
## 1389    40-49    0    1    0    0
## 1390    50-59    0    0    1    0
## 1391    40-49    0    1    0    0
## 1392    40-49    0    1    0    0
## 1393    18-29    0    0    0    0
## 1394    50-59    0    0    1    0
## 1395    40-49    0    1    0    0
## 1396    40-49    0    1    0    0
## 1397    40-49    0    1    0    0
## 1398    30-39    1    0    0    0
## 1399    18-29    0    0    0    0
## 1400    30-39    1    0    0    0
## 1401    30-39    1    0    0    0
## 1402    30-39    1    0    0    0
## 1403    18-29    0    0    0    0
## 1404    40-49    0    1    0    0
## 1405    40-49    0    1    0    0
## 1406    30-39    1    0    0    0
## 1407    30-39    1    0    0    0
## 1408    40-49    0    1    0    0
## 1409    40-49    0    1    0    0
## 1410    40-49    0    1    0    0
## 1411    30-39    1    0    0    0
## 1412    40-49    0    1    0    0
## 1413    30-39    1    0    0    0
## 1414    40-49    0    1    0    0
## 1415    18-29    0    0    0    0
## 1416    40-49    0    1    0    0
## 1417    18-29    0    0    0    0
## 1418    30-39    1    0    0    0
## 1419    30-39    1    0    0    0
## 1420    30-39    1    0    0    0
## 1421    30-39    1    0    0    0
## 1422    40-49    0    1    0    0
```

```
## 1423       30-39          1          0          0          0
## 1424       18-29          0          0          0          0
## 1425       30-39          1          0          0          0
## 1426       30-39          1          0          0          0
## 1427       50-59          0          0          1          0
## 1428       40-49          0          1          0          0
## 1429       40-49          0          1          0          0
## 1430       50-59          0          0          1          0
## 1431       18-29          0          0          0          0
## 1432       30-39          1          0          0          0
## 1433       18-29          0          0          0          0
## 1434       18-29          0          0          0          0
## 1435       50-59          0          0          1          0
## 1436       50-59          0          0          1          0
## 1437       30-39          1          0          0          0
## 1438       40-49          0          1          0          0
## 1439       18-29          0          0          0          0
## 1440       40-49          0          1          0          0
## 1441       30-39          1          0          0          0
## 1442       40-49          0          1          0          0
## 1443 60 or over          0          0          0          1
## 1444       40-49          0          1          0          0
## 1445       30-39          1          0          0          0
## 1446       40-49          0          1          0          0
## 1447       40-49          0          1          0          0
## 1448       40-49          0          1          0          0
## 1449       30-39          1          0          0          0
## 1450       18-29          0          0          0          0
## 1451       40-49          0          1          0          0
## 1452       40-49          0          1          0          0
## 1453       50-59          0          0          1          0
## 1454       30-39          1          0          0          0
## 1455       40-49          0          1          0          0
## 1456       50-59          0          0          1          0
## 1457       40-49          0          1          0          0
## 1458       40-49          0          1          0          0
## 1459       30-39          1          0          0          0
## 1460       18-29          0          0          0          0
## 1461       50-59          0          0          1          0
## 1462       40-49          0          1          0          0
## 1463       30-39          1          0          0          0
## 1464       30-39          1          0          0          0
## 1465       50-59          0          0          1          0
## 1466       30-39          1          0          0          0
## 1467       18-29          0          0          0          0
## 1468       40-49          0          1          0          0
## 1469       40-49          0          1          0          0
## 1470       30-39          1          0          0          0
## 1471       30-39          1          0          0          0
## 1472       30-39          1          0          0          0
## 1473       50-59          0          0          1          0
## 1474       40-49          0          1          0          0
## 1475       30-39          1          0          0          0
## 1476       50-59          0          0          1          0
```

```
## 1477         50-59      0         0         1         0
## 1478         40-49      0         1         0         0
## 1479         50-59      0         0         1         0
## 1480         30-39      1         0         0         0
## 1481         50-59      0         0         1         0
## 1482         40-49      0         1         0         0
## 1483         30-39      1         0         0         0
## 1484         30-39      1         0         0         0
## 1485         50-59      0         0         1         0
## 1486         30-39      1         0         0         0
## 1487         40-49      0         1         0         0
## 1488         50-59      0         0         1         0
## 1489         18-29      0         0         0         0
## 1490         50-59      0         0         1         0
## 1491         30-39      1         0         0         0
## 1492         30-39      1         0         0         0
## 1493         50-59      0         0         1         0
## 1494         30-39      1         0         0         0
## 1495         40-49      0         1         0         0
## 1496         18-29      0         0         0         0
## 1497         40-49      0         1         0         0
## 1498         40-49      0         1         0         0
## 1499         40-49      0         1         0         0
## 1500         40-49      0         1         0         0
## 1501         18-29      0         0         0         0
## 1502         40-49      0         1         0         0
## 1503         40-49      0         1         0         0
## 1504 60 or over         0         0         0         1
## 1505         30-39      1         0         0         0
## 1506         18-29      0         0         0         0
## 1507         30-39      1         0         0         0
## 1508         18-29      0         0         0         0
## 1509         30-39      1         0         0         0
## 1510 60 or over         0         0         0         1
## 1511         50-59      0         0         1         0
## 1512         18-29      0         0         0         0
## 1513         50-59      0         0         1         0
## 1514         30-39      1         0         0         0
## 1515         40-49      0         1         0         0
## 1516         50-59      0         0         1         0
## 1517         40-49      0         1         0         0
## 1518         40-49      0         1         0         0
## 1519         40-49      0         1         0         0
## 1520         30-39      1         0         0         0
## 1521         30-39      1         0         0         0
## 1522         40-49      0         1         0         0
## 1523         30-39      1         0         0         0
## 1524         18-29      0         0         0         0
## 1525         18-29      0         0         0         0
## 1526         18-29      0         0         0         0
## 1527         30-39      1         0         0         0
## 1528         40-49      0         1         0         0
## 1529         18-29      0         0         0         0
## 1530         30-39      1         0         0         0
```

```
## 1531 60 or over          0          0          0          1
## 1532        50-59         0          0          1          0
## 1533        50-59         0          0          1          0
## 1534        40-49         0          1          0          0
## 1535        18-29         0          0          0          0
## 1536        18-29         0          0          0          0
## 1537        30-39         1          0          0          0
## 1538        50-59         0          0          1          0
## 1539        40-49         0          1          0          0
## 1540        40-49         0          1          0          0
## 1541        30-39         1          0          0          0
## 1542        50-59         0          0          1          0
## 1543 60 or over          0          0          0          1
## 1544        50-59         0          0          1          0
## 1545        18-29         0          0          0          0
## 1546        18-29         0          0          0          0
## 1547        30-39         1          0          0          0
## 1548        30-39         1          0          0          0
## 1549        30-39         1          0          0          0
## 1550        40-49         0          1          0          0
## 1551        30-39         1          0          0          0
## 1552        40-49         0          1          0          0
## 1553        30-39         1          0          0          0
## 1554        18-29         0          0          0          0
## 1555        50-59         0          0          1          0
## 1556        18-29         0          0          0          0
## 1557        18-29         0          0          0          0
## 1558        50-59         0          0          1          0
## 1559        18-29         0          0          0          0
## 1560        40-49         0          1          0          0
## 1561        40-49         0          1          0          0
## 1562        30-39         1          0          0          0
## 1563        18-29         0          0          0          0
## 1564        30-39         1          0          0          0
## 1565        30-39         1          0          0          0
## 1566        18-29         0          0          0          0
## 1567        40-49         0          1          0          0
## 1568        30-39         1          0          0          0
## 1569        40-49         0          1          0          0
## 1570        40-49         0          1          0          0
## 1571        18-29         0          0          0          0
## 1572        50-59         0          0          1          0
## 1573 60 or over          0          0          0          1
## 1574        40-49         0          1          0          0
## 1575        18-29         0          0          0          0
## 1576        18-29         0          0          0          0
## 1577        30-39         1          0          0          0
## 1578        18-29         0          0          0          0
## 1579        40-49         0          1          0          0
## 1580        40-49         0          1          0          0
## 1581        30-39         1          0          0          0
## 1582        50-59         0          0          1          0
## 1583        30-39         1          0          0          0
## 1584        50-59         0          0          1          0
```

```
## 1585        50-59      0       0        1            0
## 1586        18-29      0       0        0            0
## 1587        18-29      0       0        0            0
## 1588        40-49      0       1        0            0
## 1589        30-39      1       0        0            0
## 1590        18-29      0       0        0            0
## 1591        30-39      1       0        0            0
## 1592        30-39      1       0        0            0
## 1593        40-49      0       1        0            0
## 1594        30-39      1       0        0            0
## 1595        30-39      1       0        0            0
## 1596        18-29      0       0        0            0
## 1597        50-59      0       0        1            0
## 1598        30-39      1       0        0            0
## 1599        30-39      1       0        0            0
## 1600        30-39      1       0        0            0
## 1601        30-39      1       0        0            0
## 1602        30-39      1       0        0            0
## 1603        30-39      1       0        0            0
## 1604        40-49      0       1        0            0
## 1605        50-59      0       0        1            0
## 1606        50-59      0       0        1            0
## 1607        18-29      0       0        0            0
## 1608        30-39      1       0        0            0
## 1609 60 or over       0       0        0            1
## 1610        40-49      0       1        0            0
## 1611        30-39      1       0        0            0
## 1612 60 or over       0       0        0            1
## 1613        30-39      1       0        0            0
## 1614        18-29      0       0        0            0
## 1615        30-39      1       0        0            0
## 1616        40-49      0       1        0            0
## 1617        18-29      0       0        0            0
## 1618        18-29      0       0        0            0
## 1619        50-59      0       0        1            0
## 1620        40-49      0       1        0            0
## 1621        50-59      0       0        1            0
## 1622        50-59      0       0        1            0
## 1623        40-49      0       1        0            0
## 1624        30-39      1       0        0            0
## 1625        18-29      0       0        0            0
## 1626        40-49      0       1        0            0
## 1627        40-49      0       1        0            0
## 1628        40-49      0       1        0            0
## 1629        30-39      1       0        0            0
## 1630        30-39      1       0        0            0
## 1631        18-29      0       0        0            0
## 1632        40-49      0       1        0            0
## 1633        40-49      0       1        0            0
## 1634        50-59      0       0        1            0
## 1635        50-59      0       0        1            0
## 1636        50-59      0       0        1            0
## 1637        50-59      0       0        1            0
## 1638        40-49      0       1        0            0
```

```
## 1639    50-59    0    0    1    0
## 1640    40-49    0    1    0    0
## 1641    30-39    1    0    0    0
## 1642    30-39    1    0    0    0
## 1643    40-49    0    1    0    0
## 1644    18-29    0    0    0    0
## 1645    40-49    0    1    0    0
## 1646    40-49    0    1    0    0
## 1647    30-39    1    0    0    0
## 1648    30-39    1    0    0    0
## 1649    30-39    1    0    0    0
## 1650    30-39    1    0    0    0
## 1651    40-49    0    1    0    0
## 1652    30-39    1    0    0    0
## 1653    18-29    0    0    0    0
## 1654    30-39    1    0    0    0
## 1655    40-49    0    1    0    0
## 1656    40-49    0    1    0    0
## 1657    30-39    1    0    0    0
## 1658    40-49    0    1    0    0
## 1659    30-39    1    0    0    0
## 1660    40-49    0    1    0    0
## 1661    40-49    0    1    0    0
## 1662    50-59    0    0    1    0
## 1663    30-39    1    0    0    0
## 1664    50-59    0    0    1    0
## 1665    18-29    0    0    0    0
## 1666    40-49    0    1    0    0
## 1667    50-59    0    0    1    0
## 1668    50-59    0    0    1    0
## 1669    30-39    1    0    0    0
## 1670    50-59    0    0    1    0
## 1671    40-49    0    1    0    0
## 1672    18-29    0    0    0    0
## 1673    40-49    0    1    0    0
## 1674    50-59    0    0    1    0
## 1675    40-49    0    1    0    0
## 1676    40-49    0    1    0    0
## 1677    50-59    0    0    1    0
## 1678    50-59    0    0    1    0
## 1679    50-59    0    0    1    0
## 1680    30-39    1    0    0    0
## 1681    40-49    0    1    0    0
## 1682    30-39    1    0    0    0
## 1683    30-39    1    0    0    0
## 1684    30-39    1    0    0    0
## 1685    40-49    0    1    0    0
## 1686    18-29    0    0    0    0
## 1687    50-59    0    0    1    0
## 1688    40-49    0    1    0    0
## 1689    40-49    0    1    0    0
## 1690    30-39    1    0    0    0
## 1691    30-39    1    0    0    0
## 1692    30-39    1    0    0    0
```

34

```
## 1693      40-49         0          1          0               0
## 1694      50-59         0          0          1               0
## 1695      40-49         0          1          0               0
## 1696      18-29         0          0          0               0
## 1697      30-39         1          0          0               0
## 1698      18-29         0          0          0               0
## 1699      18-29         0          0          0               0
## 1700      30-39         1          0          0               0
## 1701      40-49         0          1          0               0
## 1702      30-39         1          0          0               0
## 1703      40-49         0          1          0               0
## 1704      40-49         0          1          0               0
## 1705      40-49         0          1          0               0
## 1706      30-39         1          0          0               0
## 1707      18-29         0          0          0               0
## 1708      18-29         0          0          0               0
## 1709      40-49         0          1          0               0
## 1710      40-49         0          1          0               0
## 1711      50-59         0          0          1               0
## 1712      50-59         0          0          1               0
## 1713      50-59         0          0          1               0
## 1714      40-49         0          1          0               0
## 1715      30-39         1          0          0               0
## 1716      40-49         0          1          0               0
## 1717      40-49         0          1          0               0
## 1718      18-29         0          0          0               0
## 1719      30-39         1          0          0               0
## 1720      18-29         0          0          0               0
## 1721      30-39         1          0          0               0
## 1722      30-39         1          0          0               0
## 1723      50-59         0          0          1               0
## 1724 60 or over         0          0          0               1
## 1725      40-49         0          1          0               0
## 1726      40-49         0          1          0               0
## 1727      30-39         1          0          0               0
## 1728      40-49         0          1          0               0
## 1729      18-29         0          0          0               0
## 1730      40-49         0          1          0               0
## 1731      30-39         1          0          0               0
## 1732      18-29         0          0          0               0
## 1733      40-49         0          1          0               0
## 1734      40-49         0          1          0               0
## 1735      40-49         0          1          0               0
## 1736      40-49         0          1          0               0
## 1737      40-49         0          1          0               0
## 1738      30-39         1          0          0               0
## 1739      30-39         1          0          0               0
## 1740      18-29         0          0          0               0
## 1741      50-59         0          0          1               0
## 1742      30-39         1          0          0               0
## 1743      50-59         0          0          1               0
## 1744      30-39         1          0          0               0
## 1745      30-39         1          0          0               0
## 1746      40-49         0          1          0               0
```

```
## 1747        50-59        0        0        1        0
## 1748        50-59        0        0        1        0
## 1749        40-49        0        1        0        0
## 1750        18-29        0        0        0        0
## 1751        30-39        1        0        0        0
## 1752        18-29        0        0        0        0
## 1753        40-49        0        1        0        0
## 1754        18-29        0        0        0        0
## 1755        18-29        0        0        0        0
## 1756        18-29        0        0        0        0
## 1757        30-39        1        0        0        0
## 1758        30-39        1        0        0        0
## 1759        50-59        0        0        1        0
## 1760        50-59        0        0        1        0
## 1761        18-29        0        0        0        0
## 1762        30-39        1        0        0        0
## 1763        40-49        0        1        0        0
## 1764        30-39        1        0        0        0
## 1765        30-39        1        0        0        0
## 1766        40-49        0        1        0        0
## 1767        40-49        0        1        0        0
## 1768        40-49        0        1        0        0
## 1769        40-49        0        1        0        0
## 1770        40-49        0        1        0        0
## 1771        18-29        0        0        0        0
## 1772        30-39        1        0        0        0
## 1773 60 or over         0        0        0        1
## 1774        40-49        0        1        0        0
## 1775        50-59        0        0        1        0
## 1776        30-39        1        0        0        0
## 1777        30-39        1        0        0        0
## 1778        18-29        0        0        0        0
## 1779        40-49        0        1        0        0
## 1780        50-59        0        0        1        0
## 1781        40-49        0        1        0        0
## 1782        18-29        0        0        0        0
## 1783        30-39        1        0        0        0
## 1784        40-49        0        1        0        0
## 1785        30-39        1        0        0        0
## 1786        18-29        0        0        0        0
## 1787        50-59        0        0        1        0
## 1788        50-59        0        0        1        0
## 1789        40-49        0        1        0        0
## 1790        40-49        0        1        0        0
## 1791        18-29        0        0        0        0
## 1792        30-39        1        0        0        0
## 1793        40-49        0        1        0        0
## 1794        18-29        0        0        0        0
## 1795        18-29        0        0        0        0
## 1796        40-49        0        1        0        0
## 1797        50-59        0        0        1        0
## 1798        40-49        0        1        0        0
## 1799        40-49        0        1        0        0
## 1800        18-29        0        0        0        0
```

36

```
## 1801      30-39       1       0       0       0
## 1802      40-49       0       1       0       0
## 1803      30-39       1       0       0       0
## 1804      50-59       0       0       1       0
## 1805      30-39       1       0       0       0
## 1806      40-49       0       1       0       0
## 1807      18-29       0       0       0       0
## 1808      30-39       1       0       0       0
## 1809      30-39       1       0       0       0
## 1810      40-49       0       1       0       0
## 1811      40-49       0       1       0       0
## 1812      50-59       0       0       1       0
## 1813      30-39       1       0       0       0
## 1814      50-59       0       0       1       0
## 1815      50-59       0       0       1       0
## 1816      18-29       0       0       0       0
## 1817      18-29       0       0       0       0
## 1818      40-49       0       1       0       0
## 1819      30-39       1       0       0       0
## 1820      50-59       0       0       1       0
## 1821 60 or over       0       0       0       1
## 1822      30-39       1       0       0       0
## 1823      30-39       1       0       0       0
## 1824      40-49       0       1       0       0
## 1825      40-49       0       1       0       0
## 1826      30-39       1       0       0       0
## 1827      50-59       0       0       1       0
## 1828      30-39       1       0       0       0
## 1829      18-29       0       0       0       0
## 1830      40-49       0       1       0       0
## 1831      40-49       0       1       0       0
## 1832      30-39       1       0       0       0
## 1833      30-39       1       0       0       0
## 1834      30-39       1       0       0       0
## 1835      18-29       0       0       0       0
## 1836      30-39       1       0       0       0
## 1837      40-49       0       1       0       0
## 1838      50-59       0       0       1       0
## 1839      30-39       1       0       0       0
## 1840      40-49       0       1       0       0
## 1841      40-49       0       1       0       0
## 1842      30-39       1       0       0       0
## 1843      30-39       1       0       0       0
## 1844      40-49       0       1       0       0
## 1845      30-39       1       0       0       0
## 1846      30-39       1       0       0       0
## 1847      30-39       1       0       0       0
## 1848      18-29       0       0       0       0
## 1849      18-29       0       0       0       0
## 1850      18-29       0       0       0       0
## 1851      18-29       0       0       0       0
## 1852      50-59       0       0       1       0
## 1853      50-59       0       0       1       0
## 1854      30-39       1       0       0       0
```

```
## 1855 60 or over       0        0        0             1
## 1856     30-39        1        0        0             0
## 1857     18-29        0        0        0             0
## 1858     50-59        0        0        1             0
## 1859     18-29        0        0        0             0
## 1860     30-39        1        0        0             0
## 1861     18-29        0        0        0             0
## 1862     40-49        0        1        0             0
## 1863     50-59        0        0        1             0
## 1864     30-39        1        0        0             0
## 1865     18-29        0        0        0             0
## 1866     50-59        0        0        1             0
## 1867     40-49        0        1        0             0
## 1868     50-59        0        0        1             0
## 1869     30-39        1        0        0             0
## 1870     50-59        0        0        1             0
## 1871     30-39        1        0        0             0
## 1872     30-39        1        0        0             0
## 1873     50-59        0        0        1             0
## 1874     18-29        0        0        0             0
## 1875     30-39        1        0        0             0
## 1876     40-49        0        1        0             0
## 1877     40-49        0        1        0             0
## 1878     50-59        0        0        1             0
## 1879     30-39        1        0        0             0
## 1880     30-39        1        0        0             0
## 1881     18-29        0        0        0             0
## 1882     30-39        1        0        0             0
## 1883     18-29        0        0        0             0
## 1884     30-39        1        0        0             0
## 1885     30-39        1        0        0             0
## 1886     40-49        0        1        0             0
## 1887     30-39        1        0        0             0
## 1888     30-39        1        0        0             0
## 1889     40-49        0        1        0             0
## 1890     18-29        0        0        0             0
## 1891     40-49        0        1        0             0
## 1892     40-49        0        1        0             0
## 1893     18-29        0        0        0             0
## 1894     18-29        0        0        0             0
## 1895     30-39        1        0        0             0
## 1896     50-59        0        0        1             0
## 1897     30-39        1        0        0             0
## 1898     40-49        0        1        0             0
## 1899     30-39        1        0        0             0
## 1900     30-39        1        0        0             0
## 1901     18-29        0        0        0             0
## 1902     30-39        1        0        0             0
## 1903     18-29        0        0        0             0
## 1904     50-59        0        0        1             0
## 1905     30-39        1        0        0             0
## 1906     40-49        0        1        0             0
## 1907     30-39        1        0        0             0
## 1908     40-49        0        1        0             0
```

```
## 1909    40-49      0      1      0      0
## 1910    30-39      1      0      0      0
## 1911    40-49      0      1      0      0
## 1912    30-39      1      0      0      0
## 1913    40-49      0      1      0      0
## 1914    40-49      0      1      0      0
## 1915    30-39      1      0      0      0
## 1916    30-39      1      0      0      0
## 1917 60 or over    0      0      0      1
## 1918    40-49      0      1      0      0
## 1919    40-49      0      1      0      0
## 1920    40-49      0      1      0      0
## 1921    40-49      0      1      0      0
## 1922    30-39      1      0      0      0
## 1923    30-39      1      0      0      0
## 1924    18-29      0      0      0      0
## 1925    30-39      1      0      0      0
## 1926    40-49      0      1      0      0
## 1927    50-59      0      0      1      0
## 1928    30-39      1      0      0      0
## 1929    18-29      0      0      0      0
## 1930    30-39      1      0      0      0
## 1931    18-29      0      0      0      0
## 1932    50-59      0      0      1      0
## 1933    30-39      1      0      0      0
## 1934    40-49      0      1      0      0
## 1935    18-29      0      0      0      0
## 1936    18-29      0      0      0      0
## 1937    50-59      0      0      1      0
## 1938    30-39      1      0      0      0
## 1939    50-59      0      0      1      0
## 1940    50-59      0      0      1      0
## 1941    40-49      0      1      0      0
## 1942    40-49      0      1      0      0
## 1943    30-39      1      0      0      0
## 1944    40-49      0      1      0      0
## 1945    30-39      1      0      0      0
## 1946    30-39      1      0      0      0
## 1947    30-39      1      0      0      0
## 1948    50-59      0      0      1      0
## 1949    50-59      0      0      1      0
## 1950    18-29      0      0      0      0
## 1951    30-39      1      0      0      0
## 1952    18-29      0      0      0      0
## 1953    30-39      1      0      0      0
## 1954    30-39      1      0      0      0
## 1955    50-59      0      0      1      0
## 1956    18-29      0      0      0      0
## 1957    30-39      1      0      0      0
## 1958    40-49      0      1      0      0
## 1959    40-49      0      1      0      0
## 1960    18-29      0      0      0      0
## 1961    18-29      0      0      0      0
## 1962    30-39      1      0      0      0
```

39

```
## 1963        50-59          0           0           1               0
## 1964        30-39          1           0           0               0
## 1965        30-39          1           0           0               0
## 1966        50-59          0           0           1               0
## 1967        40-49          0           1           0               0
## 1968        30-39          1           0           0               0
## 1969        30-39          1           0           0               0
## 1970 60 or over            0           0           0               1
## 1971        50-59          0           0           1               0
## 1972        30-39          1           0           0               0
## 1973        40-49          0           1           0               0
## 1974        40-49          0           1           0               0
## 1975        40-49          0           1           0               0
## 1976        30-39          1           0           0               0
## 1977        30-39          1           0           0               0
## 1978        18-29          0           0           0               0
## 1979        40-49          0           1           0               0
## 1980        18-29          0           0           0               0
## 1981        40-49          0           1           0               0
## 1982        40-49          0           1           0               0
## 1983        50-59          0           0           1               0
## 1984        30-39          1           0           0               0
## 1985        50-59          0           0           1               0
## 1986        30-39          1           0           0               0
## 1987        30-39          1           0           0               0
## 1988        40-49          0           1           0               0
## 1989        40-49          0           1           0               0
## 1990        30-39          1           0           0               0
## 1991        40-49          0           1           0               0
## 1992        18-29          0           0           0               0
## 1993        30-39          1           0           0               0
## 1994        30-39          1           0           0               0
## 1995        50-59          0           0           1               0
## 1996        18-29          0           0           0               0
## 1997        18-29          0           0           0               0
## 1998        18-29          0           0           0               0
## 1999        30-39          1           0           0               0
## 2000        40-49          0           1           0               0
```

Here is another way to create dummy variables.

```
model.matrix(~age,df)[,-1]%>%
  data.frame()%>%
  bind_cols(age = df$age)%>%
  select(age, everything())
```

```
##             age age30.39 age40.49 age50.59 age60.or.over
## 1         18-29        0        0        0             0
## 2         50-59        0        0        1             0
## 3         30-39        1        0        0             0
## 4         40-49        0        1        0             0
## 5         30-39        1        0        0             0
## 6         40-49        0        1        0             0
## 7         18-29        0        0        0             0
## 8         50-59        0        0        1             0
```

```
## 9     18-29     0     0     0     0
## 10    18-29     0     0     0     0
## 11    40-49     0     1     0     0
## 12    30-39     1     0     0     0
## 13    40-49     0     1     0     0
## 14    40-49     0     1     0     0
## 15    40-49     0     1     0     0
## 16    18-29     0     0     0     0
## 17    40-49     0     1     0     0
## 18    50-59     0     0     1     0
## 19    40-49     0     1     0     0
## 20    40-49     0     1     0     0
## 21    40-49     0     1     0     0
## 22    40-49     0     1     0     0
## 23    40-49     0     1     0     0
## 24    30-39     1     0     0     0
## 25    50-59     0     0     1     0
## 26    40-49     0     1     0     0
## 27    30-39     1     0     0     0
## 28    50-59     0     0     1     0
## 29    40-49     0     1     0     0
## 30    40-49     0     1     0     0
## 31    50-59     0     0     1     0
## 32    18-29     0     0     0     0
## 33    30-39     1     0     0     0
## 34    40-49     0     1     0     0
## 35    40-49     0     1     0     0
## 36    18-29     0     0     0     0
## 37    18-29     0     0     0     0
## 38    50-59     0     0     1     0
## 39    30-39     1     0     0     0
## 40    50-59     0     0     1     0
## 41    40-49     0     1     0     0
## 42    40-49     0     1     0     0
## 43    18-29     0     0     0     0
## 44    30-39     1     0     0     0
## 45    50-59     0     0     1     0
## 46    40-49     0     1     0     0
## 47    50-59     0     0     1     0
## 48    30-39     1     0     0     0
## 49    18-29     0     0     0     0
## 50    40-49     0     1     0     0
## 51    18-29     0     0     0     0
## 52    18-29     0     0     0     0
## 53    40-49     0     1     0     0
## 54    18-29     0     0     0     0
## 55    40-49     0     1     0     0
## 56    40-49     0     1     0     0
## 57    18-29     0     0     0     0
## 58    40-49     0     1     0     0
## 59    50-59     0     0     1     0
## 60    40-49     0     1     0     0
## 61    30-39     1     0     0     0
## 62    30-39     1     0     0     0
```

```
## 63       30-39       1       0       0       0
## 64       50-59       0       0       1       0
## 65       50-59       0       0       1       0
## 66       30-39       1       0       0       0
## 67       30-39       1       0       0       0
## 68       40-49       0       1       0       0
## 69       30-39       1       0       0       0
## 70       40-49       0       1       0       0
## 71       18-29       0       0       0       0
## 72       50-59       0       0       1       0
## 73       40-49       0       1       0       0
## 74       30-39       1       0       0       0
## 75       30-39       1       0       0       0
## 76       30-39       1       0       0       0
## 77       30-39       1       0       0       0
## 78       30-39       1       0       0       0
## 79       40-49       0       1       0       0
## 80       40-49       0       1       0       0
## 81       40-49       0       1       0       0
## 82       50-59       0       0       1       0
## 83    60 or over     0       0       0       1
## 84       18-29       0       0       0       0
## 85       50-59       0       0       1       0
## 86       30-39       1       0       0       0
## 87       40-49       0       1       0       0
## 88       18-29       0       0       0       0
## 89       40-49       0       1       0       0
## 90       30-39       1       0       0       0
## 91       40-49       0       1       0       0
## 92       18-29       0       0       0       0
## 93       18-29       0       0       0       0
## 94       50-59       0       0       1       0
## 95       40-49       0       1       0       0
## 96       40-49       0       1       0       0
## 97       40-49       0       1       0       0
## 98       40-49       0       1       0       0
## 99       30-39       1       0       0       0
## 100      40-49       0       1       0       0
## 101      40-49       0       1       0       0
## 102   60 or over     0       0       0       1
## 103      50-59       0       0       1       0
## 104      40-49       0       1       0       0
## 105      30-39       1       0       0       0
## 106      50-59       0       0       1       0
## 107      18-29       0       0       0       0
## 108      30-39       1       0       0       0
## 109      40-49       0       1       0       0
## 110      50-59       0       0       1       0
## 111      40-49       0       1       0       0
## 112      50-59       0       0       1       0
## 113      50-59       0       0       1       0
## 114      18-29       0       0       0       0
## 115      30-39       1       0       0       0
## 116      50-59       0       0       1       0
```

```
## 117     40-49       0       1       0       0
## 118     18-29       0       0       0       0
## 119     50-59       0       0       1       0
## 120     40-49       0       1       0       0
## 121     18-29       0       0       0       0
## 122     30-39       1       0       0       0
## 123     18-29       0       0       0       0
## 124     30-39       1       0       0       0
## 125     18-29       0       0       0       0
## 126     30-39       1       0       0       0
## 127     40-49       0       1       0       0
## 128     40-49       0       1       0       0
## 129     40-49       0       1       0       0
## 130     18-29       0       0       0       0
## 131     18-29       0       0       0       0
## 132     40-49       0       1       0       0
## 133     18-29       0       0       0       0
## 134     40-49       0       1       0       0
## 135     30-39       1       0       0       0
## 136     50-59       0       0       1       0
## 137     18-29       0       0       0       0
## 138     30-39       1       0       0       0
## 139     18-29       0       0       0       0
## 140     40-49       0       1       0       0
## 141     40-49       0       1       0       0
## 142     50-59       0       0       1       0
## 143     30-39       1       0       0       0
## 144     18-29       0       0       0       0
## 145     18-29       0       0       0       0
## 146     30-39       1       0       0       0
## 147     40-49       0       1       0       0
## 148     30-39       1       0       0       0
## 149     18-29       0       0       0       0
## 150     40-49       0       1       0       0
## 151     30-39       1       0       0       0
## 152     30-39       1       0       0       0
## 153     30-39       1       0       0       0
## 154     18-29       0       0       0       0
## 155     40-49       0       1       0       0
## 156     40-49       0       1       0       0
## 157     40-49       0       1       0       0
## 158     18-29       0       0       0       0
## 159     30-39       1       0       0       0
## 160     40-49       0       1       0       0
## 161     40-49       0       1       0       0
## 162     30-39       1       0       0       0
## 163     40-49       0       1       0       0
## 164     40-49       0       1       0       0
## 165     40-49       0       1       0       0
## 166  60 or over     0       0       0       1
## 167     18-29       0       0       0       0
## 168     40-49       0       1       0       0
## 169     30-39       1       0       0       0
## 170     40-49       0       1       0       0
```

```
## 171        40-49        0        1        0        0
## 172        30-39        1        0        0        0
## 173        18-29        0        0        0        0
## 174        18-29        0        0        0        0
## 175        40-49        0        1        0        0
## 176  60 or over         0        0        0        1
## 177        40-49        0        1        0        0
## 178        40-49        0        1        0        0
## 179        18-29        0        0        0        0
## 180        40-49        0        1        0        0
## 181        30-39        1        0        0        0
## 182        18-29        0        0        0        0
## 183        18-29        0        0        0        0
## 184        18-29        0        0        0        0
## 185        40-49        0        1        0        0
## 186        40-49        0        1        0        0
## 187        30-39        1        0        0        0
## 188        40-49        0        1        0        0
## 189        18-29        0        0        0        0
## 190        30-39        1        0        0        0
## 191        30-39        1        0        0        0
## 192        18-29        0        0        0        0
## 193        18-29        0        0        0        0
## 194  60 or over         0        0        0        1
## 195        50-59        0        0        1        0
## 196        40-49        0        1        0        0
## 197        30-39        1        0        0        0
## 198        40-49        0        1        0        0
## 199        40-49        0        1        0        0
## 200        40-49        0        1        0        0
## 201        30-39        1        0        0        0
## 202        18-29        0        0        0        0
## 203        30-39        1        0        0        0
## 204        18-29        0        0        0        0
## 205        40-49        0        1        0        0
## 206        30-39        1        0        0        0
## 207        40-49        0        1        0        0
## 208        40-49        0        1        0        0
## 209        18-29        0        0        0        0
## 210        18-29        0        0        0        0
## 211        40-49        0        1        0        0
## 212        30-39        1        0        0        0
## 213        40-49        0        1        0        0
## 214        40-49        0        1        0        0
## 215        40-49        0        1        0        0
## 216        50-59        0        0        1        0
## 217        18-29        0        0        0        0
## 218        50-59        0        0        1        0
## 219        18-29        0        0        0        0
## 220        50-59        0        0        1        0
## 221        40-49        0        1        0        0
## 222        18-29        0        0        0        0
## 223        18-29        0        0        0        0
## 224        30-39        1        0        0        0
```

```
## 225     40-49       0        1        0            0
## 226  60 or over     0        0        0            1
## 227     30-39       1        0        0            0
## 228     30-39       1        0        0            0
## 229     40-49       0        1        0            0
## 230     18-29       0        0        0            0
## 231     30-39       1        0        0            0
## 232     50-59       0        0        1            0
## 233     50-59       0        0        1            0
## 234     30-39       1        0        0            0
## 235     40-49       0        1        0            0
## 236     30-39       1        0        0            0
## 237     18-29       0        0        0            0
## 238     30-39       1        0        0            0
## 239     40-49       0        1        0            0
## 240     18-29       0        0        0            0
## 241     50-59       0        0        1            0
## 242     40-49       0        1        0            0
## 243     50-59       0        0        1            0
## 244     30-39       1        0        0            0
## 245     40-49       0        1        0            0
## 246     18-29       0        0        0            0
## 247     30-39       1        0        0            0
## 248     50-59       0        0        1            0
## 249     30-39       1        0        0            0
## 250     50-59       0        0        1            0
## 251     40-49       0        1        0            0
## 252     50-59       0        0        1            0
## 253     40-49       0        1        0            0
## 254     18-29       0        0        0            0
## 255     18-29       0        0        0            0
## 256     18-29       0        0        0            0
## 257     30-39       1        0        0            0
## 258     40-49       0        1        0            0
## 259     18-29       0        0        0            0
## 260     18-29       0        0        0            0
## 261     18-29       0        0        0            0
## 262     40-49       0        1        0            0
## 263     40-49       0        1        0            0
## 264     30-39       1        0        0            0
## 265     30-39       1        0        0            0
## 266     30-39       1        0        0            0
## 267     40-49       0        1        0            0
## 268     40-49       0        1        0            0
## 269     40-49       0        1        0            0
## 270     50-59       0        0        1            0
## 271     50-59       0        0        1            0
## 272     40-49       0        1        0            0
## 273     30-39       1        0        0            0
## 274     40-49       0        1        0            0
## 275     18-29       0        0        0            0
## 276     18-29       0        0        0            0
## 277     30-39       1        0        0            0
## 278     30-39       1        0        0            0
```

```
## 279          18-29         0         0         0              0
## 280          40-49         0         1         0              0
## 281          18-29         0         0         0              0
## 282          18-29         0         0         0              0
## 283          18-29         0         0         0              0
## 284          40-49         0         1         0              0
## 285          18-29         0         0         0              0
## 286          40-49         0         1         0              0
## 287          40-49         0         1         0              0
## 288          30-39         1         0         0              0
## 289          40-49         0         1         0              0
## 290          18-29         0         0         0              0
## 291          40-49         0         1         0              0
## 292          40-49         0         1         0              0
## 293          30-39         1         0         0              0
## 294          18-29         0         0         0              0
## 295          18-29         0         0         0              0
## 296          50-59         0         0         1              0
## 297          40-49         0         1         0              0
## 298          30-39         1         0         0              0
## 299          40-49         0         1         0              0
## 300          18-29         0         0         0              0
## 301          30-39         1         0         0              0
## 302          40-49         0         1         0              0
## 303          18-29         0         0         0              0
## 304          30-39         1         0         0              0
## 305          40-49         0         1         0              0
## 306          50-59         0         0         1              0
## 307          30-39         1         0         0              0
## 308          40-49         0         1         0              0
## 309          30-39         1         0         0              0
## 310          30-39         1         0         0              0
## 311          50-59         0         0         1              0
## 312          30-39         1         0         0              0
## 313          30-39         1         0         0              0
## 314          40-49         0         1         0              0
## 315          18-29         0         0         0              0
## 316          30-39         1         0         0              0
## 317          50-59         0         0         1              0
## 318          50-59         0         0         1              0
## 319          18-29         0         0         0              0
## 320          18-29         0         0         0              0
## 321          18-29         0         0         0              0
## 322          40-49         0         1         0              0
## 323          50-59         0         0         1              0
## 324          40-49         0         1         0              0
## 325          40-49         0         1         0              0
## 326          30-39         1         0         0              0
## 327          30-39         1         0         0              0
## 328          30-39         1         0         0              0
## 329          40-49         0         1         0              0
## 330          40-49         0         1         0              0
## 331          40-49         0         1         0              0
## 332          40-49         0         1         0              0
```

```
## 333        30-39         1         0         0              0
## 334        30-39         1         0         0              0
## 335        30-39         1         0         0              0
## 336        18-29         0         0         0              0
## 337        40-49         0         1         0              0
## 338        30-39         1         0         0              0
## 339        40-49         0         1         0              0
## 340        30-39         1         0         0              0
## 341        18-29         0         0         0              0
## 342        30-39         1         0         0              0
## 343        18-29         0         0         0              0
## 344   60 or over         0         0         0              1
## 345        40-49         0         1         0              0
## 346        30-39         1         0         0              0
## 347        40-49         0         1         0              0
## 348        40-49         0         1         0              0
## 349        18-29         0         0         0              0
## 350        40-49         0         1         0              0
## 351        40-49         0         1         0              0
## 352        50-59         0         0         1              0
## 353        40-49         0         1         0              0
## 354        30-39         1         0         0              0
## 355        18-29         0         0         0              0
## 356        50-59         0         0         1              0
## 357        40-49         0         1         0              0
## 358        30-39         1         0         0              0
## 359        18-29         0         0         0              0
## 360        30-39         1         0         0              0
## 361        30-39         1         0         0              0
## 362        30-39         1         0         0              0
## 363        30-39         1         0         0              0
## 364        30-39         1         0         0              0
## 365        30-39         1         0         0              0
## 366        40-49         0         1         0              0
## 367        18-29         0         0         0              0
## 368        40-49         0         1         0              0
## 369        50-59         0         0         1              0
## 370        18-29         0         0         0              0
## 371        40-49         0         1         0              0
## 372        18-29         0         0         0              0
## 373        30-39         1         0         0              0
## 374        40-49         0         1         0              0
## 375        30-39         1         0         0              0
## 376        18-29         0         0         0              0
## 377        40-49         0         1         0              0
## 378        50-59         0         0         1              0
## 379        30-39         1         0         0              0
## 380        50-59         0         0         1              0
## 381        50-59         0         0         1              0
## 382        40-49         0         1         0              0
## 383        50-59         0         0         1              0
## 384        18-29         0         0         0              0
## 385        30-39         1         0         0              0
## 386        18-29         0         0         0              0
```

```
## 387      40-49        0        1        0        0
## 388      18-29        0        0        0        0
## 389      30-39        1        0        0        0
## 390      18-29        0        0        0        0
## 391      40-49        0        1        0        0
## 392      18-29        0        0        0        0
## 393      30-39        1        0        0        0
## 394      40-49        0        1        0        0
## 395      18-29        0        0        0        0
## 396      40-49        0        1        0        0
## 397      40-49        0        1        0        0
## 398      40-49        0        1        0        0
## 399      30-39        1        0        0        0
## 400      30-39        1        0        0        0
## 401      30-39        1        0        0        0
## 402      50-59        0        0        1        0
## 403      30-39        1        0        0        0
## 404  60 or over       0        0        0        1
## 405      18-29        0        0        0        0
## 406      40-49        0        1        0        0
## 407      30-39        1        0        0        0
## 408      18-29        0        0        0        0
## 409      30-39        1        0        0        0
## 410      40-49        0        1        0        0
## 411      30-39        1        0        0        0
## 412      50-59        0        0        1        0
## 413      50-59        0        0        1        0
## 414      30-39        1        0        0        0
## 415      40-49        0        1        0        0
## 416      40-49        0        1        0        0
## 417      40-49        0        1        0        0
## 418      30-39        1        0        0        0
## 419      18-29        0        0        0        0
## 420      30-39        1        0        0        0
## 421      50-59        0        0        1        0
## 422      50-59        0        0        1        0
## 423      18-29        0        0        0        0
## 424      30-39        1        0        0        0
## 425      18-29        0        0        0        0
## 426      18-29        0        0        0        0
## 427  60 or over       0        0        0        1
## 428      40-49        0        1        0        0
## 429      18-29        0        0        0        0
## 430      40-49        0        1        0        0
## 431      50-59        0        0        1        0
## 432      30-39        1        0        0        0
## 433      40-49        0        1        0        0
## 434      40-49        0        1        0        0
## 435      40-49        0        1        0        0
## 436      40-49        0        1        0        0
## 437      30-39        1        0        0        0
## 438      40-49        0        1        0        0
## 439      40-49        0        1        0        0
## 440      30-39        1        0        0        0
```

```
## 441        40-49      0      1      0          0
## 442        40-49      0      1      0          0
## 443        18-29      0      0      0          0
## 444   60 or over      0      0      0          1
## 445        18-29      0      0      0          0
## 446        40-49      0      1      0          0
## 447        40-49      0      1      0          0
## 448        50-59      0      0      1          0
## 449        18-29      0      0      0          0
## 450        40-49      0      1      0          0
## 451        40-49      0      1      0          0
## 452        30-39      1      0      0          0
## 453        30-39      1      0      0          0
## 454        50-59      0      0      1          0
## 455        18-29      0      0      0          0
## 456        40-49      0      1      0          0
## 457        30-39      1      0      0          0
## 458        30-39      1      0      0          0
## 459        40-49      0      1      0          0
## 460        30-39      1      0      0          0
## 461        50-59      0      0      1          0
## 462        18-29      0      0      0          0
## 463        30-39      1      0      0          0
## 464        40-49      0      1      0          0
## 465        40-49      0      1      0          0
## 466        30-39      1      0      0          0
## 467        40-49      0      1      0          0
## 468        40-49      0      1      0          0
## 469        50-59      0      0      1          0
## 470        40-49      0      1      0          0
## 471        18-29      0      0      0          0
## 472        50-59      0      0      1          0
## 473        50-59      0      0      1          0
## 474        40-49      0      1      0          0
## 475        30-39      1      0      0          0
## 476        40-49      0      1      0          0
## 477        40-49      0      1      0          0
## 478        50-59      0      0      1          0
## 479        18-29      0      0      0          0
## 480        40-49      0      1      0          0
## 481        40-49      0      1      0          0
## 482        40-49      0      1      0          0
## 483        30-39      1      0      0          0
## 484        40-49      0      1      0          0
## 485        30-39      1      0      0          0
## 486        30-39      1      0      0          0
## 487        18-29      0      0      0          0
## 488        18-29      0      0      0          0
## 489        40-49      0      1      0          0
## 490        18-29      0      0      0          0
## 491        18-29      0      0      0          0
## 492        50-59      0      0      1          0
## 493        30-39      1      0      0          0
## 494        18-29      0      0      0          0
```

```
## 495        30-39        1        0        0        0
## 496        40-49        0        1        0        0
## 497        30-39        1        0        0        0
## 498        30-39        1        0        0        0
## 499        40-49        0        1        0        0
## 500        40-49        0        1        0        0
## 501        30-39        1        0        0        0
## 502        30-39        1        0        0        0
## 503        30-39        1        0        0        0
## 504        18-29        0        0        0        0
## 505        40-49        0        1        0        0
## 506        18-29        0        0        0        0
## 507        30-39        1        0        0        0
## 508        30-39        1        0        0        0
## 509        30-39        1        0        0        0
## 510        50-59        0        0        1        0
## 511        18-29        0        0        0        0
## 512        30-39        1        0        0        0
## 513        30-39        1        0        0        0
## 514        40-49        0        1        0        0
## 515        40-49        0        1        0        0
## 516        50-59        0        0        1        0
## 517        30-39        1        0        0        0
## 518        30-39        1        0        0        0
## 519        18-29        0        0        0        0
## 520        40-49        0        1        0        0
## 521        30-39        1        0        0        0
## 522        40-49        0        1        0        0
## 523        18-29        0        0        0        0
## 524        18-29        0        0        0        0
## 525        30-39        1        0        0        0
## 526        50-59        0        0        1        0
## 527        40-49        0        1        0        0
## 528        40-49        0        1        0        0
## 529        40-49        0        1        0        0
## 530        30-39        1        0        0        0
## 531        18-29        0        0        0        0
## 532        40-49        0        1        0        0
## 533        18-29        0        0        0        0
## 534        30-39        1        0        0        0
## 535        18-29        0        0        0        0
## 536        30-39        1        0        0        0
## 537        30-39        1        0        0        0
## 538        30-39        1        0        0        0
## 539        50-59        0        0        1        0
## 540        50-59        0        0        1        0
## 541        30-39        1        0        0        0
## 542        30-39        1        0        0        0
## 543        40-49        0        1        0        0
## 544        30-39        1        0        0        0
## 545        30-39        1        0        0        0
## 546        30-39        1        0        0        0
## 547        30-39        1        0        0        0
## 548        40-49        0        1        0        0
```

```
## 549     50-59        0       0       1           0
## 550     18-29        0       0       0           0
## 551     18-29        0       0       0           0
## 552     30-39        1       0       0           0
## 553     30-39        1       0       0           0
## 554     30-39        1       0       0           0
## 555     18-29        0       0       0           0
## 556     40-49        0       1       0           0
## 557     18-29        0       0       0           0
## 558     40-49        0       1       0           0
## 559     40-49        0       1       0           0
## 560     40-49        0       1       0           0
## 561     50-59        0       0       1           0
## 562     30-39        1       0       0           0
## 563     50-59        0       0       1           0
## 564     40-49        0       1       0           0
## 565     50-59        0       0       1           0
## 566     30-39        1       0       0           0
## 567     50-59        0       0       1           0
## 568     18-29        0       0       0           0
## 569     18-29        0       0       0           0
## 570     30-39        1       0       0           0
## 571     50-59        0       0       1           0
## 572     30-39        1       0       0           0
## 573     50-59        0       0       1           0
## 574     40-49        0       1       0           0
## 575     30-39        1       0       0           0
## 576     30-39        1       0       0           0
## 577     18-29        0       0       0           0
## 578     30-39        1       0       0           0
## 579     30-39        1       0       0           0
## 580     50-59        0       0       1           0
## 581     40-49        0       1       0           0
## 582     50-59        0       0       1           0
## 583     30-39        1       0       0           0
## 584  60 or over      0       0       0           1
## 585     30-39        1       0       0           0
## 586     50-59        0       0       1           0
## 587     30-39        1       0       0           0
## 588     40-49        0       1       0           0
## 589     30-39        1       0       0           0
## 590     40-49        0       1       0           0
## 591     40-49        0       1       0           0
## 592     40-49        0       1       0           0
## 593     18-29        0       0       0           0
## 594     40-49        0       1       0           0
## 595     40-49        0       1       0           0
## 596     50-59        0       0       1           0
## 597     40-49        0       1       0           0
## 598     18-29        0       0       0           0
## 599     40-49        0       1       0           0
## 600     40-49        0       1       0           0
## 601     30-39        1       0       0           0
## 602     40-49        0       1       0           0
```

```
## 603    50-59    0    0    1    0
## 604    18-29    0    0    0    0
## 605    50-59    0    0    1    0
## 606    40-49    0    1    0    0
## 607    30-39    1    0    0    0
## 608    50-59    0    0    1    0
## 609    18-29    0    0    0    0
## 610    30-39    1    0    0    0
## 611    40-49    0    1    0    0
## 612    18-29    0    0    0    0
## 613    40-49    0    1    0    0
## 614    30-39    1    0    0    0
## 615    40-49    0    1    0    0
## 616    40-49    0    1    0    0
## 617    30-39    1    0    0    0
## 618    30-39    1    0    0    0
## 619    40-49    0    1    0    0
## 620    40-49    0    1    0    0
## 621    18-29    0    0    0    0
## 622    40-49    0    1    0    0
## 623    50-59    0    0    1    0
## 624    30-39    1    0    0    0
## 625    40-49    0    1    0    0
## 626    18-29    0    0    0    0
## 627    30-39    1    0    0    0
## 628    40-49    0    1    0    0
## 629    30-39    1    0    0    0
## 630    40-49    0    1    0    0
## 631    40-49    0    1    0    0
## 632    30-39    1    0    0    0
## 633    30-39    1    0    0    0
## 634    30-39    1    0    0    0
## 635    30-39    1    0    0    0
## 636    50-59    0    0    1    0
## 637    50-59    0    0    1    0
## 638    40-49    0    1    0    0
## 639    18-29    0    0    0    0
## 640    40-49    0    1    0    0
## 641    30-39    1    0    0    0
## 642    40-49    0    1    0    0
## 643    40-49    0    1    0    0
## 644    30-39    1    0    0    0
## 645    30-39    1    0    0    0
## 646    40-49    0    1    0    0
## 647    18-29    0    0    0    0
## 648    30-39    1    0    0    0
## 649    40-49    0    1    0    0
## 650    50-59    0    0    1    0
## 651    18-29    0    0    0    0
## 652    30-39    1    0    0    0
## 653    18-29    0    0    0    0
## 654    40-49    0    1    0    0
## 655    50-59    0    0    1    0
## 656    50-59    0    0    1    0
```

```
## 657        18-29         0          0          0                0
## 658        30-39         1          0          0                0
## 659        18-29         0          0          0                0
## 660        40-49         0          1          0                0
## 661        30-39         1          0          0                0
## 662        18-29         0          0          0                0
## 663        30-39         1          0          0                0
## 664        40-49         0          1          0                0
## 665        50-59         0          0          1                0
## 666        40-49         0          1          0                0
## 667        40-49         0          1          0                0
## 668        18-29         0          0          0                0
## 669        40-49         0          1          0                0
## 670        30-39         1          0          0                0
## 671        30-39         1          0          0                0
## 672        40-49         0          1          0                0
## 673        50-59         0          0          1                0
## 674        40-49         0          1          0                0
## 675        30-39         1          0          0                0
## 676        30-39         1          0          0                0
## 677        30-39         1          0          0                0
## 678        40-49         0          1          0                0
## 679        50-59         0          0          1                0
## 680        30-39         1          0          0                0
## 681        40-49         0          1          0                0
## 682        50-59         0          0          1                0
## 683        40-49         0          1          0                0
## 684        30-39         1          0          0                0
## 685        30-39         1          0          0                0
## 686        50-59         0          0          1                0
## 687        40-49         0          1          0                0
## 688        18-29         0          0          0                0
## 689        30-39         1          0          0                0
## 690        30-39         1          0          0                0
## 691        40-49         0          1          0                0
## 692        30-39         1          0          0                0
## 693        30-39         1          0          0                0
## 694        30-39         1          0          0                0
## 695        30-39         1          0          0                0
## 696        40-49         0          1          0                0
## 697        18-29         0          0          0                0
## 698        40-49         0          1          0                0
## 699        30-39         1          0          0                0
## 700        40-49         0          1          0                0
## 701        40-49         0          1          0                0
## 702        40-49         0          1          0                0
## 703        30-39         1          0          0                0
## 704        18-29         0          0          0                0
## 705        18-29         0          0          0                0
## 706        50-59         0          0          1                0
## 707        18-29         0          0          0                0
## 708        30-39         1          0          0                0
## 709        50-59         0          0          1                0
## 710        30-39         1          0          0                0
```

```
## 711        30-39      1       0       0       0
## 712        30-39      1       0       0       0
## 713        40-49      0       1       0       0
## 714        18-29      0       0       0       0
## 715        40-49      0       1       0       0
## 716        18-29      0       0       0       0
## 717        30-39      1       0       0       0
## 718        18-29      0       0       0       0
## 719        40-49      0       1       0       0
## 720        40-49      0       1       0       0
## 721        18-29      0       0       0       0
## 722        40-49      0       1       0       0
## 723        40-49      0       1       0       0
## 724        30-39      1       0       0       0
## 725        40-49      0       1       0       0
## 726        40-49      0       1       0       0
## 727        40-49      0       1       0       0
## 728        18-29      0       0       0       0
## 729        50-59      0       0       1       0
## 730        50-59      0       0       1       0
## 731        40-49      0       1       0       0
## 732        30-39      1       0       0       0
## 733        30-39      1       0       0       0
## 734        40-49      0       1       0       0
## 735        18-29      0       0       0       0
## 736        50-59      0       0       1       0
## 737        50-59      0       0       1       0
## 738        30-39      1       0       0       0
## 739        30-39      1       0       0       0
## 740        18-29      0       0       0       0
## 741        30-39      1       0       0       0
## 742        18-29      0       0       0       0
## 743        50-59      0       0       1       0
## 744        40-49      0       1       0       0
## 745        30-39      1       0       0       0
## 746        40-49      0       1       0       0
## 747        40-49      0       1       0       0
## 748        30-39      1       0       0       0
## 749        50-59      0       0       1       0
## 750        30-39      1       0       0       0
## 751        50-59      0       0       1       0
## 752        18-29      0       0       0       0
## 753        40-49      0       1       0       0
## 754        40-49      0       1       0       0
## 755        18-29      0       0       0       0
## 756        40-49      0       1       0       0
## 757        30-39      1       0       0       0
## 758        18-29      0       0       0       0
## 759        40-49      0       1       0       0
## 760        40-49      0       1       0       0
## 761        18-29      0       0       0       0
## 762        18-29      0       0       0       0
## 763        40-49      0       1       0       0
## 764        30-39      1       0       0       0
```

```
## 765       30-39       1       0       0       0
## 766       30-39       1       0       0       0
## 767       50-59       0       0       1       0
## 768       30-39       1       0       0       0
## 769       18-29       0       0       0       0
## 770       18-29       0       0       0       0
## 771       40-49       0       1       0       0
## 772       18-29       0       0       0       0
## 773       18-29       0       0       0       0
## 774       40-49       0       1       0       0
## 775       30-39       1       0       0       0
## 776       30-39       1       0       0       0
## 777       50-59       0       0       1       0
## 778       40-49       0       1       0       0
## 779       40-49       0       1       0       0
## 780       30-39       1       0       0       0
## 781       18-29       0       0       0       0
## 782       40-49       0       1       0       0
## 783       18-29       0       0       0       0
## 784       50-59       0       0       1       0
## 785       40-49       0       1       0       0
## 786       40-49       0       1       0       0
## 787       40-49       0       1       0       0
## 788       40-49       0       1       0       0
## 789       40-49       0       1       0       0
## 790       18-29       0       0       0       0
## 791       18-29       0       0       0       0
## 792       30-39       1       0       0       0
## 793       50-59       0       0       1       0
## 794       30-39       1       0       0       0
## 795       40-49       0       1       0       0
## 796       18-29       0       0       0       0
## 797       40-49       0       1       0       0
## 798       50-59       0       0       1       0
## 799       30-39       1       0       0       0
## 800       30-39       1       0       0       0
## 801       40-49       0       1       0       0
## 802       40-49       0       1       0       0
## 803       18-29       0       0       0       0
## 804       18-29       0       0       0       0
## 805       18-29       0       0       0       0
## 806       30-39       1       0       0       0
## 807       50-59       0       0       1       0
## 808       50-59       0       0       1       0
## 809       30-39       1       0       0       0
## 810       30-39       1       0       0       0
## 811       30-39       1       0       0       0
## 812       40-49       0       1       0       0
## 813       30-39       1       0       0       0
## 814       30-39       1       0       0       0
## 815   60 or over      0       0       0       1
## 816       30-39       1       0       0       0
## 817       30-39       1       0       0       0
## 818       18-29       0       0       0       0
```

```
## 819          30-39          1          0          0          0
## 820          40-49          0          1          0          0
## 821          40-49          0          1          0          0
## 822          18-29          0          0          0          0
## 823          18-29          0          0          0          0
## 824          50-59          0          0          1          0
## 825          40-49          0          1          0          0
## 826          18-29          0          0          0          0
## 827          30-39          1          0          0          0
## 828          40-49          0          1          0          0
## 829          30-39          1          0          0          0
## 830          40-49          0          1          0          0
## 831          30-39          1          0          0          0
## 832          30-39          1          0          0          0
## 833          18-29          0          0          0          0
## 834          18-29          0          0          0          0
## 835          40-49          0          1          0          0
## 836          40-49          0          1          0          0
## 837          40-49          0          1          0          0
## 838          30-39          1          0          0          0
## 839          50-59          0          0          1          0
## 840          50-59          0          0          1          0
## 841          50-59          0          0          1          0
## 842          40-49          0          1          0          0
## 843          30-39          1          0          0          0
## 844          50-59          0          0          1          0
## 845          30-39          1          0          0          0
## 846          40-49          0          1          0          0
## 847          40-49          0          1          0          0
## 848          50-59          0          0          1          0
## 849          18-29          0          0          0          0
## 850          40-49          0          1          0          0
## 851          50-59          0          0          1          0
## 852          18-29          0          0          0          0
## 853          30-39          1          0          0          0
## 854          30-39          1          0          0          0
## 855          40-49          0          1          0          0
## 856          18-29          0          0          0          0
## 857          30-39          1          0          0          0
## 858          40-49          0          1          0          0
## 859          40-49          0          1          0          0
## 860          30-39          1          0          0          0
## 861          50-59          0          0          1          0
## 862          40-49          0          1          0          0
## 863          18-29          0          0          0          0
## 864          30-39          1          0          0          0
## 865          30-39          1          0          0          0
## 866          18-29          0          0          0          0
## 867          50-59          0          0          1          0
## 868          18-29          0          0          0          0
## 869          30-39          1          0          0          0
## 870          18-29          0          0          0          0
## 871          30-39          1          0          0          0
## 872          30-39          1          0          0          0
```

```
## 873       30-39       1       0       0       0
## 874       30-39       1       0       0       0
## 875       30-39       1       0       0       0
## 876       50-59       0       0       1       0
## 877       50-59       0       0       1       0
## 878       50-59       0       0       1       0
## 879       40-49       0       1       0       0
## 880       40-49       0       1       0       0
## 881   60 or over      0       0       0       1
## 882       40-49       0       1       0       0
## 883       40-49       0       1       0       0
## 884       40-49       0       1       0       0
## 885       40-49       0       1       0       0
## 886       30-39       1       0       0       0
## 887       40-49       0       1       0       0
## 888       40-49       0       1       0       0
## 889       30-39       1       0       0       0
## 890       40-49       0       1       0       0
## 891       40-49       0       1       0       0
## 892       50-59       0       0       1       0
## 893       18-29       0       0       0       0
## 894       18-29       0       0       0       0
## 895       18-29       0       0       0       0
## 896       50-59       0       0       1       0
## 897       40-49       0       1       0       0
## 898       30-39       1       0       0       0
## 899       30-39       1       0       0       0
## 900   60 or over      0       0       0       1
## 901       50-59       0       0       1       0
## 902       18-29       0       0       0       0
## 903       30-39       1       0       0       0
## 904       30-39       1       0       0       0
## 905       40-49       0       1       0       0
## 906       30-39       1       0       0       0
## 907       40-49       0       1       0       0
## 908       18-29       0       0       0       0
## 909       18-29       0       0       0       0
## 910       50-59       0       0       1       0
## 911       30-39       1       0       0       0
## 912       40-49       0       1       0       0
## 913       30-39       1       0       0       0
## 914       50-59       0       0       1       0
## 915       40-49       0       1       0       0
## 916       30-39       1       0       0       0
## 917       50-59       0       0       1       0
## 918       40-49       0       1       0       0
## 919       30-39       1       0       0       0
## 920       40-49       0       1       0       0
## 921       50-59       0       0       1       0
## 922       40-49       0       1       0       0
## 923       40-49       0       1       0       0
## 924       50-59       0       0       1       0
## 925       18-29       0       0       0       0
## 926       30-39       1       0       0       0
```

```
## 927      18-29       0      0      0          0
## 928      18-29       0      0      0          0
## 929      30-39       1      0      0          0
## 930      30-39       1      0      0          0
## 931      30-39       1      0      0          0
## 932      40-49       0      1      0          0
## 933      18-29       0      0      0          0
## 934      30-39       1      0      0          0
## 935      40-49       0      1      0          0
## 936      40-49       0      1      0          0
## 937      18-29       0      0      0          0
## 938      30-39       1      0      0          0
## 939      40-49       0      1      0          0
## 940      40-49       0      1      0          0
## 941      18-29       0      0      0          0
## 942      30-39       1      0      0          0
## 943      40-49       0      1      0          0
## 944      30-39       1      0      0          0
## 945      30-39       1      0      0          0
## 946      30-39       1      0      0          0
## 947      50-59       0      0      1          0
## 948      50-59       0      0      1          0
## 949      50-59       0      0      1          0
## 950      40-49       0      1      0          0
## 951      30-39       1      0      0          0
## 952      18-29       0      0      0          0
## 953      30-39       1      0      0          0
## 954      40-49       0      1      0          0
## 955      50-59       0      0      1          0
## 956      18-29       0      0      0          0
## 957      30-39       1      0      0          0
## 958      40-49       0      1      0          0
## 959      18-29       0      0      0          0
## 960      40-49       0      1      0          0
## 961      50-59       0      0      1          0
## 962      18-29       0      0      0          0
## 963      18-29       0      0      0          0
## 964      40-49       0      1      0          0
## 965      30-39       1      0      0          0
## 966  60 or over      0      0      0          1
## 967  60 or over      0      0      0          1
## 968      18-29       0      0      0          0
## 969      40-49       0      1      0          0
## 970      50-59       0      0      1          0
## 971      50-59       0      0      1          0
## 972      18-29       0      0      0          0
## 973      30-39       1      0      0          0
## 974      40-49       0      1      0          0
## 975      30-39       1      0      0          0
## 976      40-49       0      1      0          0
## 977      30-39       1      0      0          0
## 978      50-59       0      0      1          0
## 979      30-39       1      0      0          0
## 980      50-59       0      0      1          0
```

```
## 981    50-59    0    0    1    0
## 982    18-29    0    0    0    0
## 983    50-59    0    0    1    0
## 984    18-29    0    0    0    0
## 985    30-39    1    0    0    0
## 986    18-29    0    0    0    0
## 987    40-49    0    1    0    0
## 988    50-59    0    0    1    0
## 989    30-39    1    0    0    0
## 990    18-29    0    0    0    0
## 991    18-29    0    0    0    0
## 992    40-49    0    1    0    0
## 993    30-39    1    0    0    0
## 994    30-39    1    0    0    0
## 995    50-59    0    0    1    0
## 996    30-39    1    0    0    0
## 997    30-39    1    0    0    0
## 998    30-39    1    0    0    0
## 999    40-49    0    1    0    0
## 1000   40-49    0    1    0    0
## 1001   18-29    0    0    0    0
## 1002   30-39    1    0    0    0
## 1003   18-29    0    0    0    0
## 1004   40-49    0    1    0    0
## 1005   50-59    0    0    1    0
## 1006   30-39    1    0    0    0
## 1007   50-59    0    0    1    0
## 1008   40-49    0    1    0    0
## 1009   50-59    0    0    1    0
## 1010   18-29    0    0    0    0
## 1011   40-49    0    1    0    0
## 1012   30-39    1    0    0    0
## 1013   40-49    0    1    0    0
## 1014   30-39    1    0    0    0
## 1015   50-59    0    0    1    0
## 1016   18-29    0    0    0    0
## 1017   18-29    0    0    0    0
## 1018   30-39    1    0    0    0
## 1019   40-49    0    1    0    0
## 1020   18-29    0    0    0    0
## 1021   50-59    0    0    1    0
## 1022   18-29    0    0    0    0
## 1023   40-49    0    1    0    0
## 1024   18-29    0    0    0    0
## 1025   50-59    0    0    1    0
## 1026   30-39    1    0    0    0
## 1027   30-39    1    0    0    0
## 1028   30-39    1    0    0    0
## 1029   40-49    0    1    0    0
## 1030   40-49    0    1    0    0
## 1031   30-39    1    0    0    0
## 1032   50-59    0    0    1    0
## 1033   30-39    1    0    0    0
## 1034   50-59    0    0    1    0
```

```
## 1035    40-49    0    1    0    0
## 1036    30-39    1    0    0    0
## 1037    40-49    0    1    0    0
## 1038    18-29    0    0    0    0
## 1039    30-39    1    0    0    0
## 1040    30-39    1    0    0    0
## 1041    40-49    0    1    0    0
## 1042    30-39    1    0    0    0
## 1043    40-49    0    1    0    0
## 1044    30-39    1    0    0    0
## 1045    40-49    0    1    0    0
## 1046    40-49    0    1    0    0
## 1047    30-39    1    0    0    0
## 1048    40-49    0    1    0    0
## 1049    40-49    0    1    0    0
## 1050    30-39    1    0    0    0
## 1051    30-39    1    0    0    0
## 1052    50-59    0    0    1    0
## 1053    18-29    0    0    0    0
## 1054    18-29    0    0    0    0
## 1055    40-49    0    1    0    0
## 1056    40-49    0    1    0    0
## 1057    30-39    1    0    0    0
## 1058    18-29    0    0    0    0
## 1059    18-29    0    0    0    0
## 1060    40-49    0    1    0    0
## 1061    40-49    0    1    0    0
## 1062    30-39    1    0    0    0
## 1063    40-49    0    1    0    0
## 1064    18-29    0    0    0    0
## 1065    18-29    0    0    0    0
## 1066    50-59    0    0    1    0
## 1067    18-29    0    0    0    0
## 1068    50-59    0    0    1    0
## 1069    30-39    1    0    0    0
## 1070    50-59    0    0    1    0
## 1071    40-49    0    1    0    0
## 1072    18-29    0    0    0    0
## 1073    30-39    1    0    0    0
## 1074    50-59    0    0    1    0
## 1075    40-49    0    1    0    0
## 1076    40-49    0    1    0    0
## 1077    40-49    0    1    0    0
## 1078    30-39    1    0    0    0
## 1079    18-29    0    0    0    0
## 1080    30-39    1    0    0    0
## 1081    18-29    0    0    0    0
## 1082    30-39    1    0    0    0
## 1083    30-39    1    0    0    0
## 1084    18-29    0    0    0    0
## 1085    18-29    0    0    0    0
## 1086    40-49    0    1    0    0
## 1087    40-49    0    1    0    0
## 1088    40-49    0    1    0    0
```

```
## 1089        30-39        1        0        0        0
## 1090        30-39        1        0        0        0
## 1091        50-59        0        0        1        0
## 1092        40-49        0        1        0        0
## 1093        18-29        0        0        0        0
## 1094        50-59        0        0        1        0
## 1095        50-59        0        0        1        0
## 1096        30-39        1        0        0        0
## 1097        18-29        0        0        0        0
## 1098        18-29        0        0        0        0
## 1099        40-49        0        1        0        0
## 1100        50-59        0        0        1        0
## 1101        40-49        0        1        0        0
## 1102        18-29        0        0        0        0
## 1103        30-39        1        0        0        0
## 1104        50-59        0        0        1        0
## 1105        40-49        0        1        0        0
## 1106        30-39        1        0        0        0
## 1107        18-29        0        0        0        0
## 1108        18-29        0        0        0        0
## 1109        18-29        0        0        0        0
## 1110        40-49        0        1        0        0
## 1111        30-39        1        0        0        0
## 1112 60 or over        0        0        0        1
## 1113        30-39        1        0        0        0
## 1114        18-29        0        0        0        0
## 1115        40-49        0        1        0        0
## 1116        18-29        0        0        0        0
## 1117        30-39        1        0        0        0
## 1118        18-29        0        0        0        0
## 1119        18-29        0        0        0        0
## 1120        40-49        0        1        0        0
## 1121        50-59        0        0        1        0
## 1122        40-49        0        1        0        0
## 1123        18-29        0        0        0        0
## 1124        18-29        0        0        0        0
## 1125        30-39        1        0        0        0
## 1126        40-49        0        1        0        0
## 1127        30-39        1        0        0        0
## 1128        18-29        0        0        0        0
## 1129        30-39        1        0        0        0
## 1130        40-49        0        1        0        0
## 1131        30-39        1        0        0        0
## 1132        50-59        0        0        1        0
## 1133        30-39        1        0        0        0
## 1134        40-49        0        1        0        0
## 1135        40-49        0        1        0        0
## 1136        18-29        0        0        0        0
## 1137        40-49        0        1        0        0
## 1138        30-39        1        0        0        0
## 1139        40-49        0        1        0        0
## 1140        18-29        0        0        0        0
## 1141        30-39        1        0        0        0
## 1142        40-49        0        1        0        0
```

```
## 1143    30-39    1    0    0    0
## 1144    30-39    1    0    0    0
## 1145    40-49    0    1    0    0
## 1146    30-39    1    0    0    0
## 1147    40-49    0    1    0    0
## 1148    40-49    0    1    0    0
## 1149    30-39    1    0    0    0
## 1150    18-29    0    0    0    0
## 1151    50-59    0    0    1    0
## 1152    40-49    0    1    0    0
## 1153    18-29    0    0    0    0
## 1154    30-39    1    0    0    0
## 1155    50-59    0    0    1    0
## 1156    30-39    1    0    0    0
## 1157    50-59    0    0    1    0
## 1158    18-29    0    0    0    0
## 1159    30-39    1    0    0    0
## 1160    30-39    1    0    0    0
## 1161    40-49    0    1    0    0
## 1162    40-49    0    1    0    0
## 1163    30-39    1    0    0    0
## 1164    40-49    0    1    0    0
## 1165    18-29    0    0    0    0
## 1166    40-49    0    1    0    0
## 1167    30-39    1    0    0    0
## 1168    50-59    0    0    1    0
## 1169    18-29    0    0    0    0
## 1170    40-49    0    1    0    0
## 1171    30-39    1    0    0    0
## 1172    40-49    0    1    0    0
## 1173    30-39    1    0    0    0
## 1174    18-29    0    0    0    0
## 1175    40-49    0    1    0    0
## 1176    18-29    0    0    0    0
## 1177    50-59    0    0    1    0
## 1178    40-49    0    1    0    0
## 1179    30-39    1    0    0    0
## 1180    40-49    0    1    0    0
## 1181    50-59    0    0    1    0
## 1182    30-39    1    0    0    0
## 1183    18-29    0    0    0    0
## 1184    40-49    0    1    0    0
## 1185    40-49    0    1    0    0
## 1186    50-59    0    0    1    0
## 1187    50-59    0    0    1    0
## 1188    30-39    1    0    0    0
## 1189    50-59    0    0    1    0
## 1190    30-39    1    0    0    0
## 1191    40-49    0    1    0    0
## 1192    30-39    1    0    0    0
## 1193    18-29    0    0    0    0
## 1194    40-49    0    1    0    0
## 1195    40-49    0    1    0    0
## 1196    40-49    0    1    0    0
```

```
## 1197        30-39     1      0      0      0
## 1198        50-59     0      0      1      0
## 1199        40-49     0      1      0      0
## 1200        40-49     0      1      0      0
## 1201        30-39     1      0      0      0
## 1202        30-39     1      0      0      0
## 1203        40-49     0      1      0      0
## 1204        30-39     1      0      0      0
## 1205        30-39     1      0      0      0
## 1206        50-59     0      0      1      0
## 1207        30-39     1      0      0      0
## 1208        30-39     1      0      0      0
## 1209        40-49     0      1      0      0
## 1210        30-39     1      0      0      0
## 1211        40-49     0      1      0      0
## 1212        50-59     0      0      1      0
## 1213        30-39     1      0      0      0
## 1214        18-29     0      0      0      0
## 1215        40-49     0      1      0      0
## 1216 60 or over       0      0      0      1
## 1217        40-49     0      1      0      0
## 1218        30-39     1      0      0      0
## 1219        30-39     1      0      0      0
## 1220        30-39     1      0      0      0
## 1221        40-49     0      1      0      0
## 1222        50-59     0      0      1      0
## 1223        50-59     0      0      1      0
## 1224        40-49     0      1      0      0
## 1225        30-39     1      0      0      0
## 1226        40-49     0      1      0      0
## 1227        40-49     0      1      0      0
## 1228        30-39     1      0      0      0
## 1229        18-29     0      0      0      0
## 1230        50-59     0      0      1      0
## 1231        50-59     0      0      1      0
## 1232        50-59     0      0      1      0
## 1233        50-59     0      0      1      0
## 1234 60 or over       0      0      0      1
## 1235        30-39     1      0      0      0
## 1236        18-29     0      0      0      0
## 1237        50-59     0      0      1      0
## 1238        30-39     1      0      0      0
## 1239        30-39     1      0      0      0
## 1240        18-29     0      0      0      0
## 1241        30-39     1      0      0      0
## 1242        30-39     1      0      0      0
## 1243        18-29     0      0      0      0
## 1244        18-29     0      0      0      0
## 1245        18-29     0      0      0      0
## 1246        30-39     1      0      0      0
## 1247        30-39     1      0      0      0
## 1248        50-59     0      0      1      0
## 1249        40-49     0      1      0      0
## 1250        18-29     0      0      0      0
```

```
## 1251         40-49       0       1       0           0
## 1252         30-39       1       0       0           0
## 1253         30-39       1       0       0           0
## 1254         18-29       0       0       0           0
## 1255 60 or over          0       0       0           1
## 1256         18-29       0       0       0           0
## 1257         40-49       0       1       0           0
## 1258         18-29       0       0       0           0
## 1259         30-39       1       0       0           0
## 1260         30-39       1       0       0           0
## 1261         30-39       1       0       0           0
## 1262         40-49       0       1       0           0
## 1263 60 or over          0       0       0           1
## 1264         18-29       0       0       0           0
## 1265         18-29       0       0       0           0
## 1266         30-39       1       0       0           0
## 1267         50-59       0       0       1           0
## 1268         30-39       1       0       0           0
## 1269         40-49       0       1       0           0
## 1270         30-39       1       0       0           0
## 1271         30-39       1       0       0           0
## 1272         50-59       0       0       1           0
## 1273         40-49       0       1       0           0
## 1274         30-39       1       0       0           0
## 1275         30-39       1       0       0           0
## 1276         40-49       0       1       0           0
## 1277         30-39       1       0       0           0
## 1278         30-39       1       0       0           0
## 1279         18-29       0       0       0           0
## 1280         40-49       0       1       0           0
## 1281         40-49       0       1       0           0
## 1282         30-39       1       0       0           0
## 1283         50-59       0       0       1           0
## 1284         18-29       0       0       0           0
## 1285         18-29       0       0       0           0
## 1286         50-59       0       0       1           0
## 1287         30-39       1       0       0           0
## 1288         40-49       0       1       0           0
## 1289         30-39       1       0       0           0
## 1290         30-39       1       0       0           0
## 1291         18-29       0       0       0           0
## 1292         30-39       1       0       0           0
## 1293         50-59       0       0       1           0
## 1294         30-39       1       0       0           0
## 1295         30-39       1       0       0           0
## 1296         18-29       0       0       0           0
## 1297         18-29       0       0       0           0
## 1298         30-39       1       0       0           0
## 1299         18-29       0       0       0           0
## 1300         50-59       0       0       1           0
## 1301         30-39       1       0       0           0
## 1302         18-29       0       0       0           0
## 1303         50-59       0       0       1           0
## 1304         40-49       0       1       0           0
```

```
## 1305      18-29       0        0        0        0
## 1306      18-29       0        0        0        0
## 1307      30-39       1        0        0        0
## 1308      30-39       1        0        0        0
## 1309      40-49       0        1        0        0
## 1310      50-59       0        0        1        0
## 1311      50-59       0        0        1        0
## 1312      50-59       0        0        1        0
## 1313 60 or over       0        0        0        1
## 1314      40-49       0        1        0        0
## 1315      30-39       1        0        0        0
## 1316      40-49       0        1        0        0
## 1317      30-39       1        0        0        0
## 1318      30-39       1        0        0        0
## 1319      40-49       0        1        0        0
## 1320      40-49       0        1        0        0
## 1321      40-49       0        1        0        0
## 1322      40-49       0        1        0        0
## 1323      40-49       0        1        0        0
## 1324 60 or over       0        0        0        1
## 1325      50-59       0        0        1        0
## 1326      18-29       0        0        0        0
## 1327      18-29       0        0        0        0
## 1328      30-39       1        0        0        0
## 1329      30-39       1        0        0        0
## 1330      30-39       1        0        0        0
## 1331      18-29       0        0        0        0
## 1332      40-49       0        1        0        0
## 1333      40-49       0        1        0        0
## 1334      40-49       0        1        0        0
## 1335      18-29       0        0        0        0
## 1336      30-39       1        0        0        0
## 1337      40-49       0        1        0        0
## 1338      40-49       0        1        0        0
## 1339 60 or over       0        0        0        1
## 1340      40-49       0        1        0        0
## 1341      40-49       0        1        0        0
## 1342      18-29       0        0        0        0
## 1343      30-39       1        0        0        0
## 1344      18-29       0        0        0        0
## 1345      18-29       0        0        0        0
## 1346      18-29       0        0        0        0
## 1347      40-49       0        1        0        0
## 1348      40-49       0        1        0        0
## 1349      40-49       0        1        0        0
## 1350      50-59       0        0        1        0
## 1351      40-49       0        1        0        0
## 1352      50-59       0        0        1        0
## 1353      18-29       0        0        0        0
## 1354      50-59       0        0        1        0
## 1355      18-29       0        0        0        0
## 1356      40-49       0        1        0        0
## 1357      18-29       0        0        0        0
## 1358      30-39       1        0        0        0
```

```
## 1359    30-39    1    0    0    0
## 1360    18-29    0    0    0    0
## 1361    18-29    0    0    0    0
## 1362    50-59    0    0    1    0
## 1363    18-29    0    0    0    0
## 1364    50-59    0    0    1    0
## 1365    18-29    0    0    0    0
## 1366    18-29    0    0    0    0
## 1367    40-49    0    1    0    0
## 1368    30-39    1    0    0    0
## 1369    40-49    0    1    0    0
## 1370    18-29    0    0    0    0
## 1371    40-49    0    1    0    0
## 1372    50-59    0    0    1    0
## 1373    40-49    0    1    0    0
## 1374    40-49    0    1    0    0
## 1375    50-59    0    0    1    0
## 1376    50-59    0    0    1    0
## 1377    30-39    1    0    0    0
## 1378    18-29    0    0    0    0
## 1379    30-39    1    0    0    0
## 1380    40-49    0    1    0    0
## 1381    50-59    0    0    1    0
## 1382    18-29    0    0    0    0
## 1383    30-39    1    0    0    0
## 1384    30-39    1    0    0    0
## 1385    50-59    0    0    1    0
## 1386    40-49    0    1    0    0
## 1387    40-49    0    1    0    0
## 1388    50-59    0    0    1    0
## 1389    40-49    0    1    0    0
## 1390    50-59    0    0    1    0
## 1391    40-49    0    1    0    0
## 1392    40-49    0    1    0    0
## 1393    18-29    0    0    0    0
## 1394    50-59    0    0    1    0
## 1395    40-49    0    1    0    0
## 1396    40-49    0    1    0    0
## 1397    40-49    0    1    0    0
## 1398    30-39    1    0    0    0
## 1399    18-29    0    0    0    0
## 1400    30-39    1    0    0    0
## 1401    30-39    1    0    0    0
## 1402    30-39    1    0    0    0
## 1403    18-29    0    0    0    0
## 1404    40-49    0    1    0    0
## 1405    40-49    0    1    0    0
## 1406    30-39    1    0    0    0
## 1407    30-39    1    0    0    0
## 1408    40-49    0    1    0    0
## 1409    40-49    0    1    0    0
## 1410    40-49    0    1    0    0
## 1411    30-39    1    0    0    0
## 1412    40-49    0    1    0    0
```

```
## 1413     30-39        1         0         0              0
## 1414     40-49        0         1         0              0
## 1415     18-29        0         0         0              0
## 1416     40-49        0         1         0              0
## 1417     18-29        0         0         0              0
## 1418     30-39        1         0         0              0
## 1419     30-39        1         0         0              0
## 1420     30-39        1         0         0              0
## 1421     30-39        1         0         0              0
## 1422     40-49        0         1         0              0
## 1423     30-39        1         0         0              0
## 1424     18-29        0         0         0              0
## 1425     30-39        1         0         0              0
## 1426     30-39        1         0         0              0
## 1427     50-59        0         0         1              0
## 1428     40-49        0         1         0              0
## 1429     40-49        0         1         0              0
## 1430     50-59        0         0         1              0
## 1431     18-29        0         0         0              0
## 1432     30-39        1         0         0              0
## 1433     18-29        0         0         0              0
## 1434     18-29        0         0         0              0
## 1435     50-59        0         0         1              0
## 1436     50-59        0         0         1              0
## 1437     30-39        1         0         0              0
## 1438     40-49        0         1         0              0
## 1439     18-29        0         0         0              0
## 1440     40-49        0         1         0              0
## 1441     30-39        1         0         0              0
## 1442     40-49        0         1         0              0
## 1443 60 or over       0         0         0              1
## 1444     40-49        0         1         0              0
## 1445     30-39        1         0         0              0
## 1446     40-49        0         1         0              0
## 1447     40-49        0         1         0              0
## 1448     40-49        0         1         0              0
## 1449     30-39        1         0         0              0
## 1450     18-29        0         0         0              0
## 1451     40-49        0         1         0              0
## 1452     40-49        0         1         0              0
## 1453     50-59        0         0         1              0
## 1454     30-39        1         0         0              0
## 1455     40-49        0         1         0              0
## 1456     50-59        0         0         1              0
## 1457     40-49        0         1         0              0
## 1458     40-49        0         1         0              0
## 1459     30-39        1         0         0              0
## 1460     18-29        0         0         0              0
## 1461     50-59        0         0         1              0
## 1462     40-49        0         1         0              0
## 1463     30-39        1         0         0              0
## 1464     30-39        1         0         0              0
## 1465     50-59        0         0         1              0
## 1466     30-39        1         0         0              0
```

```
## 1467        18-29        0        0        0        0
## 1468        40-49        0        1        0        0
## 1469        40-49        0        1        0        0
## 1470        30-39        1        0        0        0
## 1471        30-39        1        0        0        0
## 1472        30-39        1        0        0        0
## 1473        50-59        0        0        1        0
## 1474        40-49        0        1        0        0
## 1475        30-39        1        0        0        0
## 1476        50-59        0        0        1        0
## 1477        50-59        0        0        1        0
## 1478        40-49        0        1        0        0
## 1479        50-59        0        0        1        0
## 1480        30-39        1        0        0        0
## 1481        50-59        0        0        1        0
## 1482        40-49        0        1        0        0
## 1483        30-39        1        0        0        0
## 1484        30-39        1        0        0        0
## 1485        50-59        0        0        1        0
## 1486        30-39        1        0        0        0
## 1487        40-49        0        1        0        0
## 1488        50-59        0        0        1        0
## 1489        18-29        0        0        0        0
## 1490        50-59        0        0        1        0
## 1491        30-39        1        0        0        0
## 1492        30-39        1        0        0        0
## 1493        50-59        0        0        1        0
## 1494        30-39        1        0        0        0
## 1495        40-49        0        1        0        0
## 1496        18-29        0        0        0        0
## 1497        40-49        0        1        0        0
## 1498        40-49        0        1        0        0
## 1499        40-49        0        1        0        0
## 1500        40-49        0        1        0        0
## 1501        18-29        0        0        0        0
## 1502        40-49        0        1        0        0
## 1503        40-49        0        1        0        0
## 1504 60 or over        0        0        0        1
## 1505        30-39        1        0        0        0
## 1506        18-29        0        0        0        0
## 1507        30-39        1        0        0        0
## 1508        18-29        0        0        0        0
## 1509        30-39        1        0        0        0
## 1510 60 or over        0        0        0        1
## 1511        50-59        0        0        1        0
## 1512        18-29        0        0        0        0
## 1513        50-59        0        0        1        0
## 1514        30-39        1        0        0        0
## 1515        40-49        0        1        0        0
## 1516        50-59        0        0        1        0
## 1517        40-49        0        1        0        0
## 1518        40-49        0        1        0        0
## 1519        40-49        0        1        0        0
## 1520        30-39        1        0        0        0
```

```
## 1521      30-39     1     0     0     0
## 1522      40-49     0     1     0     0
## 1523      30-39     1     0     0     0
## 1524      18-29     0     0     0     0
## 1525      18-29     0     0     0     0
## 1526      18-29     0     0     0     0
## 1527      30-39     1     0     0     0
## 1528      40-49     0     1     0     0
## 1529      18-29     0     0     0     0
## 1530      30-39     1     0     0     0
## 1531 60 or over     0     0     0     1
## 1532      50-59     0     0     1     0
## 1533      50-59     0     0     1     0
## 1534      40-49     0     1     0     0
## 1535      18-29     0     0     0     0
## 1536      18-29     0     0     0     0
## 1537      30-39     1     0     0     0
## 1538      50-59     0     0     1     0
## 1539      40-49     0     1     0     0
## 1540      40-49     0     1     0     0
## 1541      30-39     1     0     0     0
## 1542      50-59     0     0     1     0
## 1543 60 or over     0     0     0     1
## 1544      50-59     0     0     1     0
## 1545      18-29     0     0     0     0
## 1546      18-29     0     0     0     0
## 1547      30-39     1     0     0     0
## 1548      30-39     1     0     0     0
## 1549      30-39     1     0     0     0
## 1550      40-49     0     1     0     0
## 1551      30-39     1     0     0     0
## 1552      40-49     0     1     0     0
## 1553      30-39     1     0     0     0
## 1554      18-29     0     0     0     0
## 1555      50-59     0     0     1     0
## 1556      18-29     0     0     0     0
## 1557      18-29     0     0     0     0
## 1558      50-59     0     0     1     0
## 1559      18-29     0     0     0     0
## 1560      40-49     0     1     0     0
## 1561      40-49     0     1     0     0
## 1562      30-39     1     0     0     0
## 1563      18-29     0     0     0     0
## 1564      30-39     1     0     0     0
## 1565      30-39     1     0     0     0
## 1566      18-29     0     0     0     0
## 1567      40-49     0     1     0     0
## 1568      30-39     1     0     0     0
## 1569      40-49     0     1     0     0
## 1570      40-49     0     1     0     0
## 1571      18-29     0     0     0     0
## 1572      50-59     0     0     1     0
## 1573 60 or over     0     0     0     1
## 1574      40-49     0     1     0     0
```

69

```
## 1575        18-29        0        0        0        0
## 1576        18-29        0        0        0        0
## 1577        30-39        1        0        0        0
## 1578        18-29        0        0        0        0
## 1579        40-49        0        1        0        0
## 1580        40-49        0        1        0        0
## 1581        30-39        1        0        0        0
## 1582        50-59        0        0        1        0
## 1583        30-39        1        0        0        0
## 1584        50-59        0        0        1        0
## 1585        50-59        0        0        1        0
## 1586        18-29        0        0        0        0
## 1587        18-29        0        0        0        0
## 1588        40-49        0        1        0        0
## 1589        30-39        1        0        0        0
## 1590        18-29        0        0        0        0
## 1591        30-39        1        0        0        0
## 1592        30-39        1        0        0        0
## 1593        40-49        0        1        0        0
## 1594        30-39        1        0        0        0
## 1595        30-39        1        0        0        0
## 1596        18-29        0        0        0        0
## 1597        50-59        0        0        1        0
## 1598        30-39        1        0        0        0
## 1599        30-39        1        0        0        0
## 1600        30-39        1        0        0        0
## 1601        30-39        1        0        0        0
## 1602        30-39        1        0        0        0
## 1603        30-39        1        0        0        0
## 1604        40-49        0        1        0        0
## 1605        50-59        0        0        1        0
## 1606        50-59        0        0        1        0
## 1607        18-29        0        0        0        0
## 1608        30-39        1        0        0        0
## 1609 60 or over        0        0        0        1
## 1610        40-49        0        1        0        0
## 1611        30-39        1        0        0        0
## 1612 60 or over        0        0        0        1
## 1613        30-39        1        0        0        0
## 1614        18-29        0        0        0        0
## 1615        30-39        1        0        0        0
## 1616        40-49        0        1        0        0
## 1617        18-29        0        0        0        0
## 1618        18-29        0        0        0        0
## 1619        50-59        0        0        1        0
## 1620        40-49        0        1        0        0
## 1621        50-59        0        0        1        0
## 1622        50-59        0        0        1        0
## 1623        40-49        0        1        0        0
## 1624        30-39        1        0        0        0
## 1625        18-29        0        0        0        0
## 1626        40-49        0        1        0        0
## 1627        40-49        0        1        0        0
## 1628        40-49        0        1        0        0
```

```
## 1629    30-39    1    0    0    0
## 1630    30-39    1    0    0    0
## 1631    18-29    0    0    0    0
## 1632    40-49    0    1    0    0
## 1633    40-49    0    1    0    0
## 1634    50-59    0    0    1    0
## 1635    50-59    0    0    1    0
## 1636    50-59    0    0    1    0
## 1637    50-59    0    0    1    0
## 1638    40-49    0    1    0    0
## 1639    50-59    0    0    1    0
## 1640    40-49    0    1    0    0
## 1641    30-39    1    0    0    0
## 1642    30-39    1    0    0    0
## 1643    40-49    0    1    0    0
## 1644    18-29    0    0    0    0
## 1645    40-49    0    1    0    0
## 1646    40-49    0    1    0    0
## 1647    30-39    1    0    0    0
## 1648    30-39    1    0    0    0
## 1649    30-39    1    0    0    0
## 1650    30-39    1    0    0    0
## 1651    40-49    0    1    0    0
## 1652    30-39    1    0    0    0
## 1653    18-29    0    0    0    0
## 1654    30-39    1    0    0    0
## 1655    40-49    0    1    0    0
## 1656    40-49    0    1    0    0
## 1657    30-39    1    0    0    0
## 1658    40-49    0    1    0    0
## 1659    30-39    1    0    0    0
## 1660    40-49    0    1    0    0
## 1661    40-49    0    1    0    0
## 1662    50-59    0    0    1    0
## 1663    30-39    1    0    0    0
## 1664    50-59    0    0    1    0
## 1665    18-29    0    0    0    0
## 1666    40-49    0    1    0    0
## 1667    50-59    0    0    1    0
## 1668    50-59    0    0    1    0
## 1669    30-39    1    0    0    0
## 1670    50-59    0    0    1    0
## 1671    40-49    0    1    0    0
## 1672    18-29    0    0    0    0
## 1673    40-49    0    1    0    0
## 1674    50-59    0    0    1    0
## 1675    40-49    0    1    0    0
## 1676    40-49    0    1    0    0
## 1677    50-59    0    0    1    0
## 1678    50-59    0    0    1    0
## 1679    50-59    0    0    1    0
## 1680    30-39    1    0    0    0
## 1681    40-49    0    1    0    0
## 1682    30-39    1    0    0    0
```

```
## 1683      30-39       1        0        0           0
## 1684      30-39       1        0        0           0
## 1685      40-49       0        1        0           0
## 1686      18-29       0        0        0           0
## 1687      50-59       0        0        1           0
## 1688      40-49       0        1        0           0
## 1689      40-49       0        1        0           0
## 1690      30-39       1        0        0           0
## 1691      30-39       1        0        0           0
## 1692      30-39       1        0        0           0
## 1693      40-49       0        1        0           0
## 1694      50-59       0        0        1           0
## 1695      40-49       0        1        0           0
## 1696      18-29       0        0        0           0
## 1697      30-39       1        0        0           0
## 1698      18-29       0        0        0           0
## 1699      18-29       0        0        0           0
## 1700      30-39       1        0        0           0
## 1701      40-49       0        1        0           0
## 1702      30-39       1        0        0           0
## 1703      40-49       0        1        0           0
## 1704      40-49       0        1        0           0
## 1705      40-49       0        1        0           0
## 1706      30-39       1        0        0           0
## 1707      18-29       0        0        0           0
## 1708      18-29       0        0        0           0
## 1709      40-49       0        1        0           0
## 1710      40-49       0        1        0           0
## 1711      50-59       0        0        1           0
## 1712      50-59       0        0        1           0
## 1713      50-59       0        0        1           0
## 1714      40-49       0        1        0           0
## 1715      30-39       1        0        0           0
## 1716      40-49       0        1        0           0
## 1717      40-49       0        1        0           0
## 1718      18-29       0        0        0           0
## 1719      30-39       1        0        0           0
## 1720      18-29       0        0        0           0
## 1721      30-39       1        0        0           0
## 1722      30-39       1        0        0           0
## 1723      50-59       0        0        1           0
## 1724 60 or over       0        0        0           1
## 1725      40-49       0        1        0           0
## 1726      40-49       0        1        0           0
## 1727      30-39       1        0        0           0
## 1728      40-49       0        1        0           0
## 1729      18-29       0        0        0           0
## 1730      40-49       0        1        0           0
## 1731      30-39       1        0        0           0
## 1732      18-29       0        0        0           0
## 1733      40-49       0        1        0           0
## 1734      40-49       0        1        0           0
## 1735      40-49       0        1        0           0
## 1736      40-49       0        1        0           0
```

```
## 1737      40-49        0        1        0              0
## 1738      30-39        1        0        0              0
## 1739      30-39        1        0        0              0
## 1740      18-29        0        0        0              0
## 1741      50-59        0        0        1              0
## 1742      30-39        1        0        0              0
## 1743      50-59        0        0        1              0
## 1744      30-39        1        0        0              0
## 1745      30-39        1        0        0              0
## 1746      40-49        0        1        0              0
## 1747      50-59        0        0        1              0
## 1748      50-59        0        0        1              0
## 1749      40-49        0        1        0              0
## 1750      18-29        0        0        0              0
## 1751      30-39        1        0        0              0
## 1752      18-29        0        0        0              0
## 1753      40-49        0        1        0              0
## 1754      18-29        0        0        0              0
## 1755      18-29        0        0        0              0
## 1756      18-29        0        0        0              0
## 1757      30-39        1        0        0              0
## 1758      30-39        1        0        0              0
## 1759      50-59        0        0        1              0
## 1760      50-59        0        0        1              0
## 1761      18-29        0        0        0              0
## 1762      30-39        1        0        0              0
## 1763      40-49        0        1        0              0
## 1764      30-39        1        0        0              0
## 1765      30-39        1        0        0              0
## 1766      40-49        0        1        0              0
## 1767      40-49        0        1        0              0
## 1768      40-49        0        1        0              0
## 1769      40-49        0        1        0              0
## 1770      40-49        0        1        0              0
## 1771      18-29        0        0        0              0
## 1772      30-39        1        0        0              0
## 1773 60 or over        0        0        0              1
## 1774      40-49        0        1        0              0
## 1775      50-59        0        0        1              0
## 1776      30-39        1        0        0              0
## 1777      30-39        1        0        0              0
## 1778      18-29        0        0        0              0
## 1779      40-49        0        1        0              0
## 1780      50-59        0        0        1              0
## 1781      40-49        0        1        0              0
## 1782      18-29        0        0        0              0
## 1783      30-39        1        0        0              0
## 1784      40-49        0        1        0              0
## 1785      30-39        1        0        0              0
## 1786      18-29        0        0        0              0
## 1787      50-59        0        0        1              0
## 1788      50-59        0        0        1              0
## 1789      40-49        0        1        0              0
## 1790      40-49        0        1        0              0
```

73

```
## 1791    18-29       0    0    0    0
## 1792    30-39       1    0    0    0
## 1793    40-49       0    1    0    0
## 1794    18-29       0    0    0    0
## 1795    18-29       0    0    0    0
## 1796    40-49       0    1    0    0
## 1797    50-59       0    0    1    0
## 1798    40-49       0    1    0    0
## 1799    40-49       0    1    0    0
## 1800    18-29       0    0    0    0
## 1801    30-39       1    0    0    0
## 1802    40-49       0    1    0    0
## 1803    30-39       1    0    0    0
## 1804    50-59       0    0    1    0
## 1805    30-39       1    0    0    0
## 1806    40-49       0    1    0    0
## 1807    18-29       0    0    0    0
## 1808    30-39       1    0    0    0
## 1809    30-39       1    0    0    0
## 1810    40-49       0    1    0    0
## 1811    40-49       0    1    0    0
## 1812    50-59       0    0    1    0
## 1813    30-39       1    0    0    0
## 1814    50-59       0    0    1    0
## 1815    50-59       0    0    1    0
## 1816    18-29       0    0    0    0
## 1817    18-29       0    0    0    0
## 1818    40-49       0    1    0    0
## 1819    30-39       1    0    0    0
## 1820    50-59       0    0    1    0
## 1821 60 or over     0    0    0    1
## 1822    30-39       1    0    0    0
## 1823    30-39       1    0    0    0
## 1824    40-49       0    1    0    0
## 1825    40-49       0    1    0    0
## 1826    30-39       1    0    0    0
## 1827    50-59       0    0    1    0
## 1828    30-39       1    0    0    0
## 1829    18-29       0    0    0    0
## 1830    40-49       0    1    0    0
## 1831    40-49       0    1    0    0
## 1832    30-39       1    0    0    0
## 1833    30-39       1    0    0    0
## 1834    30-39       1    0    0    0
## 1835    18-29       0    0    0    0
## 1836    30-39       1    0    0    0
## 1837    40-49       0    1    0    0
## 1838    50-59       0    0    1    0
## 1839    30-39       1    0    0    0
## 1840    40-49       0    1    0    0
## 1841    40-49       0    1    0    0
## 1842    30-39       1    0    0    0
## 1843    30-39       1    0    0    0
## 1844    40-49       0    1    0    0
```

```
## 1845          30-39          1          0          0          0
## 1846          30-39          1          0          0          0
## 1847          30-39          1          0          0          0
## 1848          18-29          0          0          0          0
## 1849          18-29          0          0          0          0
## 1850          18-29          0          0          0          0
## 1851          18-29          0          0          0          0
## 1852          50-59          0          0          1          0
## 1853          50-59          0          0          1          0
## 1854          30-39          1          0          0          0
## 1855 60 or over            0          0          0          1
## 1856          30-39          1          0          0          0
## 1857          18-29          0          0          0          0
## 1858          50-59          0          0          1          0
## 1859          18-29          0          0          0          0
## 1860          30-39          1          0          0          0
## 1861          18-29          0          0          0          0
## 1862          40-49          0          1          0          0
## 1863          50-59          0          0          1          0
## 1864          30-39          1          0          0          0
## 1865          18-29          0          0          0          0
## 1866          50-59          0          0          1          0
## 1867          40-49          0          1          0          0
## 1868          50-59          0          0          1          0
## 1869          30-39          1          0          0          0
## 1870          50-59          0          0          1          0
## 1871          30-39          1          0          0          0
## 1872          30-39          1          0          0          0
## 1873          50-59          0          0          1          0
## 1874          18-29          0          0          0          0
## 1875          30-39          1          0          0          0
## 1876          40-49          0          1          0          0
## 1877          40-49          0          1          0          0
## 1878          50-59          0          0          1          0
## 1879          30-39          1          0          0          0
## 1880          30-39          1          0          0          0
## 1881          18-29          0          0          0          0
## 1882          30-39          1          0          0          0
## 1883          18-29          0          0          0          0
## 1884          30-39          1          0          0          0
## 1885          30-39          1          0          0          0
## 1886          40-49          0          1          0          0
## 1887          30-39          1          0          0          0
## 1888          30-39          1          0          0          0
## 1889          40-49          0          1          0          0
## 1890          18-29          0          0          0          0
## 1891          40-49          0          1          0          0
## 1892          40-49          0          1          0          0
## 1893          18-29          0          0          0          0
## 1894          18-29          0          0          0          0
## 1895          30-39          1          0          0          0
## 1896          50-59          0          0          1          0
## 1897          30-39          1          0          0          0
## 1898          40-49          0          1          0          0
```

```
## 1899      30-39        1        0        0           0
## 1900      30-39        1        0        0           0
## 1901      18-29        0        0        0           0
## 1902      30-39        1        0        0           0
## 1903      18-29        0        0        0           0
## 1904      50-59        0        0        1           0
## 1905      30-39        1        0        0           0
## 1906      40-49        0        1        0           0
## 1907      30-39        1        0        0           0
## 1908      40-49        0        1        0           0
## 1909      40-49        0        1        0           0
## 1910      30-39        1        0        0           0
## 1911      40-49        0        1        0           0
## 1912      30-39        1        0        0           0
## 1913      40-49        0        1        0           0
## 1914      40-49        0        1        0           0
## 1915      30-39        1        0        0           0
## 1916      30-39        1        0        0           0
## 1917 60 or over        0        0        0           1
## 1918      40-49        0        1        0           0
## 1919      40-49        0        1        0           0
## 1920      40-49        0        1        0           0
## 1921      40-49        0        1        0           0
## 1922      30-39        1        0        0           0
## 1923      30-39        1        0        0           0
## 1924      18-29        0        0        0           0
## 1925      30-39        1        0        0           0
## 1926      40-49        0        1        0           0
## 1927      50-59        0        0        1           0
## 1928      30-39        1        0        0           0
## 1929      18-29        0        0        0           0
## 1930      30-39        1        0        0           0
## 1931      18-29        0        0        0           0
## 1932      50-59        0        0        1           0
## 1933      30-39        1        0        0           0
## 1934      40-49        0        1        0           0
## 1935      18-29        0        0        0           0
## 1936      18-29        0        0        0           0
## 1937      50-59        0        0        1           0
## 1938      30-39        1        0        0           0
## 1939      50-59        0        0        1           0
## 1940      50-59        0        0        1           0
## 1941      40-49        0        1        0           0
## 1942      40-49        0        1        0           0
## 1943      30-39        1        0        0           0
## 1944      40-49        0        1        0           0
## 1945      30-39        1        0        0           0
## 1946      30-39        1        0        0           0
## 1947      30-39        1        0        0           0
## 1948      50-59        0        0        1           0
## 1949      50-59        0        0        1           0
## 1950      18-29        0        0        0           0
## 1951      30-39        1        0        0           0
## 1952      18-29        0        0        0           0
```

```
## 1953         30-39         1         0         0         0
## 1954         30-39         1         0         0         0
## 1955         50-59         0         0         1         0
## 1956         18-29         0         0         0         0
## 1957         30-39         1         0         0         0
## 1958         40-49         0         1         0         0
## 1959         40-49         0         1         0         0
## 1960         18-29         0         0         0         0
## 1961         18-29         0         0         0         0
## 1962         30-39         1         0         0         0
## 1963         50-59         0         0         1         0
## 1964         30-39         1         0         0         0
## 1965         30-39         1         0         0         0
## 1966         50-59         0         0         1         0
## 1967         40-49         0         1         0         0
## 1968         30-39         1         0         0         0
## 1969         30-39         1         0         0         0
## 1970 60 or over         0         0         0         1
## 1971         50-59         0         0         1         0
## 1972         30-39         1         0         0         0
## 1973         40-49         0         1         0         0
## 1974         40-49         0         1         0         0
## 1975         40-49         0         1         0         0
## 1976         30-39         1         0         0         0
## 1977         30-39         1         0         0         0
## 1978         18-29         0         0         0         0
## 1979         40-49         0         1         0         0
## 1980         18-29         0         0         0         0
## 1981         40-49         0         1         0         0
## 1982         40-49         0         1         0         0
## 1983         50-59         0         0         1         0
## 1984         30-39         1         0         0         0
## 1985         50-59         0         0         1         0
## 1986         30-39         1         0         0         0
## 1987         30-39         1         0         0         0
## 1988         40-49         0         1         0         0
## 1989         40-49         0         1         0         0
## 1990         30-39         1         0         0         0
## 1991         40-49         0         1         0         0
## 1992         18-29         0         0         0         0
## 1993         30-39         1         0         0         0
## 1994         30-39         1         0         0         0
## 1995         50-59         0         0         1         0
## 1996         18-29         0         0         0         0
## 1997         18-29         0         0         0         0
## 1998         18-29         0         0         0         0
## 1999         30-39         1         0         0         0
## 2000         40-49         0         1         0         0
```

Low Variance

Variables that have zero variance have no predictive power, therefore should be eliminated. But, even variables that have variance close to zero should be candidates for exclusion as they have limited predictive power. Moreover, in analyses involving resampling, one of the samples may end up having a predictor with

zero variance.

In the `fastfood` data, a very small percent of the sample is 60 or over.

```
df2 %>%
  group_by(age)%>%
  summarize(n = n())%>%
  ungroup()%>%
  mutate(percent = 100*n/sum(n))
```

```
## # A tibble: 5 x 3
##   age            n percent
##   <chr>      <int>   <dbl>
## 1 18-29        413    20.6
## 2 30-39        614    30.7
## 3 40-49        626    31.3
## 4 50-59        309    15.4
## 5 60 or over    38     1.9
```

The `nearZeroVar` function in `caret` sifts through the data looking for variables that have a ratio of most common and second most common value greater than 19. Based on this criterion the dummy variable, `age60_or_over` is deemed to as having near zero variance.

```
library(caret)
nearZeroVar(df2[,c('age','age30_39', 'age40_49', 'age50_59', 'age60_or_over')],saveMetrics = T)
```

```
##               freqRatio percentUnique zeroVar   nzv
## age            1.019544          0.25   FALSE FALSE
## age30_39       2.257329          0.10   FALSE FALSE
## age40_49       2.194888          0.10   FALSE FALSE
## age50_59       5.472492          0.10   FALSE FALSE
## age60_or_over 51.631579          0.10   FALSE  TRUE
```

Lump Categories

We can address near zero variance variables by eliminating them. Alternatively, one can combine all rare categories into an "Other" group. Yet another solution is to combine a rare category with another related category. In the `fastfood` data, those that are 60 or over can be combined with the group including those who are 50-59 to create a group of respondents who are 50 or over.

One way to combine groups is by using the same level name for the groups to be combined

```
df3 = df2
df3$age = as.factor(df3$age)
table(df3$age)
```

```
##
##      18-29      30-39      40-49      50-59 60 or over
##        413        614        626        309         38
```

```
levels(df3$age) = c('18-29','30-39','40-49','50 and over','50 and over')
table(df3$age)
```

```
##
##      18-29      30-39      40-49 50 and over
##        413        614        626         347
```

Alternatively, one can use helper functions such as `fct_collapse` from the `forcats` library

```
library(forcats)
df3 = df2
fct_count(df3$age)
```

```
## # A tibble: 5 x 2
##   f              n
##   <fct>      <int>
## 1 18-29        413
## 2 30-39        614
## 3 40-49        626
## 4 50-59        309
## 5 60 or over    38
```

```
df3$age = fct_collapse(df3$age, '50_or_over' = c('50-59', '60 or over'))
fct_count(df3$age)
```

```
## # A tibble: 4 x 2
##   f              n
##   <fct>      <int>
## 1 18-29        413
## 2 30-39        614
## 3 40-49        626
## 4 50_or_over   347
```

Other Category

When a variable contains a number of rare or infrequently occurring levels, one solution is to put them in an "other" category. In `fastfood` data, most respondents are "married" or "never married".

```
fct_count(df$marital_status)
```

```
## # A tibble: 5 x 2
##   f                 n
##   <fct>         <int>
## 1 divorced         74
## 2 married         812
## 3 never married   992
## 4 separated       108
## 5 widowed          14
```

So, we can lump the remaining groups into "Other" based on a criterion like proportion greater than 10%.

```
fct_lump(f = df$marital_status, prop = 0.1)%>%
  fct_count()
```

```
## # A tibble: 3 x 2
##   f                 n
##   <fct>         <int>
## 1 married         812
## 2 never married   992
## 3 Other           196
```

Numeric Variables

Numeric variables can take on values along a continuum and meaningful arithmetic can be performed. Other labels used to characterize this type of data include quantitative variable, and metric variable.

Scaling

Certain predictive modeling techniques require predictors to be in the same units. Analysis techniques that take into account distance or dot products (e.g., k-Nearest Neighbors, and support vector machines) require predictors to be in the same units. This can be accomplished by transformations such as centering, standardizing or range scaling.

We illustrate each of these scaling methods using Chipotle's ratings.

```
df %>%
  mutate(Centered = scale(chipotle,center = T,scale = F),
         Standardized = scale(chipotle, center = T, scale = T),
         Range_Scaled = (chipotle - min(chipotle))/(max(chipotle) - min(chipotle)))%>%
  select(chipotle, Centered, Standardized, Range_Scaled)%>%
  rename(Original = chipotle)
```

```
##      Original Centered Standardized Range_Scaled
## 1           7   3.0055  1.727760373    1.0000000
## 2           7   3.0055  1.727760373    1.0000000
## 3           2  -1.9945 -1.146570642    0.1666667
## 4           4   0.0055  0.003161764    0.5000000
## 5           3  -0.9945 -0.571704439    0.3333333
## 6           6   2.0055  1.152894170    0.8333333
## 7           5   1.0055  0.578027967    0.6666667
## 8           1  -2.9945 -1.721436844    0.0000000
## 9           2  -1.9945 -1.146570642    0.1666667
## 10          7   3.0055  1.727760373    1.0000000
## 11          3  -0.9945 -0.571704439    0.3333333
## 12          3  -0.9945 -0.571704439    0.3333333
## 13          6   2.0055  1.152894170    0.8333333
## 14          3  -0.9945 -0.571704439    0.3333333
## 15          1  -2.9945 -1.721436844    0.0000000
## 16          3  -0.9945 -0.571704439    0.3333333
## 17          5   1.0055  0.578027967    0.6666667
## 18          4   0.0055  0.003161764    0.5000000
## 19          2  -1.9945 -1.146570642    0.1666667
## 20          1  -2.9945 -1.721436844    0.0000000
## 21          7   3.0055  1.727760373    1.0000000
## 22          6   2.0055  1.152894170    0.8333333
## 23          1  -2.9945 -1.721436844    0.0000000
## 24          1  -2.9945 -1.721436844    0.0000000
## 25          3  -0.9945 -0.571704439    0.3333333
## 26          5   1.0055  0.578027967    0.6666667
## 27          7   3.0055  1.727760373    1.0000000
## 28          4   0.0055  0.003161764    0.5000000
## 29          2  -1.9945 -1.146570642    0.1666667
## 30          3  -0.9945 -0.571704439    0.3333333
## 31          6   2.0055  1.152894170    0.8333333
## 32          3  -0.9945 -0.571704439    0.3333333
## 33          4   0.0055  0.003161764    0.5000000
## 34          4   0.0055  0.003161764    0.5000000
## 35          3  -0.9945 -0.571704439    0.3333333
## 36          7   3.0055  1.727760373    1.0000000
## 37          4   0.0055  0.003161764    0.5000000
## 38          5   1.0055  0.578027967    0.6666667
## 39          4   0.0055  0.003161764    0.5000000
```

```
## 40          3  -0.9945 -0.571704439    0.3333333
## 41          1  -2.9945 -1.721436844    0.0000000
## 42          3  -0.9945 -0.571704439    0.3333333
## 43          3  -0.9945 -0.571704439    0.3333333
## 44          5   1.0055  0.578027967    0.6666667
## 45          5   1.0055  0.578027967    0.6666667
## 46          4   0.0055  0.003161764    0.5000000
## 47          5   1.0055  0.578027967    0.6666667
## 48          4   0.0055  0.003161764    0.5000000
## 49          5   1.0055  0.578027967    0.6666667
## 50          3  -0.9945 -0.571704439    0.3333333
## 51          3  -0.9945 -0.571704439    0.3333333
## 52          5   1.0055  0.578027967    0.6666667
## 53          4   0.0055  0.003161764    0.5000000
## 54          2  -1.9945 -1.146570642    0.1666667
## 55          3  -0.9945 -0.571704439    0.3333333
## 56          5   1.0055  0.578027967    0.6666667
## 57          2  -1.9945 -1.146570642    0.1666667
## 58          5   1.0055  0.578027967    0.6666667
## 59          7   3.0055  1.727760373    1.0000000
## 60          1  -2.9945 -1.721436844    0.0000000
## 61          3  -0.9945 -0.571704439    0.3333333
## 62          1  -2.9945 -1.721436844    0.0000000
## 63          4   0.0055  0.003161764    0.5000000
## 64          4   0.0055  0.003161764    0.5000000
## 65          1  -2.9945 -1.721436844    0.0000000
## 66          4   0.0055  0.003161764    0.5000000
## 67          3  -0.9945 -0.571704439    0.3333333
## 68          6   2.0055  1.152894170    0.8333333
## 69          5   1.0055  0.578027967    0.6666667
## 70          4   0.0055  0.003161764    0.5000000
## 71          7   3.0055  1.727760373    1.0000000
## 72          3  -0.9945 -0.571704439    0.3333333
## 73          4   0.0055  0.003161764    0.5000000
## 74          4   0.0055  0.003161764    0.5000000
## 75          3  -0.9945 -0.571704439    0.3333333
## 76          5   1.0055  0.578027967    0.6666667
## 77          3  -0.9945 -0.571704439    0.3333333
## 78          3  -0.9945 -0.571704439    0.3333333
## 79          5   1.0055  0.578027967    0.6666667
## 80          3  -0.9945 -0.571704439    0.3333333
## 81          3  -0.9945 -0.571704439    0.3333333
## 82          3  -0.9945 -0.571704439    0.3333333
## 83          3  -0.9945 -0.571704439    0.3333333
## 84          2  -1.9945 -1.146570642    0.1666667
## 85          4   0.0055  0.003161764    0.5000000
## 86          2  -1.9945 -1.146570642    0.1666667
## 87          1  -2.9945 -1.721436844    0.0000000
## 88          3  -0.9945 -0.571704439    0.3333333
## 89          6   2.0055  1.152894170    0.8333333
## 90          7   3.0055  1.727760373    1.0000000
## 91          2  -1.9945 -1.146570642    0.1666667
## 92          6   2.0055  1.152894170    0.8333333
## 93          3  -0.9945 -0.571704439    0.3333333
```

```
## 94        6   2.0055   1.152894170   0.8333333
## 95        5   1.0055   0.578027967   0.6666667
## 96        4   0.0055   0.003161764   0.5000000
## 97        4   0.0055   0.003161764   0.5000000
## 98        2  -1.9945  -1.146570642   0.1666667
## 99        3  -0.9945  -0.571704439   0.3333333
## 100       3  -0.9945  -0.571704439   0.3333333
## 101       3  -0.9945  -0.571704439   0.3333333
## 102       5   1.0055   0.578027967   0.6666667
## 103       1  -2.9945  -1.721436844   0.0000000
## 104       5   1.0055   0.578027967   0.6666667
## 105       5   1.0055   0.578027967   0.6666667
## 106       5   1.0055   0.578027967   0.6666667
## 107       7   3.0055   1.727760373   1.0000000
## 108       4   0.0055   0.003161764   0.5000000
## 109       2  -1.9945  -1.146570642   0.1666667
## 110       3  -0.9945  -0.571704439   0.3333333
## 111       6   2.0055   1.152894170   0.8333333
## 112       5   1.0055   0.578027967   0.6666667
## 113       5   1.0055   0.578027967   0.6666667
## 114       1  -2.9945  -1.721436844   0.0000000
## 115       1  -2.9945  -1.721436844   0.0000000
## 116       6   2.0055   1.152894170   0.8333333
## 117       6   2.0055   1.152894170   0.8333333
## 118       3  -0.9945  -0.571704439   0.3333333
## 119       7   3.0055   1.727760373   1.0000000
## 120       4   0.0055   0.003161764   0.5000000
## 121       4   0.0055   0.003161764   0.5000000
## 122       3  -0.9945  -0.571704439   0.3333333
## 123       1  -2.9945  -1.721436844   0.0000000
## 124       6   2.0055   1.152894170   0.8333333
## 125       5   1.0055   0.578027967   0.6666667
## 126       7   3.0055   1.727760373   1.0000000
## 127       5   1.0055   0.578027967   0.6666667
## 128       7   3.0055   1.727760373   1.0000000
## 129       6   2.0055   1.152894170   0.8333333
## 130       7   3.0055   1.727760373   1.0000000
## 131       5   1.0055   0.578027967   0.6666667
## 132       4   0.0055   0.003161764   0.5000000
## 133       2  -1.9945  -1.146570642   0.1666667
## 134       2  -1.9945  -1.146570642   0.1666667
## 135       2  -1.9945  -1.146570642   0.1666667
## 136       2  -1.9945  -1.146570642   0.1666667
## 137       3  -0.9945  -0.571704439   0.3333333
## 138       7   3.0055   1.727760373   1.0000000
## 139       2  -1.9945  -1.146570642   0.1666667
## 140       1  -2.9945  -1.721436844   0.0000000
## 141       6   2.0055   1.152894170   0.8333333
## 142       4   0.0055   0.003161764   0.5000000
## 143       4   0.0055   0.003161764   0.5000000
## 144       4   0.0055   0.003161764   0.5000000
## 145       7   3.0055   1.727760373   1.0000000
## 146       1  -2.9945  -1.721436844   0.0000000
## 147       1  -2.9945  -1.721436844   0.0000000
```

```
## 148       5    1.0055   0.578027967     0.6666667
## 149       6    2.0055   1.152894170     0.8333333
## 150       3   -0.9945  -0.571704439     0.3333333
## 151       3   -0.9945  -0.571704439     0.3333333
## 152       5    1.0055   0.578027967     0.6666667
## 153       4    0.0055   0.003161764     0.5000000
## 154       3   -0.9945  -0.571704439     0.3333333
## 155       2   -1.9945  -1.146570642     0.1666667
## 156       6    2.0055   1.152894170     0.8333333
## 157       2   -1.9945  -1.146570642     0.1666667
## 158       5    1.0055   0.578027967     0.6666667
## 159       5    1.0055   0.578027967     0.6666667
## 160       1   -2.9945  -1.721436844     0.0000000
## 161       3   -0.9945  -0.571704439     0.3333333
## 162       5    1.0055   0.578027967     0.6666667
## 163       7    3.0055   1.727760373     1.0000000
## 164       1   -2.9945  -1.721436844     0.0000000
## 165       7    3.0055   1.727760373     1.0000000
## 166       3   -0.9945  -0.571704439     0.3333333
## 167       1   -2.9945  -1.721436844     0.0000000
## 168       4    0.0055   0.003161764     0.5000000
## 169       4    0.0055   0.003161764     0.5000000
## 170       4    0.0055   0.003161764     0.5000000
## 171       6    2.0055   1.152894170     0.8333333
## 172       4    0.0055   0.003161764     0.5000000
## 173       4    0.0055   0.003161764     0.5000000
## 174       5    1.0055   0.578027967     0.6666667
## 175       4    0.0055   0.003161764     0.5000000
## 176       4    0.0055   0.003161764     0.5000000
## 177       3   -0.9945  -0.571704439     0.3333333
## 178       7    3.0055   1.727760373     1.0000000
## 179       4    0.0055   0.003161764     0.5000000
## 180       6    2.0055   1.152894170     0.8333333
## 181       3   -0.9945  -0.571704439     0.3333333
## 182       3   -0.9945  -0.571704439     0.3333333
## 183       4    0.0055   0.003161764     0.5000000
## 184       3   -0.9945  -0.571704439     0.3333333
## 185       7    3.0055   1.727760373     1.0000000
## 186       3   -0.9945  -0.571704439     0.3333333
## 187       4    0.0055   0.003161764     0.5000000
## 188       1   -2.9945  -1.721436844     0.0000000
## 189       6    2.0055   1.152894170     0.8333333
## 190       5    1.0055   0.578027967     0.6666667
## 191       7    3.0055   1.727760373     1.0000000
## 192       7    3.0055   1.727760373     1.0000000
## 193       1   -2.9945  -1.721436844     0.0000000
## 194       5    1.0055   0.578027967     0.6666667
## 195       5    1.0055   0.578027967     0.6666667
## 196       3   -0.9945  -0.571704439     0.3333333
## 197       4    0.0055   0.003161764     0.5000000
## 198       1   -2.9945  -1.721436844     0.0000000
## 199       1   -2.9945  -1.721436844     0.0000000
## 200       7    3.0055   1.727760373     1.0000000
## 201       7    3.0055   1.727760373     1.0000000
```

```
## 202    3  -0.9945 -0.571704439    0.3333333
## 203    7   3.0055  1.727760373    1.0000000
## 204    3  -0.9945 -0.571704439    0.3333333
## 205    3  -0.9945 -0.571704439    0.3333333
## 206    2  -1.9945 -1.146570642    0.1666667
## 207    4   0.0055  0.003161764    0.5000000
## 208    6   2.0055  1.152894170    0.8333333
## 209    5   1.0055  0.578027967    0.6666667
## 210    6   2.0055  1.152894170    0.8333333
## 211    1  -2.9945 -1.721436844    0.0000000
## 212    4   0.0055  0.003161764    0.5000000
## 213    4   0.0055  0.003161764    0.5000000
## 214    7   3.0055  1.727760373    1.0000000
## 215    2  -1.9945 -1.146570642    0.1666667
## 216    5   1.0055  0.578027967    0.6666667
## 217    5   1.0055  0.578027967    0.6666667
## 218    3  -0.9945 -0.571704439    0.3333333
## 219    4   0.0055  0.003161764    0.5000000
## 220    5   1.0055  0.578027967    0.6666667
## 221    5   1.0055  0.578027967    0.6666667
## 222    5   1.0055  0.578027967    0.6666667
## 223    3  -0.9945 -0.571704439    0.3333333
## 224    6   2.0055  1.152894170    0.8333333
## 225    6   2.0055  1.152894170    0.8333333
## 226    4   0.0055  0.003161764    0.5000000
## 227    7   3.0055  1.727760373    1.0000000
## 228    5   1.0055  0.578027967    0.6666667
## 229    5   1.0055  0.578027967    0.6666667
## 230    1  -2.9945 -1.721436844    0.0000000
## 231    6   2.0055  1.152894170    0.8333333
## 232    7   3.0055  1.727760373    1.0000000
## 233    1  -2.9945 -1.721436844    0.0000000
## 234    2  -1.9945 -1.146570642    0.1666667
## 235    6   2.0055  1.152894170    0.8333333
## 236    3  -0.9945 -0.571704439    0.3333333
## 237    3  -0.9945 -0.571704439    0.3333333
## 238    7   3.0055  1.727760373    1.0000000
## 239    4   0.0055  0.003161764    0.5000000
## 240    4   0.0055  0.003161764    0.5000000
## 241    3  -0.9945 -0.571704439    0.3333333
## 242    2  -1.9945 -1.146570642    0.1666667
## 243    5   1.0055  0.578027967    0.6666667
## 244    7   3.0055  1.727760373    1.0000000
## 245    5   1.0055  0.578027967    0.6666667
## 246    6   2.0055  1.152894170    0.8333333
## 247    3  -0.9945 -0.571704439    0.3333333
## 248    6   2.0055  1.152894170    0.8333333
## 249    4   0.0055  0.003161764    0.5000000
## 250    3  -0.9945 -0.571704439    0.3333333
## 251    3  -0.9945 -0.571704439    0.3333333
## 252    4   0.0055  0.003161764    0.5000000
## 253    5   1.0055  0.578027967    0.6666667
## 254    3  -0.9945 -0.571704439    0.3333333
## 255    3  -0.9945 -0.571704439    0.3333333
```

```
## 256        4   0.0055  0.003161764   0.5000000
## 257        7   3.0055  1.727760373   1.0000000
## 258        5   1.0055  0.578027967   0.6666667
## 259        4   0.0055  0.003161764   0.5000000
## 260        3  -0.9945 -0.571704439   0.3333333
## 261        6   2.0055  1.152894170   0.8333333
## 262        1  -2.9945 -1.721436844   0.0000000
## 263        7   3.0055  1.727760373   1.0000000
## 264        6   2.0055  1.152894170   0.8333333
## 265        5   1.0055  0.578027967   0.6666667
## 266        3  -0.9945 -0.571704439   0.3333333
## 267        3  -0.9945 -0.571704439   0.3333333
## 268        1  -2.9945 -1.721436844   0.0000000
## 269        4   0.0055  0.003161764   0.5000000
## 270        3  -0.9945 -0.571704439   0.3333333
## 271        4   0.0055  0.003161764   0.5000000
## 272        5   1.0055  0.578027967   0.6666667
## 273        4   0.0055  0.003161764   0.5000000
## 274        3  -0.9945 -0.571704439   0.3333333
## 275        6   2.0055  1.152894170   0.8333333
## 276        3  -0.9945 -0.571704439   0.3333333
## 277        5   1.0055  0.578027967   0.6666667
## 278        1  -2.9945 -1.721436844   0.0000000
## 279        4   0.0055  0.003161764   0.5000000
## 280        1  -2.9945 -1.721436844   0.0000000
## 281        1  -2.9945 -1.721436844   0.0000000
## 282        3  -0.9945 -0.571704439   0.3333333
## 283        2  -1.9945 -1.146570642   0.1666667
## 284        5   1.0055  0.578027967   0.6666667
## 285        3  -0.9945 -0.571704439   0.3333333
## 286        3  -0.9945 -0.571704439   0.3333333
## 287        3  -0.9945 -0.571704439   0.3333333
## 288        4   0.0055  0.003161764   0.5000000
## 289        3  -0.9945 -0.571704439   0.3333333
## 290        1  -2.9945 -1.721436844   0.0000000
## 291        5   1.0055  0.578027967   0.6666667
## 292        4   0.0055  0.003161764   0.5000000
## 293        2  -1.9945 -1.146570642   0.1666667
## 294        6   2.0055  1.152894170   0.8333333
## 295        4   0.0055  0.003161764   0.5000000
## 296        7   3.0055  1.727760373   1.0000000
## 297        1  -2.9945 -1.721436844   0.0000000
## 298        3  -0.9945 -0.571704439   0.3333333
## 299        3  -0.9945 -0.571704439   0.3333333
## 300        5   1.0055  0.578027967   0.6666667
## 301        3  -0.9945 -0.571704439   0.3333333
## 302        1  -2.9945 -1.721436844   0.0000000
## 303        3  -0.9945 -0.571704439   0.3333333
## 304        3  -0.9945 -0.571704439   0.3333333
## 305        2  -1.9945 -1.146570642   0.1666667
## 306        7   3.0055  1.727760373   1.0000000
## 307        2  -1.9945 -1.146570642   0.1666667
## 308        6   2.0055  1.152894170   0.8333333
## 309        2  -1.9945 -1.146570642   0.1666667
```

```
## 310    4   0.0055  0.003161764   0.5000000
## 311    5   1.0055  0.578027967   0.6666667
## 312    6   2.0055  1.152894170   0.8333333
## 313    4   0.0055  0.003161764   0.5000000
## 314    1  -2.9945 -1.721436844   0.0000000
## 315    3  -0.9945 -0.571704439   0.3333333
## 316    1  -2.9945 -1.721436844   0.0000000
## 317    4   0.0055  0.003161764   0.5000000
## 318    4   0.0055  0.003161764   0.5000000
## 319    1  -2.9945 -1.721436844   0.0000000
## 320    5   1.0055  0.578027967   0.6666667
## 321    3  -0.9945 -0.571704439   0.3333333
## 322    4   0.0055  0.003161764   0.5000000
## 323    1  -2.9945 -1.721436844   0.0000000
## 324    3  -0.9945 -0.571704439   0.3333333
## 325    4   0.0055  0.003161764   0.5000000
## 326    7   3.0055  1.727760373   1.0000000
## 327    5   1.0055  0.578027967   0.6666667
## 328    1  -2.9945 -1.721436844   0.0000000
## 329    4   0.0055  0.003161764   0.5000000
## 330    7   3.0055  1.727760373   1.0000000
## 331    4   0.0055  0.003161764   0.5000000
## 332    3  -0.9945 -0.571704439   0.3333333
## 333    5   1.0055  0.578027967   0.6666667
## 334    1  -2.9945 -1.721436844   0.0000000
## 335    7   3.0055  1.727760373   1.0000000
## 336    3  -0.9945 -0.571704439   0.3333333
## 337    3  -0.9945 -0.571704439   0.3333333
## 338    4   0.0055  0.003161764   0.5000000
## 339    1  -2.9945 -1.721436844   0.0000000
## 340    1  -2.9945 -1.721436844   0.0000000
## 341    2  -1.9945 -1.146570642   0.1666667
## 342    3  -0.9945 -0.571704439   0.3333333
## 343    4   0.0055  0.003161764   0.5000000
## 344    3  -0.9945 -0.571704439   0.3333333
## 345    4   0.0055  0.003161764   0.5000000
## 346    6   2.0055  1.152894170   0.8333333
## 347    1  -2.9945 -1.721436844   0.0000000
## 348    5   1.0055  0.578027967   0.6666667
## 349    4   0.0055  0.003161764   0.5000000
## 350    5   1.0055  0.578027967   0.6666667
## 351    5   1.0055  0.578027967   0.6666667
## 352    7   3.0055  1.727760373   1.0000000
## 353    5   1.0055  0.578027967   0.6666667
## 354    4   0.0055  0.003161764   0.5000000
## 355    4   0.0055  0.003161764   0.5000000
## 356    4   0.0055  0.003161764   0.5000000
## 357    3  -0.9945 -0.571704439   0.3333333
## 358    6   2.0055  1.152894170   0.8333333
## 359    5   1.0055  0.578027967   0.6666667
## 360    1  -2.9945 -1.721436844   0.0000000
## 361    5   1.0055  0.578027967   0.6666667
## 362    6   2.0055  1.152894170   0.8333333
## 363    1  -2.9945 -1.721436844   0.0000000
```

```
## 364     5    1.0055   0.578027967    0.6666667
## 365     4    0.0055   0.003161764    0.5000000
## 366     5    1.0055   0.578027967    0.6666667
## 367     7    3.0055   1.727760373    1.0000000
## 368     2   -1.9945  -1.146570642    0.1666667
## 369     3   -0.9945  -0.571704439    0.3333333
## 370     4    0.0055   0.003161764    0.5000000
## 371     1   -2.9945  -1.721436844    0.0000000
## 372     1   -2.9945  -1.721436844    0.0000000
## 373     1   -2.9945  -1.721436844    0.0000000
## 374     7    3.0055   1.727760373    1.0000000
## 375     6    2.0055   1.152894170    0.8333333
## 376     5    1.0055   0.578027967    0.6666667
## 377     3   -0.9945  -0.571704439    0.3333333
## 378     4    0.0055   0.003161764    0.5000000
## 379     3   -0.9945  -0.571704439    0.3333333
## 380     1   -2.9945  -1.721436844    0.0000000
## 381     3   -0.9945  -0.571704439    0.3333333
## 382     3   -0.9945  -0.571704439    0.3333333
## 383     7    3.0055   1.727760373    1.0000000
## 384     4    0.0055   0.003161764    0.5000000
## 385     2   -1.9945  -1.146570642    0.1666667
## 386     3   -0.9945  -0.571704439    0.3333333
## 387     4    0.0055   0.003161764    0.5000000
## 388     1   -2.9945  -1.721436844    0.0000000
## 389     3   -0.9945  -0.571704439    0.3333333
## 390     6    2.0055   1.152894170    0.8333333
## 391     3   -0.9945  -0.571704439    0.3333333
## 392     4    0.0055   0.003161764    0.5000000
## 393     3   -0.9945  -0.571704439    0.3333333
## 394     7    3.0055   1.727760373    1.0000000
## 395     4    0.0055   0.003161764    0.5000000
## 396     2   -1.9945  -1.146570642    0.1666667
## 397     6    2.0055   1.152894170    0.8333333
## 398     3   -0.9945  -0.571704439    0.3333333
## 399     4    0.0055   0.003161764    0.5000000
## 400     5    1.0055   0.578027967    0.6666667
## 401     3   -0.9945  -0.571704439    0.3333333
## 402     4    0.0055   0.003161764    0.5000000
## 403     6    2.0055   1.152894170    0.8333333
## 404     4    0.0055   0.003161764    0.5000000
## 405     1   -2.9945  -1.721436844    0.0000000
## 406     7    3.0055   1.727760373    1.0000000
## 407     1   -2.9945  -1.721436844    0.0000000
## 408     3   -0.9945  -0.571704439    0.3333333
## 409     2   -1.9945  -1.146570642    0.1666667
## 410     6    2.0055   1.152894170    0.8333333
## 411     4    0.0055   0.003161764    0.5000000
## 412     7    3.0055   1.727760373    1.0000000
## 413     4    0.0055   0.003161764    0.5000000
## 414     6    2.0055   1.152894170    0.8333333
## 415     4    0.0055   0.003161764    0.5000000
## 416     4    0.0055   0.003161764    0.5000000
## 417     7    3.0055   1.727760373    1.0000000
```

```
## 418          3  -0.9945 -0.571704439     0.3333333
## 419          3  -0.9945 -0.571704439     0.3333333
## 420          1  -2.9945 -1.721436844     0.0000000
## 421          5   1.0055  0.578027967     0.6666667
## 422          6   2.0055  1.152894170     0.8333333
## 423          6   2.0055  1.152894170     0.8333333
## 424          4   0.0055  0.003161764     0.5000000
## 425          4   0.0055  0.003161764     0.5000000
## 426          6   2.0055  1.152894170     0.8333333
## 427          5   1.0055  0.578027967     0.6666667
## 428          7   3.0055  1.727760373     1.0000000
## 429          7   3.0055  1.727760373     1.0000000
## 430          4   0.0055  0.003161764     0.5000000
## 431          3  -0.9945 -0.571704439     0.3333333
## 432          4   0.0055  0.003161764     0.5000000
## 433          4   0.0055  0.003161764     0.5000000
## 434          7   3.0055  1.727760373     1.0000000
## 435          5   1.0055  0.578027967     0.6666667
## 436          1  -2.9945 -1.721436844     0.0000000
## 437          3  -0.9945 -0.571704439     0.3333333
## 438          6   2.0055  1.152894170     0.8333333
## 439          3  -0.9945 -0.571704439     0.3333333
## 440          7   3.0055  1.727760373     1.0000000
## 441          4   0.0055  0.003161764     0.5000000
## 442          3  -0.9945 -0.571704439     0.3333333
## 443          6   2.0055  1.152894170     0.8333333
## 444          5   1.0055  0.578027967     0.6666667
## 445          3  -0.9945 -0.571704439     0.3333333
## 446          3  -0.9945 -0.571704439     0.3333333
## 447          5   1.0055  0.578027967     0.6666667
## 448          5   1.0055  0.578027967     0.6666667
## 449          1  -2.9945 -1.721436844     0.0000000
## 450          6   2.0055  1.152894170     0.8333333
## 451          6   2.0055  1.152894170     0.8333333
## 452          2  -1.9945 -1.146570642     0.1666667
## 453          1  -2.9945 -1.721436844     0.0000000
## 454          6   2.0055  1.152894170     0.8333333
## 455          4   0.0055  0.003161764     0.5000000
## 456          3  -0.9945 -0.571704439     0.3333333
## 457          1  -2.9945 -1.721436844     0.0000000
## 458          7   3.0055  1.727760373     1.0000000
## 459          4   0.0055  0.003161764     0.5000000
## 460          6   2.0055  1.152894170     0.8333333
## 461          1  -2.9945 -1.721436844     0.0000000
## 462          2  -1.9945 -1.146570642     0.1666667
## 463          3  -0.9945 -0.571704439     0.3333333
## 464          6   2.0055  1.152894170     0.8333333
## 465          3  -0.9945 -0.571704439     0.3333333
## 466          2  -1.9945 -1.146570642     0.1666667
## 467          2  -1.9945 -1.146570642     0.1666667
## 468          5   1.0055  0.578027967     0.6666667
## 469          6   2.0055  1.152894170     0.8333333
## 470          1  -2.9945 -1.721436844     0.0000000
## 471          7   3.0055  1.727760373     1.0000000
```

```
## 472          3  -0.9945 -0.571704439    0.3333333
## 473          3  -0.9945 -0.571704439    0.3333333
## 474          3  -0.9945 -0.571704439    0.3333333
## 475          4   0.0055  0.003161764    0.5000000
## 476          4   0.0055  0.003161764    0.5000000
## 477          1  -2.9945 -1.721436844    0.0000000
## 478          7   3.0055  1.727760373    1.0000000
## 479          7   3.0055  1.727760373    1.0000000
## 480          1  -2.9945 -1.721436844    0.0000000
## 481          6   2.0055  1.152894170    0.8333333
## 482          2  -1.9945 -1.146570642    0.1666667
## 483          1  -2.9945 -1.721436844    0.0000000
## 484          1  -2.9945 -1.721436844    0.0000000
## 485          5   1.0055  0.578027967    0.6666667
## 486          3  -0.9945 -0.571704439    0.3333333
## 487          4   0.0055  0.003161764    0.5000000
## 488          4   0.0055  0.003161764    0.5000000
## 489          1  -2.9945 -1.721436844    0.0000000
## 490          3  -0.9945 -0.571704439    0.3333333
## 491          3  -0.9945 -0.571704439    0.3333333
## 492          4   0.0055  0.003161764    0.5000000
## 493          4   0.0055  0.003161764    0.5000000
## 494          2  -1.9945 -1.146570642    0.1666667
## 495          2  -1.9945 -1.146570642    0.1666667
## 496          4   0.0055  0.003161764    0.5000000
## 497          4   0.0055  0.003161764    0.5000000
## 498          4   0.0055  0.003161764    0.5000000
## 499          4   0.0055  0.003161764    0.5000000
## 500          7   3.0055  1.727760373    1.0000000
## 501          4   0.0055  0.003161764    0.5000000
## 502          4   0.0055  0.003161764    0.5000000
## 503          5   1.0055  0.578027967    0.6666667
## 504          3  -0.9945 -0.571704439    0.3333333
## 505          4   0.0055  0.003161764    0.5000000
## 506          3  -0.9945 -0.571704439    0.3333333
## 507          1  -2.9945 -1.721436844    0.0000000
## 508          3  -0.9945 -0.571704439    0.3333333
## 509          4   0.0055  0.003161764    0.5000000
## 510          4   0.0055  0.003161764    0.5000000
## 511          3  -0.9945 -0.571704439    0.3333333
## 512          4   0.0055  0.003161764    0.5000000
## 513          2  -1.9945 -1.146570642    0.1666667
## 514          6   2.0055  1.152894170    0.8333333
## 515          7   3.0055  1.727760373    1.0000000
## 516          3  -0.9945 -0.571704439    0.3333333
## 517          5   1.0055  0.578027967    0.6666667
## 518          4   0.0055  0.003161764    0.5000000
## 519          5   1.0055  0.578027967    0.6666667
## 520          5   1.0055  0.578027967    0.6666667
## 521          1  -2.9945 -1.721436844    0.0000000
## 522          5   1.0055  0.578027967    0.6666667
## 523          5   1.0055  0.578027967    0.6666667
## 524          5   1.0055  0.578027967    0.6666667
## 525          2  -1.9945 -1.146570642    0.1666667
```

```
## 526          1  -2.9945 -1.721436844   0.0000000
## 527          3  -0.9945 -0.571704439   0.3333333
## 528          6   2.0055  1.152894170   0.8333333
## 529          5   1.0055  0.578027967   0.6666667
## 530          7   3.0055  1.727760373   1.0000000
## 531          5   1.0055  0.578027967   0.6666667
## 532          4   0.0055  0.003161764   0.5000000
## 533          5   1.0055  0.578027967   0.6666667
## 534          4   0.0055  0.003161764   0.5000000
## 535          1  -2.9945 -1.721436844   0.0000000
## 536          4   0.0055  0.003161764   0.5000000
## 537          6   2.0055  1.152894170   0.8333333
## 538          4   0.0055  0.003161764   0.5000000
## 539          5   1.0055  0.578027967   0.6666667
## 540          3  -0.9945 -0.571704439   0.3333333
## 541          4   0.0055  0.003161764   0.5000000
## 542          5   1.0055  0.578027967   0.6666667
## 543          7   3.0055  1.727760373   1.0000000
## 544          6   2.0055  1.152894170   0.8333333
## 545          2  -1.9945 -1.146570642   0.1666667
## 546          4   0.0055  0.003161764   0.5000000
## 547          5   1.0055  0.578027967   0.6666667
## 548          3  -0.9945 -0.571704439   0.3333333
## 549          3  -0.9945 -0.571704439   0.3333333
## 550          1  -2.9945 -1.721436844   0.0000000
## 551          5   1.0055  0.578027967   0.6666667
## 552          1  -2.9945 -1.721436844   0.0000000
## 553          6   2.0055  1.152894170   0.8333333
## 554          1  -2.9945 -1.721436844   0.0000000
## 555          5   1.0055  0.578027967   0.6666667
## 556          6   2.0055  1.152894170   0.8333333
## 557          5   1.0055  0.578027967   0.6666667
## 558          6   2.0055  1.152894170   0.8333333
## 559          2  -1.9945 -1.146570642   0.1666667
## 560          3  -0.9945 -0.571704439   0.3333333
## 561          7   3.0055  1.727760373   1.0000000
## 562          5   1.0055  0.578027967   0.6666667
## 563          7   3.0055  1.727760373   1.0000000
## 564          1  -2.9945 -1.721436844   0.0000000
## 565          7   3.0055  1.727760373   1.0000000
## 566          5   1.0055  0.578027967   0.6666667
## 567          4   0.0055  0.003161764   0.5000000
## 568          7   3.0055  1.727760373   1.0000000
## 569          7   3.0055  1.727760373   1.0000000
## 570          2  -1.9945 -1.146570642   0.1666667
## 571          6   2.0055  1.152894170   0.8333333
## 572          5   1.0055  0.578027967   0.6666667
## 573          5   1.0055  0.578027967   0.6666667
## 574          3  -0.9945 -0.571704439   0.3333333
## 575          3  -0.9945 -0.571704439   0.3333333
## 576          5   1.0055  0.578027967   0.6666667
## 577          1  -2.9945 -1.721436844   0.0000000
## 578          3  -0.9945 -0.571704439   0.3333333
## 579          5   1.0055  0.578027967   0.6666667
```

```
## 580          5   1.0055  0.578027967      0.6666667
## 581          5   1.0055  0.578027967      0.6666667
## 582          5   1.0055  0.578027967      0.6666667
## 583          3  -0.9945 -0.571704439      0.3333333
## 584          3  -0.9945 -0.571704439      0.3333333
## 585          3  -0.9945 -0.571704439      0.3333333
## 586          5   1.0055  0.578027967      0.6666667
## 587          5   1.0055  0.578027967      0.6666667
## 588          2  -1.9945 -1.146570642      0.1666667
## 589          2  -1.9945 -1.146570642      0.1666667
## 590          5   1.0055  0.578027967      0.6666667
## 591          4   0.0055  0.003161764      0.5000000
## 592          6   2.0055  1.152894170      0.8333333
## 593          5   1.0055  0.578027967      0.6666667
## 594          4   0.0055  0.003161764      0.5000000
## 595          7   3.0055  1.727760373      1.0000000
## 596          4   0.0055  0.003161764      0.5000000
## 597          6   2.0055  1.152894170      0.8333333
## 598          3  -0.9945 -0.571704439      0.3333333
## 599          2  -1.9945 -1.146570642      0.1666667
## 600          2  -1.9945 -1.146570642      0.1666667
## 601          6   2.0055  1.152894170      0.8333333
## 602          7   3.0055  1.727760373      1.0000000
## 603          4   0.0055  0.003161764      0.5000000
## 604          5   1.0055  0.578027967      0.6666667
## 605          5   1.0055  0.578027967      0.6666667
## 606          3  -0.9945 -0.571704439      0.3333333
## 607          5   1.0055  0.578027967      0.6666667
## 608          6   2.0055  1.152894170      0.8333333
## 609          2  -1.9945 -1.146570642      0.1666667
## 610          4   0.0055  0.003161764      0.5000000
## 611          2  -1.9945 -1.146570642      0.1666667
## 612          4   0.0055  0.003161764      0.5000000
## 613          3  -0.9945 -0.571704439      0.3333333
## 614          4   0.0055  0.003161764      0.5000000
## 615          2  -1.9945 -1.146570642      0.1666667
## 616          3  -0.9945 -0.571704439      0.3333333
## 617          4   0.0055  0.003161764      0.5000000
## 618          5   1.0055  0.578027967      0.6666667
## 619          1  -2.9945 -1.721436844      0.0000000
## 620          1  -2.9945 -1.721436844      0.0000000
## 621          3  -0.9945 -0.571704439      0.3333333
## 622          7   3.0055  1.727760373      1.0000000
## 623          5   1.0055  0.578027967      0.6666667
## 624          7   3.0055  1.727760373      1.0000000
## 625          2  -1.9945 -1.146570642      0.1666667
## 626          3  -0.9945 -0.571704439      0.3333333
## 627          4   0.0055  0.003161764      0.5000000
## 628          5   1.0055  0.578027967      0.6666667
## 629          6   2.0055  1.152894170      0.8333333
## 630          5   1.0055  0.578027967      0.6666667
## 631          3  -0.9945 -0.571704439      0.3333333
## 632          7   3.0055  1.727760373      1.0000000
## 633          3  -0.9945 -0.571704439      0.3333333
```

```
## 634          3  -0.9945 -0.571704439   0.3333333
## 635          6   2.0055  1.152894170   0.8333333
## 636          3  -0.9945 -0.571704439   0.3333333
## 637          7   3.0055  1.727760373   1.0000000
## 638          5   1.0055  0.578027967   0.6666667
## 639          6   2.0055  1.152894170   0.8333333
## 640          4   0.0055  0.003161764   0.5000000
## 641          2  -1.9945 -1.146570642   0.1666667
## 642          3  -0.9945 -0.571704439   0.3333333
## 643          1  -2.9945 -1.721436844   0.0000000
## 644          6   2.0055  1.152894170   0.8333333
## 645          5   1.0055  0.578027967   0.6666667
## 646          3  -0.9945 -0.571704439   0.3333333
## 647          2  -1.9945 -1.146570642   0.1666667
## 648          3  -0.9945 -0.571704439   0.3333333
## 649          5   1.0055  0.578027967   0.6666667
## 650          1  -2.9945 -1.721436844   0.0000000
## 651          5   1.0055  0.578027967   0.6666667
## 652          7   3.0055  1.727760373   1.0000000
## 653          4   0.0055  0.003161764   0.5000000
## 654          7   3.0055  1.727760373   1.0000000
## 655          3  -0.9945 -0.571704439   0.3333333
## 656          5   1.0055  0.578027967   0.6666667
## 657          4   0.0055  0.003161764   0.5000000
## 658          3  -0.9945 -0.571704439   0.3333333
## 659          5   1.0055  0.578027967   0.6666667
## 660          7   3.0055  1.727760373   1.0000000
## 661          3  -0.9945 -0.571704439   0.3333333
## 662          3  -0.9945 -0.571704439   0.3333333
## 663          5   1.0055  0.578027967   0.6666667
## 664          5   1.0055  0.578027967   0.6666667
## 665          3  -0.9945 -0.571704439   0.3333333
## 666          2  -1.9945 -1.146570642   0.1666667
## 667          5   1.0055  0.578027967   0.6666667
## 668          1  -2.9945 -1.721436844   0.0000000
## 669          1  -2.9945 -1.721436844   0.0000000
## 670          2  -1.9945 -1.146570642   0.1666667
## 671          7   3.0055  1.727760373   1.0000000
## 672          1  -2.9945 -1.721436844   0.0000000
## 673          5   1.0055  0.578027967   0.6666667
## 674          7   3.0055  1.727760373   1.0000000
## 675          7   3.0055  1.727760373   1.0000000
## 676          2  -1.9945 -1.146570642   0.1666667
## 677          1  -2.9945 -1.721436844   0.0000000
## 678          4   0.0055  0.003161764   0.5000000
## 679          5   1.0055  0.578027967   0.6666667
## 680          6   2.0055  1.152894170   0.8333333
## 681          5   1.0055  0.578027967   0.6666667
## 682          5   1.0055  0.578027967   0.6666667
## 683          4   0.0055  0.003161764   0.5000000
## 684          3  -0.9945 -0.571704439   0.3333333
## 685          4   0.0055  0.003161764   0.5000000
## 686          7   3.0055  1.727760373   1.0000000
## 687          4   0.0055  0.003161764   0.5000000
```

```
## 688   5   1.0055   0.578027967   0.6666667
## 689   1  -2.9945  -1.721436844   0.0000000
## 690   3  -0.9945  -0.571704439   0.3333333
## 691   3  -0.9945  -0.571704439   0.3333333
## 692   3  -0.9945  -0.571704439   0.3333333
## 693   6   2.0055   1.152894170   0.8333333
## 694   6   2.0055   1.152894170   0.8333333
## 695   7   3.0055   1.727760373   1.0000000
## 696   4   0.0055   0.003161764   0.5000000
## 697   6   2.0055   1.152894170   0.8333333
## 698   5   1.0055   0.578027967   0.6666667
## 699   5   1.0055   0.578027967   0.6666667
## 700   7   3.0055   1.727760373   1.0000000
## 701   4   0.0055   0.003161764   0.5000000
## 702   3  -0.9945  -0.571704439   0.3333333
## 703   1  -2.9945  -1.721436844   0.0000000
## 704   4   0.0055   0.003161764   0.5000000
## 705   4   0.0055   0.003161764   0.5000000
## 706   3  -0.9945  -0.571704439   0.3333333
## 707   6   2.0055   1.152894170   0.8333333
## 708   1  -2.9945  -1.721436844   0.0000000
## 709   4   0.0055   0.003161764   0.5000000
## 710   4   0.0055   0.003161764   0.5000000
## 711   5   1.0055   0.578027967   0.6666667
## 712   2  -1.9945  -1.146570642   0.1666667
## 713   3  -0.9945  -0.571704439   0.3333333
## 714   4   0.0055   0.003161764   0.5000000
## 715   1  -2.9945  -1.721436844   0.0000000
## 716   6   2.0055   1.152894170   0.8333333
## 717   5   1.0055   0.578027967   0.6666667
## 718   3  -0.9945  -0.571704439   0.3333333
## 719   5   1.0055   0.578027967   0.6666667
## 720   4   0.0055   0.003161764   0.5000000
## 721   5   1.0055   0.578027967   0.6666667
## 722   2  -1.9945  -1.146570642   0.1666667
## 723   4   0.0055   0.003161764   0.5000000
## 724   3  -0.9945  -0.571704439   0.3333333
## 725   2  -1.9945  -1.146570642   0.1666667
## 726   4   0.0055   0.003161764   0.5000000
## 727   6   2.0055   1.152894170   0.8333333
## 728   3  -0.9945  -0.571704439   0.3333333
## 729   2  -1.9945  -1.146570642   0.1666667
## 730   3  -0.9945  -0.571704439   0.3333333
## 731   3  -0.9945  -0.571704439   0.3333333
## 732   2  -1.9945  -1.146570642   0.1666667
## 733   1  -2.9945  -1.721436844   0.0000000
## 734   6   2.0055   1.152894170   0.8333333
## 735   6   2.0055   1.152894170   0.8333333
## 736   6   2.0055   1.152894170   0.8333333
## 737   3  -0.9945  -0.571704439   0.3333333
## 738   1  -2.9945  -1.721436844   0.0000000
## 739   2  -1.9945  -1.146570642   0.1666667
## 740   5   1.0055   0.578027967   0.6666667
## 741   5   1.0055   0.578027967   0.6666667
```

```
## 742    4   0.0055  0.003161764   0.5000000
## 743    6   2.0055  1.152894170   0.8333333
## 744    4   0.0055  0.003161764   0.5000000
## 745    5   1.0055  0.578027967   0.6666667
## 746    5   1.0055  0.578027967   0.6666667
## 747    5   1.0055  0.578027967   0.6666667
## 748    2  -1.9945 -1.146570642   0.1666667
## 749    3  -0.9945 -0.571704439   0.3333333
## 750    4   0.0055  0.003161764   0.5000000
## 751    4   0.0055  0.003161764   0.5000000
## 752    3  -0.9945 -0.571704439   0.3333333
## 753    1  -2.9945 -1.721436844   0.0000000
## 754    5   1.0055  0.578027967   0.6666667
## 755    6   2.0055  1.152894170   0.8333333
## 756    5   1.0055  0.578027967   0.6666667
## 757    1  -2.9945 -1.721436844   0.0000000
## 758    6   2.0055  1.152894170   0.8333333
## 759    4   0.0055  0.003161764   0.5000000
## 760    7   3.0055  1.727760373   1.0000000
## 761    4   0.0055  0.003161764   0.5000000
## 762    4   0.0055  0.003161764   0.5000000
## 763    3  -0.9945 -0.571704439   0.3333333
## 764    7   3.0055  1.727760373   1.0000000
## 765    3  -0.9945 -0.571704439   0.3333333
## 766    7   3.0055  1.727760373   1.0000000
## 767    6   2.0055  1.152894170   0.8333333
## 768    5   1.0055  0.578027967   0.6666667
## 769    7   3.0055  1.727760373   1.0000000
## 770    6   2.0055  1.152894170   0.8333333
## 771    3  -0.9945 -0.571704439   0.3333333
## 772    7   3.0055  1.727760373   1.0000000
## 773    5   1.0055  0.578027967   0.6666667
## 774    4   0.0055  0.003161764   0.5000000
## 775    5   1.0055  0.578027967   0.6666667
## 776    1  -2.9945 -1.721436844   0.0000000
## 777    7   3.0055  1.727760373   1.0000000
## 778    4   0.0055  0.003161764   0.5000000
## 779    4   0.0055  0.003161764   0.5000000
## 780    5   1.0055  0.578027967   0.6666667
## 781    4   0.0055  0.003161764   0.5000000
## 782    4   0.0055  0.003161764   0.5000000
## 783    3  -0.9945 -0.571704439   0.3333333
## 784    5   1.0055  0.578027967   0.6666667
## 785    2  -1.9945 -1.146570642   0.1666667
## 786    6   2.0055  1.152894170   0.8333333
## 787    5   1.0055  0.578027967   0.6666667
## 788    4   0.0055  0.003161764   0.5000000
## 789    3  -0.9945 -0.571704439   0.3333333
## 790    7   3.0055  1.727760373   1.0000000
## 791    6   2.0055  1.152894170   0.8333333
## 792    2  -1.9945 -1.146570642   0.1666667
## 793    6   2.0055  1.152894170   0.8333333
## 794    1  -2.9945 -1.721436844   0.0000000
## 795    3  -0.9945 -0.571704439   0.3333333
```

```
## 796      4    0.0055   0.003161764     0.5000000
## 797      5    1.0055   0.578027967     0.6666667
## 798      6    2.0055   1.152894170     0.8333333
## 799      1   -2.9945  -1.721436844     0.0000000
## 800      4    0.0055   0.003161764     0.5000000
## 801      2   -1.9945  -1.146570642     0.1666667
## 802      3   -0.9945  -0.571704439     0.3333333
## 803      6    2.0055   1.152894170     0.8333333
## 804      7    3.0055   1.727760373     1.0000000
## 805      4    0.0055   0.003161764     0.5000000
## 806      7    3.0055   1.727760373     1.0000000
## 807      5    1.0055   0.578027967     0.6666667
## 808      7    3.0055   1.727760373     1.0000000
## 809      6    2.0055   1.152894170     0.8333333
## 810      1   -2.9945  -1.721436844     0.0000000
## 811      3   -0.9945  -0.571704439     0.3333333
## 812      3   -0.9945  -0.571704439     0.3333333
## 813      4    0.0055   0.003161764     0.5000000
## 814      4    0.0055   0.003161764     0.5000000
## 815      6    2.0055   1.152894170     0.8333333
## 816      4    0.0055   0.003161764     0.5000000
## 817      2   -1.9945  -1.146570642     0.1666667
## 818      4    0.0055   0.003161764     0.5000000
## 819      5    1.0055   0.578027967     0.6666667
## 820      4    0.0055   0.003161764     0.5000000
## 821      7    3.0055   1.727760373     1.0000000
## 822      4    0.0055   0.003161764     0.5000000
## 823      4    0.0055   0.003161764     0.5000000
## 824      3   -0.9945  -0.571704439     0.3333333
## 825      3   -0.9945  -0.571704439     0.3333333
## 826      3   -0.9945  -0.571704439     0.3333333
## 827      5    1.0055   0.578027967     0.6666667
## 828      4    0.0055   0.003161764     0.5000000
## 829      5    1.0055   0.578027967     0.6666667
## 830      1   -2.9945  -1.721436844     0.0000000
## 831      5    1.0055   0.578027967     0.6666667
## 832      5    1.0055   0.578027967     0.6666667
## 833      3   -0.9945  -0.571704439     0.3333333
## 834      5    1.0055   0.578027967     0.6666667
## 835      7    3.0055   1.727760373     1.0000000
## 836      5    1.0055   0.578027967     0.6666667
## 837      6    2.0055   1.152894170     0.8333333
## 838      6    2.0055   1.152894170     0.8333333
## 839      3   -0.9945  -0.571704439     0.3333333
## 840      3   -0.9945  -0.571704439     0.3333333
## 841      7    3.0055   1.727760373     1.0000000
## 842      5    1.0055   0.578027967     0.6666667
## 843      4    0.0055   0.003161764     0.5000000
## 844      6    2.0055   1.152894170     0.8333333
## 845      4    0.0055   0.003161764     0.5000000
## 846      1   -2.9945  -1.721436844     0.0000000
## 847      3   -0.9945  -0.571704439     0.3333333
## 848      3   -0.9945  -0.571704439     0.3333333
## 849      6    2.0055   1.152894170     0.8333333
```

```
## 850          2  -1.9945 -1.146570642    0.1666667
## 851          4   0.0055  0.003161764    0.5000000
## 852          3  -0.9945 -0.571704439    0.3333333
## 853          7   3.0055  1.727760373    1.0000000
## 854          4   0.0055  0.003161764    0.5000000
## 855          5   1.0055  0.578027967    0.6666667
## 856          6   2.0055  1.152894170    0.8333333
## 857          4   0.0055  0.003161764    0.5000000
## 858          2  -1.9945 -1.146570642    0.1666667
## 859          5   1.0055  0.578027967    0.6666667
## 860          2  -1.9945 -1.146570642    0.1666667
## 861          3  -0.9945 -0.571704439    0.3333333
## 862          5   1.0055  0.578027967    0.6666667
## 863          3  -0.9945 -0.571704439    0.3333333
## 864          6   2.0055  1.152894170    0.8333333
## 865          1  -2.9945 -1.721436844    0.0000000
## 866          7   3.0055  1.727760373    1.0000000
## 867          2  -1.9945 -1.146570642    0.1666667
## 868          4   0.0055  0.003161764    0.5000000
## 869          7   3.0055  1.727760373    1.0000000
## 870          6   2.0055  1.152894170    0.8333333
## 871          5   1.0055  0.578027967    0.6666667
## 872          3  -0.9945 -0.571704439    0.3333333
## 873          4   0.0055  0.003161764    0.5000000
## 874          4   0.0055  0.003161764    0.5000000
## 875          5   1.0055  0.578027967    0.6666667
## 876          4   0.0055  0.003161764    0.5000000
## 877          1  -2.9945 -1.721436844    0.0000000
## 878          7   3.0055  1.727760373    1.0000000
## 879          3  -0.9945 -0.571704439    0.3333333
## 880          5   1.0055  0.578027967    0.6666667
## 881          5   1.0055  0.578027967    0.6666667
## 882          5   1.0055  0.578027967    0.6666667
## 883          3  -0.9945 -0.571704439    0.3333333
## 884          3  -0.9945 -0.571704439    0.3333333
## 885          6   2.0055  1.152894170    0.8333333
## 886          5   1.0055  0.578027967    0.6666667
## 887          4   0.0055  0.003161764    0.5000000
## 888          2  -1.9945 -1.146570642    0.1666667
## 889          1  -2.9945 -1.721436844    0.0000000
## 890          4   0.0055  0.003161764    0.5000000
## 891          2  -1.9945 -1.146570642    0.1666667
## 892          5   1.0055  0.578027967    0.6666667
## 893          5   1.0055  0.578027967    0.6666667
## 894          6   2.0055  1.152894170    0.8333333
## 895          3  -0.9945 -0.571704439    0.3333333
## 896          4   0.0055  0.003161764    0.5000000
## 897          4   0.0055  0.003161764    0.5000000
## 898          3  -0.9945 -0.571704439    0.3333333
## 899          5   1.0055  0.578027967    0.6666667
## 900          4   0.0055  0.003161764    0.5000000
## 901          3  -0.9945 -0.571704439    0.3333333
## 902          6   2.0055  1.152894170    0.8333333
## 903          1  -2.9945 -1.721436844    0.0000000
```

```
## 904    3  -0.9945 -0.571704439   0.3333333
## 905    7   3.0055  1.727760373   1.0000000
## 906    3  -0.9945 -0.571704439   0.3333333
## 907    4   0.0055  0.003161764   0.5000000
## 908    7   3.0055  1.727760373   1.0000000
## 909    7   3.0055  1.727760373   1.0000000
## 910    5   1.0055  0.578027967   0.6666667
## 911    5   1.0055  0.578027967   0.6666667
## 912    2  -1.9945 -1.146570642   0.1666667
## 913    6   2.0055  1.152894170   0.8333333
## 914    4   0.0055  0.003161764   0.5000000
## 915    6   2.0055  1.152894170   0.8333333
## 916    3  -0.9945 -0.571704439   0.3333333
## 917    5   1.0055  0.578027967   0.6666667
## 918    5   1.0055  0.578027967   0.6666667
## 919    4   0.0055  0.003161764   0.5000000
## 920    2  -1.9945 -1.146570642   0.1666667
## 921    1  -2.9945 -1.721436844   0.0000000
## 922    1  -2.9945 -1.721436844   0.0000000
## 923    7   3.0055  1.727760373   1.0000000
## 924    3  -0.9945 -0.571704439   0.3333333
## 925    6   2.0055  1.152894170   0.8333333
## 926    4   0.0055  0.003161764   0.5000000
## 927    3  -0.9945 -0.571704439   0.3333333
## 928    6   2.0055  1.152894170   0.8333333
## 929    3  -0.9945 -0.571704439   0.3333333
## 930    5   1.0055  0.578027967   0.6666667
## 931    5   1.0055  0.578027967   0.6666667
## 932    7   3.0055  1.727760373   1.0000000
## 933    2  -1.9945 -1.146570642   0.1666667
## 934    4   0.0055  0.003161764   0.5000000
## 935    7   3.0055  1.727760373   1.0000000
## 936    4   0.0055  0.003161764   0.5000000
## 937    3  -0.9945 -0.571704439   0.3333333
## 938    6   2.0055  1.152894170   0.8333333
## 939    3  -0.9945 -0.571704439   0.3333333
## 940    1  -2.9945 -1.721436844   0.0000000
## 941    4   0.0055  0.003161764   0.5000000
## 942    3  -0.9945 -0.571704439   0.3333333
## 943    6   2.0055  1.152894170   0.8333333
## 944    5   1.0055  0.578027967   0.6666667
## 945    5   1.0055  0.578027967   0.6666667
## 946    6   2.0055  1.152894170   0.8333333
## 947    4   0.0055  0.003161764   0.5000000
## 948    3  -0.9945 -0.571704439   0.3333333
## 949    3  -0.9945 -0.571704439   0.3333333
## 950    4   0.0055  0.003161764   0.5000000
## 951    4   0.0055  0.003161764   0.5000000
## 952    3  -0.9945 -0.571704439   0.3333333
## 953    4   0.0055  0.003161764   0.5000000
## 954    4   0.0055  0.003161764   0.5000000
## 955    6   2.0055  1.152894170   0.8333333
## 956    5   1.0055  0.578027967   0.6666667
## 957    3  -0.9945 -0.571704439   0.3333333
```

```
## 958      5   1.0055   0.578027967    0.6666667
## 959      6   2.0055   1.152894170    0.8333333
## 960      5   1.0055   0.578027967    0.6666667
## 961      1  -2.9945  -1.721436844    0.0000000
## 962      6   2.0055   1.152894170    0.8333333
## 963      3  -0.9945  -0.571704439    0.3333333
## 964      4   0.0055   0.003161764    0.5000000
## 965      4   0.0055   0.003161764    0.5000000
## 966      3  -0.9945  -0.571704439    0.3333333
## 967      4   0.0055   0.003161764    0.5000000
## 968      5   1.0055   0.578027967    0.6666667
## 969      4   0.0055   0.003161764    0.5000000
## 970      4   0.0055   0.003161764    0.5000000
## 971      5   1.0055   0.578027967    0.6666667
## 972      2  -1.9945  -1.146570642    0.1666667
## 973      1  -2.9945  -1.721436844    0.0000000
## 974      7   3.0055   1.727760373    1.0000000
## 975      6   2.0055   1.152894170    0.8333333
## 976      4   0.0055   0.003161764    0.5000000
## 977      5   1.0055   0.578027967    0.6666667
## 978      4   0.0055   0.003161764    0.5000000
## 979      3  -0.9945  -0.571704439    0.3333333
## 980      7   3.0055   1.727760373    1.0000000
## 981      6   2.0055   1.152894170    0.8333333
## 982      4   0.0055   0.003161764    0.5000000
## 983      7   3.0055   1.727760373    1.0000000
## 984      1  -2.9945  -1.721436844    0.0000000
## 985      5   1.0055   0.578027967    0.6666667
## 986      2  -1.9945  -1.146570642    0.1666667
## 987      5   1.0055   0.578027967    0.6666667
## 988      3  -0.9945  -0.571704439    0.3333333
## 989      5   1.0055   0.578027967    0.6666667
## 990      5   1.0055   0.578027967    0.6666667
## 991      4   0.0055   0.003161764    0.5000000
## 992      3  -0.9945  -0.571704439    0.3333333
## 993      3  -0.9945  -0.571704439    0.3333333
## 994      3  -0.9945  -0.571704439    0.3333333
## 995      3  -0.9945  -0.571704439    0.3333333
## 996      1  -2.9945  -1.721436844    0.0000000
## 997      6   2.0055   1.152894170    0.8333333
## 998      7   3.0055   1.727760373    1.0000000
## 999      6   2.0055   1.152894170    0.8333333
## 1000     5   1.0055   0.578027967    0.6666667
## 1001     7   3.0055   1.727760373    1.0000000
## 1002     6   2.0055   1.152894170    0.8333333
## 1003     4   0.0055   0.003161764    0.5000000
## 1004     3  -0.9945  -0.571704439    0.3333333
## 1005     6   2.0055   1.152894170    0.8333333
## 1006     5   1.0055   0.578027967    0.6666667
## 1007     6   2.0055   1.152894170    0.8333333
## 1008     4   0.0055   0.003161764    0.5000000
## 1009     5   1.0055   0.578027967    0.6666667
## 1010     2  -1.9945  -1.146570642    0.1666667
## 1011     7   3.0055   1.727760373    1.0000000
```

```
## 1012    3  -0.9945 -0.571704439   0.3333333
## 1013    1  -2.9945 -1.721436844   0.0000000
## 1014    3  -0.9945 -0.571704439   0.3333333
## 1015    4   0.0055  0.003161764   0.5000000
## 1016    5   1.0055  0.578027967   0.6666667
## 1017    4   0.0055  0.003161764   0.5000000
## 1018    1  -2.9945 -1.721436844   0.0000000
## 1019    6   2.0055  1.152894170   0.8333333
## 1020    3  -0.9945 -0.571704439   0.3333333
## 1021    4   0.0055  0.003161764   0.5000000
## 1022    5   1.0055  0.578027967   0.6666667
## 1023    4   0.0055  0.003161764   0.5000000
## 1024    5   1.0055  0.578027967   0.6666667
## 1025    2  -1.9945 -1.146570642   0.1666667
## 1026    6   2.0055  1.152894170   0.8333333
## 1027    3  -0.9945 -0.571704439   0.3333333
## 1028    6   2.0055  1.152894170   0.8333333
## 1029    4   0.0055  0.003161764   0.5000000
## 1030    5   1.0055  0.578027967   0.6666667
## 1031    5   1.0055  0.578027967   0.6666667
## 1032    6   2.0055  1.152894170   0.8333333
## 1033    7   3.0055  1.727760373   1.0000000
## 1034    4   0.0055  0.003161764   0.5000000
## 1035    5   1.0055  0.578027967   0.6666667
## 1036    3  -0.9945 -0.571704439   0.3333333
## 1037    4   0.0055  0.003161764   0.5000000
## 1038    3  -0.9945 -0.571704439   0.3333333
## 1039    7   3.0055  1.727760373   1.0000000
## 1040    4   0.0055  0.003161764   0.5000000
## 1041    3  -0.9945 -0.571704439   0.3333333
## 1042    7   3.0055  1.727760373   1.0000000
## 1043    1  -2.9945 -1.721436844   0.0000000
## 1044    4   0.0055  0.003161764   0.5000000
## 1045    7   3.0055  1.727760373   1.0000000
## 1046    5   1.0055  0.578027967   0.6666667
## 1047    1  -2.9945 -1.721436844   0.0000000
## 1048    3  -0.9945 -0.571704439   0.3333333
## 1049    1  -2.9945 -1.721436844   0.0000000
## 1050    5   1.0055  0.578027967   0.6666667
## 1051    5   1.0055  0.578027967   0.6666667
## 1052    5   1.0055  0.578027967   0.6666667
## 1053    5   1.0055  0.578027967   0.6666667
## 1054    3  -0.9945 -0.571704439   0.3333333
## 1055    3  -0.9945 -0.571704439   0.3333333
## 1056    3  -0.9945 -0.571704439   0.3333333
## 1057    7   3.0055  1.727760373   1.0000000
## 1058    4   0.0055  0.003161764   0.5000000
## 1059    1  -2.9945 -1.721436844   0.0000000
## 1060    3  -0.9945 -0.571704439   0.3333333
## 1061    5   1.0055  0.578027967   0.6666667
## 1062    6   2.0055  1.152894170   0.8333333
## 1063    3  -0.9945 -0.571704439   0.3333333
## 1064    4   0.0055  0.003161764   0.5000000
## 1065    4   0.0055  0.003161764   0.5000000
```

```
## 1066      1  -2.9945 -1.721436844     0.0000000
## 1067      6   2.0055  1.152894170     0.8333333
## 1068      3  -0.9945 -0.571704439     0.3333333
## 1069      5   1.0055  0.578027967     0.6666667
## 1070      1  -2.9945 -1.721436844     0.0000000
## 1071      7   3.0055  1.727760373     1.0000000
## 1072      6   2.0055  1.152894170     0.8333333
## 1073      7   3.0055  1.727760373     1.0000000
## 1074      4   0.0055  0.003161764     0.5000000
## 1075      3  -0.9945 -0.571704439     0.3333333
## 1076      2  -1.9945 -1.146570642     0.1666667
## 1077      5   1.0055  0.578027967     0.6666667
## 1078      1  -2.9945 -1.721436844     0.0000000
## 1079      4   0.0055  0.003161764     0.5000000
## 1080      3  -0.9945 -0.571704439     0.3333333
## 1081      5   1.0055  0.578027967     0.6666667
## 1082      6   2.0055  1.152894170     0.8333333
## 1083      5   1.0055  0.578027967     0.6666667
## 1084      5   1.0055  0.578027967     0.6666667
## 1085      4   0.0055  0.003161764     0.5000000
## 1086      1  -2.9945 -1.721436844     0.0000000
## 1087      7   3.0055  1.727760373     1.0000000
## 1088      3  -0.9945 -0.571704439     0.3333333
## 1089      1  -2.9945 -1.721436844     0.0000000
## 1090      6   2.0055  1.152894170     0.8333333
## 1091      5   1.0055  0.578027967     0.6666667
## 1092      1  -2.9945 -1.721436844     0.0000000
## 1093      5   1.0055  0.578027967     0.6666667
## 1094      5   1.0055  0.578027967     0.6666667
## 1095      1  -2.9945 -1.721436844     0.0000000
## 1096      7   3.0055  1.727760373     1.0000000
## 1097      2  -1.9945 -1.146570642     0.1666667
## 1098      5   1.0055  0.578027967     0.6666667
## 1099      3  -0.9945 -0.571704439     0.3333333
## 1100      5   1.0055  0.578027967     0.6666667
## 1101      2  -1.9945 -1.146570642     0.1666667
## 1102      5   1.0055  0.578027967     0.6666667
## 1103      4   0.0055  0.003161764     0.5000000
## 1104      5   1.0055  0.578027967     0.6666667
## 1105      4   0.0055  0.003161764     0.5000000
## 1106      3  -0.9945 -0.571704439     0.3333333
## 1107      6   2.0055  1.152894170     0.8333333
## 1108      4   0.0055  0.003161764     0.5000000
## 1109      6   2.0055  1.152894170     0.8333333
## 1110      7   3.0055  1.727760373     1.0000000
## 1111      5   1.0055  0.578027967     0.6666667
## 1112      5   1.0055  0.578027967     0.6666667
## 1113      7   3.0055  1.727760373     1.0000000
## 1114      5   1.0055  0.578027967     0.6666667
## 1115      2  -1.9945 -1.146570642     0.1666667
## 1116      6   2.0055  1.152894170     0.8333333
## 1117      4   0.0055  0.003161764     0.5000000
## 1118      6   2.0055  1.152894170     0.8333333
## 1119      5   1.0055  0.578027967     0.6666667
```

```
## 1120       3  -0.9945 -0.571704439   0.3333333
## 1121       3  -0.9945 -0.571704439   0.3333333
## 1122       1  -2.9945 -1.721436844   0.0000000
## 1123       7   3.0055  1.727760373   1.0000000
## 1124       2  -1.9945 -1.146570642   0.1666667
## 1125       1  -2.9945 -1.721436844   0.0000000
## 1126       7   3.0055  1.727760373   1.0000000
## 1127       5   1.0055  0.578027967   0.6666667
## 1128       5   1.0055  0.578027967   0.6666667
## 1129       7   3.0055  1.727760373   1.0000000
## 1130       3  -0.9945 -0.571704439   0.3333333
## 1131       3  -0.9945 -0.571704439   0.3333333
## 1132       4   0.0055  0.003161764   0.5000000
## 1133       7   3.0055  1.727760373   1.0000000
## 1134       6   2.0055  1.152894170   0.8333333
## 1135       3  -0.9945 -0.571704439   0.3333333
## 1136       4   0.0055  0.003161764   0.5000000
## 1137       5   1.0055  0.578027967   0.6666667
## 1138       4   0.0055  0.003161764   0.5000000
## 1139       4   0.0055  0.003161764   0.5000000
## 1140       4   0.0055  0.003161764   0.5000000
## 1141       4   0.0055  0.003161764   0.5000000
## 1142       4   0.0055  0.003161764   0.5000000
## 1143       5   1.0055  0.578027967   0.6666667
## 1144       5   1.0055  0.578027967   0.6666667
## 1145       5   1.0055  0.578027967   0.6666667
## 1146       5   1.0055  0.578027967   0.6666667
## 1147       3  -0.9945 -0.571704439   0.3333333
## 1148       6   2.0055  1.152894170   0.8333333
## 1149       5   1.0055  0.578027967   0.6666667
## 1150       4   0.0055  0.003161764   0.5000000
## 1151       4   0.0055  0.003161764   0.5000000
## 1152       5   1.0055  0.578027967   0.6666667
## 1153       3  -0.9945 -0.571704439   0.3333333
## 1154       1  -2.9945 -1.721436844   0.0000000
## 1155       1  -2.9945 -1.721436844   0.0000000
## 1156       3  -0.9945 -0.571704439   0.3333333
## 1157       5   1.0055  0.578027967   0.6666667
## 1158       5   1.0055  0.578027967   0.6666667
## 1159       3  -0.9945 -0.571704439   0.3333333
## 1160       5   1.0055  0.578027967   0.6666667
## 1161       7   3.0055  1.727760373   1.0000000
## 1162       7   3.0055  1.727760373   1.0000000
## 1163       1  -2.9945 -1.721436844   0.0000000
## 1164       3  -0.9945 -0.571704439   0.3333333
## 1165       7   3.0055  1.727760373   1.0000000
## 1166       2  -1.9945 -1.146570642   0.1666667
## 1167       4   0.0055  0.003161764   0.5000000
## 1168       2  -1.9945 -1.146570642   0.1666667
## 1169       7   3.0055  1.727760373   1.0000000
## 1170       5   1.0055  0.578027967   0.6666667
## 1171       6   2.0055  1.152894170   0.8333333
## 1172       2  -1.9945 -1.146570642   0.1666667
## 1173       5   1.0055  0.578027967   0.6666667
```

```
## 1174    5    1.0055   0.578027967    0.6666667
## 1175    4    0.0055   0.003161764    0.5000000
## 1176    4    0.0055   0.003161764    0.5000000
## 1177    6    2.0055   1.152894170    0.8333333
## 1178    2   -1.9945  -1.146570642    0.1666667
## 1179    1   -2.9945  -1.721436844    0.0000000
## 1180    7    3.0055   1.727760373    1.0000000
## 1181    1   -2.9945  -1.721436844    0.0000000
## 1182    4    0.0055   0.003161764    0.5000000
## 1183    2   -1.9945  -1.146570642    0.1666667
## 1184    3   -0.9945  -0.571704439    0.3333333
## 1185    3   -0.9945  -0.571704439    0.3333333
## 1186    3   -0.9945  -0.571704439    0.3333333
## 1187    7    3.0055   1.727760373    1.0000000
## 1188    4    0.0055   0.003161764    0.5000000
## 1189    6    2.0055   1.152894170    0.8333333
## 1190    5    1.0055   0.578027967    0.6666667
## 1191    4    0.0055   0.003161764    0.5000000
## 1192    4    0.0055   0.003161764    0.5000000
## 1193    4    0.0055   0.003161764    0.5000000
## 1194    2   -1.9945  -1.146570642    0.1666667
## 1195    4    0.0055   0.003161764    0.5000000
## 1196    4    0.0055   0.003161764    0.5000000
## 1197    1   -2.9945  -1.721436844    0.0000000
## 1198    2   -1.9945  -1.146570642    0.1666667
## 1199    5    1.0055   0.578027967    0.6666667
## 1200    1   -2.9945  -1.721436844    0.0000000
## 1201    2   -1.9945  -1.146570642    0.1666667
## 1202    3   -0.9945  -0.571704439    0.3333333
## 1203    2   -1.9945  -1.146570642    0.1666667
## 1204    3   -0.9945  -0.571704439    0.3333333
## 1205    4    0.0055   0.003161764    0.5000000
## 1206    7    3.0055   1.727760373    1.0000000
## 1207    5    1.0055   0.578027967    0.6666667
## 1208    4    0.0055   0.003161764    0.5000000
## 1209    5    1.0055   0.578027967    0.6666667
## 1210    6    2.0055   1.152894170    0.8333333
## 1211    5    1.0055   0.578027967    0.6666667
## 1212    3   -0.9945  -0.571704439    0.3333333
## 1213    6    2.0055   1.152894170    0.8333333
## 1214    4    0.0055   0.003161764    0.5000000
## 1215    2   -1.9945  -1.146570642    0.1666667
## 1216    5    1.0055   0.578027967    0.6666667
## 1217    5    1.0055   0.578027967    0.6666667
## 1218    5    1.0055   0.578027967    0.6666667
## 1219    3   -0.9945  -0.571704439    0.3333333
## 1220    5    1.0055   0.578027967    0.6666667
## 1221    3   -0.9945  -0.571704439    0.3333333
## 1222    7    3.0055   1.727760373    1.0000000
## 1223    5    1.0055   0.578027967    0.6666667
## 1224    3   -0.9945  -0.571704439    0.3333333
## 1225    3   -0.9945  -0.571704439    0.3333333
## 1226    1   -2.9945  -1.721436844    0.0000000
## 1227    4    0.0055   0.003161764    0.5000000
```

```
## 1228    3  -0.9945 -0.571704439   0.3333333
## 1229    1  -2.9945 -1.721436844   0.0000000
## 1230    3  -0.9945 -0.571704439   0.3333333
## 1231    6   2.0055  1.152894170   0.8333333
## 1232    5   1.0055  0.578027967   0.6666667
## 1233    6   2.0055  1.152894170   0.8333333
## 1234    1  -2.9945 -1.721436844   0.0000000
## 1235    3  -0.9945 -0.571704439   0.3333333
## 1236    5   1.0055  0.578027967   0.6666667
## 1237    4   0.0055  0.003161764   0.5000000
## 1238    5   1.0055  0.578027967   0.6666667
## 1239    6   2.0055  1.152894170   0.8333333
## 1240    3  -0.9945 -0.571704439   0.3333333
## 1241    4   0.0055  0.003161764   0.5000000
## 1242    7   3.0055  1.727760373   1.0000000
## 1243    5   1.0055  0.578027967   0.6666667
## 1244    3  -0.9945 -0.571704439   0.3333333
## 1245    4   0.0055  0.003161764   0.5000000
## 1246    6   2.0055  1.152894170   0.8333333
## 1247    1  -2.9945 -1.721436844   0.0000000
## 1248    4   0.0055  0.003161764   0.5000000
## 1249    4   0.0055  0.003161764   0.5000000
## 1250    5   1.0055  0.578027967   0.6666667
## 1251    5   1.0055  0.578027967   0.6666667
## 1252    5   1.0055  0.578027967   0.6666667
## 1253    1  -2.9945 -1.721436844   0.0000000
## 1254    3  -0.9945 -0.571704439   0.3333333
## 1255    3  -0.9945 -0.571704439   0.3333333
## 1256    2  -1.9945 -1.146570642   0.1666667
## 1257    5   1.0055  0.578027967   0.6666667
## 1258    1  -2.9945 -1.721436844   0.0000000
## 1259    1  -2.9945 -1.721436844   0.0000000
## 1260    4   0.0055  0.003161764   0.5000000
## 1261    4   0.0055  0.003161764   0.5000000
## 1262    7   3.0055  1.727760373   1.0000000
## 1263    5   1.0055  0.578027967   0.6666667
## 1264    5   1.0055  0.578027967   0.6666667
## 1265    7   3.0055  1.727760373   1.0000000
## 1266    2  -1.9945 -1.146570642   0.1666667
## 1267    2  -1.9945 -1.146570642   0.1666667
## 1268    4   0.0055  0.003161764   0.5000000
## 1269    5   1.0055  0.578027967   0.6666667
## 1270    3  -0.9945 -0.571704439   0.3333333
## 1271    2  -1.9945 -1.146570642   0.1666667
## 1272    5   1.0055  0.578027967   0.6666667
## 1273    4   0.0055  0.003161764   0.5000000
## 1274    5   1.0055  0.578027967   0.6666667
## 1275    6   2.0055  1.152894170   0.8333333
## 1276    5   1.0055  0.578027967   0.6666667
## 1277    1  -2.9945 -1.721436844   0.0000000
## 1278    7   3.0055  1.727760373   1.0000000
## 1279    3  -0.9945 -0.571704439   0.3333333
## 1280    3  -0.9945 -0.571704439   0.3333333
## 1281    2  -1.9945 -1.146570642   0.1666667
```

```
## 1282    6   2.0055  1.152894170   0.8333333
## 1283    3  -0.9945 -0.571704439   0.3333333
## 1284    5   1.0055  0.578027967   0.6666667
## 1285    3  -0.9945 -0.571704439   0.3333333
## 1286    4   0.0055  0.003161764   0.5000000
## 1287    1  -2.9945 -1.721436844   0.0000000
## 1288    7   3.0055  1.727760373   1.0000000
## 1289    5   1.0055  0.578027967   0.6666667
## 1290    4   0.0055  0.003161764   0.5000000
## 1291    5   1.0055  0.578027967   0.6666667
## 1292    3  -0.9945 -0.571704439   0.3333333
## 1293    2  -1.9945 -1.146570642   0.1666667
## 1294    3  -0.9945 -0.571704439   0.3333333
## 1295    5   1.0055  0.578027967   0.6666667
## 1296    4   0.0055  0.003161764   0.5000000
## 1297    6   2.0055  1.152894170   0.8333333
## 1298    3  -0.9945 -0.571704439   0.3333333
## 1299    1  -2.9945 -1.721436844   0.0000000
## 1300    4   0.0055  0.003161764   0.5000000
## 1301    3  -0.9945 -0.571704439   0.3333333
## 1302    4   0.0055  0.003161764   0.5000000
## 1303    1  -2.9945 -1.721436844   0.0000000
## 1304    7   3.0055  1.727760373   1.0000000
## 1305    3  -0.9945 -0.571704439   0.3333333
## 1306    2  -1.9945 -1.146570642   0.1666667
## 1307    5   1.0055  0.578027967   0.6666667
## 1308    5   1.0055  0.578027967   0.6666667
## 1309    4   0.0055  0.003161764   0.5000000
## 1310    3  -0.9945 -0.571704439   0.3333333
## 1311    3  -0.9945 -0.571704439   0.3333333
## 1312    5   1.0055  0.578027967   0.6666667
## 1313    7   3.0055  1.727760373   1.0000000
## 1314    5   1.0055  0.578027967   0.6666667
## 1315    6   2.0055  1.152894170   0.8333333
## 1316    3  -0.9945 -0.571704439   0.3333333
## 1317    5   1.0055  0.578027967   0.6666667
## 1318    6   2.0055  1.152894170   0.8333333
## 1319    5   1.0055  0.578027967   0.6666667
## 1320    6   2.0055  1.152894170   0.8333333
## 1321    6   2.0055  1.152894170   0.8333333
## 1322    1  -2.9945 -1.721436844   0.0000000
## 1323    5   1.0055  0.578027967   0.6666667
## 1324    3  -0.9945 -0.571704439   0.3333333
## 1325    2  -1.9945 -1.146570642   0.1666667
## 1326    5   1.0055  0.578027967   0.6666667
## 1327    4   0.0055  0.003161764   0.5000000
## 1328    3  -0.9945 -0.571704439   0.3333333
## 1329    4   0.0055  0.003161764   0.5000000
## 1330    7   3.0055  1.727760373   1.0000000
## 1331    3  -0.9945 -0.571704439   0.3333333
## 1332    6   2.0055  1.152894170   0.8333333
## 1333    6   2.0055  1.152894170   0.8333333
## 1334    5   1.0055  0.578027967   0.6666667
## 1335    1  -2.9945 -1.721436844   0.0000000
```

```
## 1336    6    2.0055   1.152894170    0.8333333
## 1337    5    1.0055   0.578027967    0.6666667
## 1338    2   -1.9945  -1.146570642    0.1666667
## 1339    2   -1.9945  -1.146570642    0.1666667
## 1340    5    1.0055   0.578027967    0.6666667
## 1341    3   -0.9945  -0.571704439    0.3333333
## 1342    2   -1.9945  -1.146570642    0.1666667
## 1343    6    2.0055   1.152894170    0.8333333
## 1344    5    1.0055   0.578027967    0.6666667
## 1345    7    3.0055   1.727760373    1.0000000
## 1346    5    1.0055   0.578027967    0.6666667
## 1347    3   -0.9945  -0.571704439    0.3333333
## 1348    6    2.0055   1.152894170    0.8333333
## 1349    3   -0.9945  -0.571704439    0.3333333
## 1350    1   -2.9945  -1.721436844    0.0000000
## 1351    6    2.0055   1.152894170    0.8333333
## 1352    7    3.0055   1.727760373    1.0000000
## 1353    4    0.0055   0.003161764    0.5000000
## 1354    4    0.0055   0.003161764    0.5000000
## 1355    1   -2.9945  -1.721436844    0.0000000
## 1356    7    3.0055   1.727760373    1.0000000
## 1357    5    1.0055   0.578027967    0.6666667
## 1358    5    1.0055   0.578027967    0.6666667
## 1359    3   -0.9945  -0.571704439    0.3333333
## 1360    4    0.0055   0.003161764    0.5000000
## 1361    5    1.0055   0.578027967    0.6666667
## 1362    6    2.0055   1.152894170    0.8333333
## 1363    1   -2.9945  -1.721436844    0.0000000
## 1364    6    2.0055   1.152894170    0.8333333
## 1365    6    2.0055   1.152894170    0.8333333
## 1366    4    0.0055   0.003161764    0.5000000
## 1367    5    1.0055   0.578027967    0.6666667
## 1368    5    1.0055   0.578027967    0.6666667
## 1369    4    0.0055   0.003161764    0.5000000
## 1370    4    0.0055   0.003161764    0.5000000
## 1371    3   -0.9945  -0.571704439    0.3333333
## 1372    5    1.0055   0.578027967    0.6666667
## 1373    3   -0.9945  -0.571704439    0.3333333
## 1374    3   -0.9945  -0.571704439    0.3333333
## 1375    1   -2.9945  -1.721436844    0.0000000
## 1376    3   -0.9945  -0.571704439    0.3333333
## 1377    6    2.0055   1.152894170    0.8333333
## 1378    4    0.0055   0.003161764    0.5000000
## 1379    6    2.0055   1.152894170    0.8333333
## 1380    3   -0.9945  -0.571704439    0.3333333
## 1381    5    1.0055   0.578027967    0.6666667
## 1382    5    1.0055   0.578027967    0.6666667
## 1383    5    1.0055   0.578027967    0.6666667
## 1384    4    0.0055   0.003161764    0.5000000
## 1385    3   -0.9945  -0.571704439    0.3333333
## 1386    1   -2.9945  -1.721436844    0.0000000
## 1387    5    1.0055   0.578027967    0.6666667
## 1388    3   -0.9945  -0.571704439    0.3333333
## 1389    5    1.0055   0.578027967    0.6666667
```

```
## 1390    6    2.0055   1.152894170   0.8333333
## 1391    1   -2.9945  -1.721436844   0.0000000
## 1392    5    1.0055   0.578027967   0.6666667
## 1393    4    0.0055   0.003161764   0.5000000
## 1394    5    1.0055   0.578027967   0.6666667
## 1395    3   -0.9945  -0.571704439   0.3333333
## 1396    7    3.0055   1.727760373   1.0000000
## 1397    5    1.0055   0.578027967   0.6666667
## 1398    4    0.0055   0.003161764   0.5000000
## 1399    4    0.0055   0.003161764   0.5000000
## 1400    3   -0.9945  -0.571704439   0.3333333
## 1401    5    1.0055   0.578027967   0.6666667
## 1402    3   -0.9945  -0.571704439   0.3333333
## 1403    5    1.0055   0.578027967   0.6666667
## 1404    1   -2.9945  -1.721436844   0.0000000
## 1405    3   -0.9945  -0.571704439   0.3333333
## 1406    7    3.0055   1.727760373   1.0000000
## 1407    4    0.0055   0.003161764   0.5000000
## 1408    3   -0.9945  -0.571704439   0.3333333
## 1409    4    0.0055   0.003161764   0.5000000
## 1410    6    2.0055   1.152894170   0.8333333
## 1411    1   -2.9945  -1.721436844   0.0000000
## 1412    7    3.0055   1.727760373   1.0000000
## 1413    4    0.0055   0.003161764   0.5000000
## 1414    3   -0.9945  -0.571704439   0.3333333
## 1415    3   -0.9945  -0.571704439   0.3333333
## 1416    2   -1.9945  -1.146570642   0.1666667
## 1417    4    0.0055   0.003161764   0.5000000
## 1418    3   -0.9945  -0.571704439   0.3333333
## 1419    5    1.0055   0.578027967   0.6666667
## 1420    7    3.0055   1.727760373   1.0000000
## 1421    4    0.0055   0.003161764   0.5000000
## 1422    2   -1.9945  -1.146570642   0.1666667
## 1423    4    0.0055   0.003161764   0.5000000
## 1424    5    1.0055   0.578027967   0.6666667
## 1425    3   -0.9945  -0.571704439   0.3333333
## 1426    7    3.0055   1.727760373   1.0000000
## 1427    6    2.0055   1.152894170   0.8333333
## 1428    7    3.0055   1.727760373   1.0000000
## 1429    3   -0.9945  -0.571704439   0.3333333
## 1430    5    1.0055   0.578027967   0.6666667
## 1431    3   -0.9945  -0.571704439   0.3333333
## 1432    7    3.0055   1.727760373   1.0000000
## 1433    3   -0.9945  -0.571704439   0.3333333
## 1434    2   -1.9945  -1.146570642   0.1666667
## 1435    4    0.0055   0.003161764   0.5000000
## 1436    4    0.0055   0.003161764   0.5000000
## 1437    4    0.0055   0.003161764   0.5000000
## 1438    3   -0.9945  -0.571704439   0.3333333
## 1439    5    1.0055   0.578027967   0.6666667
## 1440    5    1.0055   0.578027967   0.6666667
## 1441    4    0.0055   0.003161764   0.5000000
## 1442    2   -1.9945  -1.146570642   0.1666667
## 1443    1   -2.9945  -1.721436844   0.0000000
```

```
## 1444    3  -0.9945 -0.571704439    0.3333333
## 1445    4   0.0055  0.003161764    0.5000000
## 1446    3  -0.9945 -0.571704439    0.3333333
## 1447    5   1.0055  0.578027967    0.6666667
## 1448    1  -2.9945 -1.721436844    0.0000000
## 1449    4   0.0055  0.003161764    0.5000000
## 1450    3  -0.9945 -0.571704439    0.3333333
## 1451    5   1.0055  0.578027967    0.6666667
## 1452    3  -0.9945 -0.571704439    0.3333333
## 1453    3  -0.9945 -0.571704439    0.3333333
## 1454    5   1.0055  0.578027967    0.6666667
## 1455    6   2.0055  1.152894170    0.8333333
## 1456    2  -1.9945 -1.146570642    0.1666667
## 1457    1  -2.9945 -1.721436844    0.0000000
## 1458    7   3.0055  1.727760373    1.0000000
## 1459    3  -0.9945 -0.571704439    0.3333333
## 1460    1  -2.9945 -1.721436844    0.0000000
## 1461    4   0.0055  0.003161764    0.5000000
## 1462    3  -0.9945 -0.571704439    0.3333333
## 1463    7   3.0055  1.727760373    1.0000000
## 1464    5   1.0055  0.578027967    0.6666667
## 1465    3  -0.9945 -0.571704439    0.3333333
## 1466    5   1.0055  0.578027967    0.6666667
## 1467    1  -2.9945 -1.721436844    0.0000000
## 1468    2  -1.9945 -1.146570642    0.1666667
## 1469    1  -2.9945 -1.721436844    0.0000000
## 1470    3  -0.9945 -0.571704439    0.3333333
## 1471    4   0.0055  0.003161764    0.5000000
## 1472    1  -2.9945 -1.721436844    0.0000000
## 1473    4   0.0055  0.003161764    0.5000000
## 1474    6   2.0055  1.152894170    0.8333333
## 1475    1  -2.9945 -1.721436844    0.0000000
## 1476    5   1.0055  0.578027967    0.6666667
## 1477    3  -0.9945 -0.571704439    0.3333333
## 1478    4   0.0055  0.003161764    0.5000000
## 1479    4   0.0055  0.003161764    0.5000000
## 1480    3  -0.9945 -0.571704439    0.3333333
## 1481    1  -2.9945 -1.721436844    0.0000000
## 1482    5   1.0055  0.578027967    0.6666667
## 1483    6   2.0055  1.152894170    0.8333333
## 1484    1  -2.9945 -1.721436844    0.0000000
## 1485    6   2.0055  1.152894170    0.8333333
## 1486    2  -1.9945 -1.146570642    0.1666667
## 1487    3  -0.9945 -0.571704439    0.3333333
## 1488    3  -0.9945 -0.571704439    0.3333333
## 1489    4   0.0055  0.003161764    0.5000000
## 1490    2  -1.9945 -1.146570642    0.1666667
## 1491    4   0.0055  0.003161764    0.5000000
## 1492    7   3.0055  1.727760373    1.0000000
## 1493    5   1.0055  0.578027967    0.6666667
## 1494    5   1.0055  0.578027967    0.6666667
## 1495    4   0.0055  0.003161764    0.5000000
## 1496    5   1.0055  0.578027967    0.6666667
## 1497    4   0.0055  0.003161764    0.5000000
```

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## 1498    5   1.0055  0.578027967    0.6666667
## 1499    3  -0.9945 -0.571704439    0.3333333
## 1500    2  -1.9945 -1.146570642    0.1666667
## 1501    5   1.0055  0.578027967    0.6666667
## 1502    4   0.0055  0.003161764    0.5000000
## 1503    7   3.0055  1.727760373    1.0000000
## 1504    5   1.0055  0.578027967    0.6666667
## 1505    3  -0.9945 -0.571704439    0.3333333
## 1506    4   0.0055  0.003161764    0.5000000
## 1507    1  -2.9945 -1.721436844    0.0000000
## 1508    2  -1.9945 -1.146570642    0.1666667
## 1509    4   0.0055  0.003161764    0.5000000
## 1510    4   0.0055  0.003161764    0.5000000
## 1511    1  -2.9945 -1.721436844    0.0000000
## 1512    4   0.0055  0.003161764    0.5000000
## 1513    6   2.0055  1.152894170    0.8333333
## 1514    7   3.0055  1.727760373    1.0000000
## 1515    1  -2.9945 -1.721436844    0.0000000
## 1516    4   0.0055  0.003161764    0.5000000
## 1517    2  -1.9945 -1.146570642    0.1666667
## 1518    6   2.0055  1.152894170    0.8333333
## 1519    7   3.0055  1.727760373    1.0000000
## 1520    3  -0.9945 -0.571704439    0.3333333
## 1521    3  -0.9945 -0.571704439    0.3333333
## 1522    4   0.0055  0.003161764    0.5000000
## 1523    4   0.0055  0.003161764    0.5000000
## 1524    4   0.0055  0.003161764    0.5000000
## 1525    6   2.0055  1.152894170    0.8333333
## 1526    5   1.0055  0.578027967    0.6666667
## 1527    4   0.0055  0.003161764    0.5000000
## 1528    6   2.0055  1.152894170    0.8333333
## 1529    3  -0.9945 -0.571704439    0.3333333
## 1530    5   1.0055  0.578027967    0.6666667
## 1531    4   0.0055  0.003161764    0.5000000
## 1532    5   1.0055  0.578027967    0.6666667
## 1533    5   1.0055  0.578027967    0.6666667
## 1534    2  -1.9945 -1.146570642    0.1666667
## 1535    3  -0.9945 -0.571704439    0.3333333
## 1536    4   0.0055  0.003161764    0.5000000
## 1537    3  -0.9945 -0.571704439    0.3333333
## 1538    3  -0.9945 -0.571704439    0.3333333
## 1539    7   3.0055  1.727760373    1.0000000
## 1540    5   1.0055  0.578027967    0.6666667
## 1541    2  -1.9945 -1.146570642    0.1666667
## 1542    1  -2.9945 -1.721436844    0.0000000
## 1543    3  -0.9945 -0.571704439    0.3333333
## 1544    3  -0.9945 -0.571704439    0.3333333
## 1545    3  -0.9945 -0.571704439    0.3333333
## 1546    1  -2.9945 -1.721436844    0.0000000
## 1547    5   1.0055  0.578027967    0.6666667
## 1548    3  -0.9945 -0.571704439    0.3333333
## 1549    2  -1.9945 -1.146570642    0.1666667
## 1550    5   1.0055  0.578027967    0.6666667
## 1551    3  -0.9945 -0.571704439    0.3333333
```

```
## 1552   6   2.0055   1.152894170   0.8333333
## 1553   3  -0.9945  -0.571704439   0.3333333
## 1554   5   1.0055   0.578027967   0.6666667
## 1555   7   3.0055   1.727760373   1.0000000
## 1556   3  -0.9945  -0.571704439   0.3333333
## 1557   2  -1.9945  -1.146570642   0.1666667
## 1558   6   2.0055   1.152894170   0.8333333
## 1559   7   3.0055   1.727760373   1.0000000
## 1560   2  -1.9945  -1.146570642   0.1666667
## 1561   5   1.0055   0.578027967   0.6666667
## 1562   5   1.0055   0.578027967   0.6666667
## 1563   5   1.0055   0.578027967   0.6666667
## 1564   2  -1.9945  -1.146570642   0.1666667
## 1565   7   3.0055   1.727760373   1.0000000
## 1566   1  -2.9945  -1.721436844   0.0000000
## 1567   5   1.0055   0.578027967   0.6666667
## 1568   4   0.0055   0.003161764   0.5000000
## 1569   5   1.0055   0.578027967   0.6666667
## 1570   3  -0.9945  -0.571704439   0.3333333
## 1571   6   2.0055   1.152894170   0.8333333
## 1572   2  -1.9945  -1.146570642   0.1666667
## 1573   4   0.0055   0.003161764   0.5000000
## 1574   2  -1.9945  -1.146570642   0.1666667
## 1575   2  -1.9945  -1.146570642   0.1666667
## 1576   7   3.0055   1.727760373   1.0000000
## 1577   5   1.0055   0.578027967   0.6666667
## 1578   5   1.0055   0.578027967   0.6666667
## 1579   2  -1.9945  -1.146570642   0.1666667
## 1580   6   2.0055   1.152894170   0.8333333
## 1581   7   3.0055   1.727760373   1.0000000
## 1582   4   0.0055   0.003161764   0.5000000
## 1583   4   0.0055   0.003161764   0.5000000
## 1584   3  -0.9945  -0.571704439   0.3333333
## 1585   3  -0.9945  -0.571704439   0.3333333
## 1586   5   1.0055   0.578027967   0.6666667
## 1587   7   3.0055   1.727760373   1.0000000
## 1588   5   1.0055   0.578027967   0.6666667
## 1589   3  -0.9945  -0.571704439   0.3333333
## 1590   1  -2.9945  -1.721436844   0.0000000
## 1591   3  -0.9945  -0.571704439   0.3333333
## 1592   5   1.0055   0.578027967   0.6666667
## 1593   6   2.0055   1.152894170   0.8333333
## 1594   5   1.0055   0.578027967   0.6666667
## 1595   1  -2.9945  -1.721436844   0.0000000
## 1596   5   1.0055   0.578027967   0.6666667
## 1597   3  -0.9945  -0.571704439   0.3333333
## 1598   4   0.0055   0.003161764   0.5000000
## 1599   4   0.0055   0.003161764   0.5000000
## 1600   5   1.0055   0.578027967   0.6666667
## 1601   5   1.0055   0.578027967   0.6666667
## 1602   6   2.0055   1.152894170   0.8333333
## 1603   7   3.0055   1.727760373   1.0000000
## 1604   5   1.0055   0.578027967   0.6666667
## 1605   6   2.0055   1.152894170   0.8333333
```

```
## 1606    3  -0.9945 -0.571704439   0.3333333
## 1607    1  -2.9945 -1.721436844   0.0000000
## 1608    7   3.0055  1.727760373   1.0000000
## 1609    3  -0.9945 -0.571704439   0.3333333
## 1610    3  -0.9945 -0.571704439   0.3333333
## 1611    5   1.0055  0.578027967   0.6666667
## 1612    5   1.0055  0.578027967   0.6666667
## 1613    7   3.0055  1.727760373   1.0000000
## 1614    3  -0.9945 -0.571704439   0.3333333
## 1615    5   1.0055  0.578027967   0.6666667
## 1616    2  -1.9945 -1.146570642   0.1666667
## 1617    4   0.0055  0.003161764   0.5000000
## 1618    3  -0.9945 -0.571704439   0.3333333
## 1619    4   0.0055  0.003161764   0.5000000
## 1620    1  -2.9945 -1.721436844   0.0000000
## 1621    7   3.0055  1.727760373   1.0000000
## 1622    6   2.0055  1.152894170   0.8333333
## 1623    2  -1.9945 -1.146570642   0.1666667
## 1624    5   1.0055  0.578027967   0.6666667
## 1625    1  -2.9945 -1.721436844   0.0000000
## 1626    1  -2.9945 -1.721436844   0.0000000
## 1627    3  -0.9945 -0.571704439   0.3333333
## 1628    3  -0.9945 -0.571704439   0.3333333
## 1629    6   2.0055  1.152894170   0.8333333
## 1630    3  -0.9945 -0.571704439   0.3333333
## 1631    5   1.0055  0.578027967   0.6666667
## 1632    1  -2.9945 -1.721436844   0.0000000
## 1633    1  -2.9945 -1.721436844   0.0000000
## 1634    1  -2.9945 -1.721436844   0.0000000
## 1635    3  -0.9945 -0.571704439   0.3333333
## 1636    5   1.0055  0.578027967   0.6666667
## 1637    3  -0.9945 -0.571704439   0.3333333
## 1638    3  -0.9945 -0.571704439   0.3333333
## 1639    1  -2.9945 -1.721436844   0.0000000
## 1640    4   0.0055  0.003161764   0.5000000
## 1641    4   0.0055  0.003161764   0.5000000
## 1642    6   2.0055  1.152894170   0.8333333
## 1643    5   1.0055  0.578027967   0.6666667
## 1644    4   0.0055  0.003161764   0.5000000
## 1645    4   0.0055  0.003161764   0.5000000
## 1646    4   0.0055  0.003161764   0.5000000
## 1647    6   2.0055  1.152894170   0.8333333
## 1648    4   0.0055  0.003161764   0.5000000
## 1649    4   0.0055  0.003161764   0.5000000
## 1650    4   0.0055  0.003161764   0.5000000
## 1651    4   0.0055  0.003161764   0.5000000
## 1652    3  -0.9945 -0.571704439   0.3333333
## 1653    4   0.0055  0.003161764   0.5000000
## 1654    4   0.0055  0.003161764   0.5000000
## 1655    3  -0.9945 -0.571704439   0.3333333
## 1656    6   2.0055  1.152894170   0.8333333
## 1657    5   1.0055  0.578027967   0.6666667
## 1658    2  -1.9945 -1.146570642   0.1666667
## 1659    4   0.0055  0.003161764   0.5000000
```

```
## 1660     4   0.0055  0.003161764    0.5000000
## 1661     2  -1.9945 -1.146570642    0.1666667
## 1662     3  -0.9945 -0.571704439    0.3333333
## 1663     6   2.0055  1.152894170    0.8333333
## 1664     3  -0.9945 -0.571704439    0.3333333
## 1665     6   2.0055  1.152894170    0.8333333
## 1666     2  -1.9945 -1.146570642    0.1666667
## 1667     5   1.0055  0.578027967    0.6666667
## 1668     5   1.0055  0.578027967    0.6666667
## 1669     1  -2.9945 -1.721436844    0.0000000
## 1670     6   2.0055  1.152894170    0.8333333
## 1671     2  -1.9945 -1.146570642    0.1666667
## 1672     3  -0.9945 -0.571704439    0.3333333
## 1673     1  -2.9945 -1.721436844    0.0000000
## 1674     4   0.0055  0.003161764    0.5000000
## 1675     5   1.0055  0.578027967    0.6666667
## 1676     5   1.0055  0.578027967    0.6666667
## 1677     5   1.0055  0.578027967    0.6666667
## 1678     1  -2.9945 -1.721436844    0.0000000
## 1679     3  -0.9945 -0.571704439    0.3333333
## 1680     7   3.0055  1.727760373    1.0000000
## 1681     6   2.0055  1.152894170    0.8333333
## 1682     5   1.0055  0.578027967    0.6666667
## 1683     1  -2.9945 -1.721436844    0.0000000
## 1684     2  -1.9945 -1.146570642    0.1666667
## 1685     4   0.0055  0.003161764    0.5000000
## 1686     5   1.0055  0.578027967    0.6666667
## 1687     4   0.0055  0.003161764    0.5000000
## 1688     3  -0.9945 -0.571704439    0.3333333
## 1689     7   3.0055  1.727760373    1.0000000
## 1690     2  -1.9945 -1.146570642    0.1666667
## 1691     5   1.0055  0.578027967    0.6666667
## 1692     3  -0.9945 -0.571704439    0.3333333
## 1693     7   3.0055  1.727760373    1.0000000
## 1694     4   0.0055  0.003161764    0.5000000
## 1695     3  -0.9945 -0.571704439    0.3333333
## 1696     1  -2.9945 -1.721436844    0.0000000
## 1697     7   3.0055  1.727760373    1.0000000
## 1698     3  -0.9945 -0.571704439    0.3333333
## 1699     7   3.0055  1.727760373    1.0000000
## 1700     7   3.0055  1.727760373    1.0000000
## 1701     6   2.0055  1.152894170    0.8333333
## 1702     4   0.0055  0.003161764    0.5000000
## 1703     1  -2.9945 -1.721436844    0.0000000
## 1704     1  -2.9945 -1.721436844    0.0000000
## 1705     5   1.0055  0.578027967    0.6666667
## 1706     3  -0.9945 -0.571704439    0.3333333
## 1707     4   0.0055  0.003161764    0.5000000
## 1708     3  -0.9945 -0.571704439    0.3333333
## 1709     4   0.0055  0.003161764    0.5000000
## 1710     5   1.0055  0.578027967    0.6666667
## 1711     1  -2.9945 -1.721436844    0.0000000
## 1712     2  -1.9945 -1.146570642    0.1666667
## 1713     4   0.0055  0.003161764    0.5000000
```

```
## 1714    3  -0.9945 -0.571704439    0.3333333
## 1715    5   1.0055  0.578027967    0.6666667
## 1716    4   0.0055  0.003161764    0.5000000
## 1717    2  -1.9945 -1.146570642    0.1666667
## 1718    4   0.0055  0.003161764    0.5000000
## 1719    1  -2.9945 -1.721436844    0.0000000
## 1720    3  -0.9945 -0.571704439    0.3333333
## 1721    4   0.0055  0.003161764    0.5000000
## 1722    2  -1.9945 -1.146570642    0.1666667
## 1723    7   3.0055  1.727760373    1.0000000
## 1724    4   0.0055  0.003161764    0.5000000
## 1725    1  -2.9945 -1.721436844    0.0000000
## 1726    3  -0.9945 -0.571704439    0.3333333
## 1727    7   3.0055  1.727760373    1.0000000
## 1728    5   1.0055  0.578027967    0.6666667
## 1729    3  -0.9945 -0.571704439    0.3333333
## 1730    3  -0.9945 -0.571704439    0.3333333
## 1731    7   3.0055  1.727760373    1.0000000
## 1732    2  -1.9945 -1.146570642    0.1666667
## 1733    3  -0.9945 -0.571704439    0.3333333
## 1734    1  -2.9945 -1.721436844    0.0000000
## 1735    3  -0.9945 -0.571704439    0.3333333
## 1736    2  -1.9945 -1.146570642    0.1666667
## 1737    4   0.0055  0.003161764    0.5000000
## 1738    2  -1.9945 -1.146570642    0.1666667
## 1739    5   1.0055  0.578027967    0.6666667
## 1740    3  -0.9945 -0.571704439    0.3333333
## 1741    6   2.0055  1.152894170    0.8333333
## 1742    2  -1.9945 -1.146570642    0.1666667
## 1743    5   1.0055  0.578027967    0.6666667
## 1744    6   2.0055  1.152894170    0.8333333
## 1745    4   0.0055  0.003161764    0.5000000
## 1746    3  -0.9945 -0.571704439    0.3333333
## 1747    3  -0.9945 -0.571704439    0.3333333
## 1748    7   3.0055  1.727760373    1.0000000
## 1749    1  -2.9945 -1.721436844    0.0000000
## 1750    3  -0.9945 -0.571704439    0.3333333
## 1751    5   1.0055  0.578027967    0.6666667
## 1752    5   1.0055  0.578027967    0.6666667
## 1753    3  -0.9945 -0.571704439    0.3333333
## 1754    2  -1.9945 -1.146570642    0.1666667
## 1755    7   3.0055  1.727760373    1.0000000
## 1756    5   1.0055  0.578027967    0.6666667
## 1757    4   0.0055  0.003161764    0.5000000
## 1758    1  -2.9945 -1.721436844    0.0000000
## 1759    2  -1.9945 -1.146570642    0.1666667
## 1760    3  -0.9945 -0.571704439    0.3333333
## 1761    3  -0.9945 -0.571704439    0.3333333
## 1762    5   1.0055  0.578027967    0.6666667
## 1763    4   0.0055  0.003161764    0.5000000
## 1764    3  -0.9945 -0.571704439    0.3333333
## 1765    4   0.0055  0.003161764    0.5000000
## 1766    1  -2.9945 -1.721436844    0.0000000
## 1767    7   3.0055  1.727760373    1.0000000
```

```
## 1768    7   3.0055   1.727760373    1.0000000
## 1769    3  -0.9945  -0.571704439    0.3333333
## 1770    3  -0.9945  -0.571704439    0.3333333
## 1771    1  -2.9945  -1.721436844    0.0000000
## 1772    4   0.0055   0.003161764    0.5000000
## 1773    5   1.0055   0.578027967    0.6666667
## 1774    4   0.0055   0.003161764    0.5000000
## 1775    4   0.0055   0.003161764    0.5000000
## 1776    3  -0.9945  -0.571704439    0.3333333
## 1777    4   0.0055   0.003161764    0.5000000
## 1778    4   0.0055   0.003161764    0.5000000
## 1779    1  -2.9945  -1.721436844    0.0000000
## 1780    3  -0.9945  -0.571704439    0.3333333
## 1781    7   3.0055   1.727760373    1.0000000
## 1782    4   0.0055   0.003161764    0.5000000
## 1783    4   0.0055   0.003161764    0.5000000
## 1784    7   3.0055   1.727760373    1.0000000
## 1785    3  -0.9945  -0.571704439    0.3333333
## 1786    6   2.0055   1.152894170    0.8333333
## 1787    7   3.0055   1.727760373    1.0000000
## 1788    3  -0.9945  -0.571704439    0.3333333
## 1789    4   0.0055   0.003161764    0.5000000
## 1790    3  -0.9945  -0.571704439    0.3333333
## 1791    5   1.0055   0.578027967    0.6666667
## 1792    4   0.0055   0.003161764    0.5000000
## 1793    4   0.0055   0.003161764    0.5000000
## 1794    3  -0.9945  -0.571704439    0.3333333
## 1795    5   1.0055   0.578027967    0.6666667
## 1796    5   1.0055   0.578027967    0.6666667
## 1797    5   1.0055   0.578027967    0.6666667
## 1798    3  -0.9945  -0.571704439    0.3333333
## 1799    6   2.0055   1.152894170    0.8333333
## 1800    5   1.0055   0.578027967    0.6666667
## 1801    3  -0.9945  -0.571704439    0.3333333
## 1802    5   1.0055   0.578027967    0.6666667
## 1803    2  -1.9945  -1.146570642    0.1666667
## 1804    4   0.0055   0.003161764    0.5000000
## 1805    2  -1.9945  -1.146570642    0.1666667
## 1806    3  -0.9945  -0.571704439    0.3333333
## 1807    3  -0.9945  -0.571704439    0.3333333
## 1808    4   0.0055   0.003161764    0.5000000
## 1809    3  -0.9945  -0.571704439    0.3333333
## 1810    7   3.0055   1.727760373    1.0000000
## 1811    1  -2.9945  -1.721436844    0.0000000
## 1812    3  -0.9945  -0.571704439    0.3333333
## 1813    5   1.0055   0.578027967    0.6666667
## 1814    1  -2.9945  -1.721436844    0.0000000
## 1815    2  -1.9945  -1.146570642    0.1666667
## 1816    3  -0.9945  -0.571704439    0.3333333
## 1817    6   2.0055   1.152894170    0.8333333
## 1818    4   0.0055   0.003161764    0.5000000
## 1819    6   2.0055   1.152894170    0.8333333
## 1820    5   1.0055   0.578027967    0.6666667
## 1821    1  -2.9945  -1.721436844    0.0000000
```

```
## 1822     3  -0.9945 -0.571704439   0.3333333
## 1823     6   2.0055  1.152894170   0.8333333
## 1824     3  -0.9945 -0.571704439   0.3333333
## 1825     2  -1.9945 -1.146570642   0.1666667
## 1826     4   0.0055  0.003161764   0.5000000
## 1827     5   1.0055  0.578027967   0.6666667
## 1828     3  -0.9945 -0.571704439   0.3333333
## 1829     4   0.0055  0.003161764   0.5000000
## 1830     3  -0.9945 -0.571704439   0.3333333
## 1831     4   0.0055  0.003161764   0.5000000
## 1832     3  -0.9945 -0.571704439   0.3333333
## 1833     5   1.0055  0.578027967   0.6666667
## 1834     3  -0.9945 -0.571704439   0.3333333
## 1835     6   2.0055  1.152894170   0.8333333
## 1836     6   2.0055  1.152894170   0.8333333
## 1837     3  -0.9945 -0.571704439   0.3333333
## 1838     4   0.0055  0.003161764   0.5000000
## 1839     6   2.0055  1.152894170   0.8333333
## 1840     3  -0.9945 -0.571704439   0.3333333
## 1841     3  -0.9945 -0.571704439   0.3333333
## 1842     1  -2.9945 -1.721436844   0.0000000
## 1843     4   0.0055  0.003161764   0.5000000
## 1844     4   0.0055  0.003161764   0.5000000
## 1845     1  -2.9945 -1.721436844   0.0000000
## 1846     2  -1.9945 -1.146570642   0.1666667
## 1847     3  -0.9945 -0.571704439   0.3333333
## 1848     2  -1.9945 -1.146570642   0.1666667
## 1849     3  -0.9945 -0.571704439   0.3333333
## 1850     7   3.0055  1.727760373   1.0000000
## 1851     2  -1.9945 -1.146570642   0.1666667
## 1852     7   3.0055  1.727760373   1.0000000
## 1853     3  -0.9945 -0.571704439   0.3333333
## 1854     5   1.0055  0.578027967   0.6666667
## 1855     1  -2.9945 -1.721436844   0.0000000
## 1856     2  -1.9945 -1.146570642   0.1666667
## 1857     5   1.0055  0.578027967   0.6666667
## 1858     6   2.0055  1.152894170   0.8333333
## 1859     4   0.0055  0.003161764   0.5000000
## 1860     4   0.0055  0.003161764   0.5000000
## 1861     6   2.0055  1.152894170   0.8333333
## 1862     3  -0.9945 -0.571704439   0.3333333
## 1863     2  -1.9945 -1.146570642   0.1666667
## 1864     3  -0.9945 -0.571704439   0.3333333
## 1865     2  -1.9945 -1.146570642   0.1666667
## 1866     1  -2.9945 -1.721436844   0.0000000
## 1867     4   0.0055  0.003161764   0.5000000
## 1868     4   0.0055  0.003161764   0.5000000
## 1869     4   0.0055  0.003161764   0.5000000
## 1870     3  -0.9945 -0.571704439   0.3333333
## 1871     4   0.0055  0.003161764   0.5000000
## 1872     1  -2.9945 -1.721436844   0.0000000
## 1873     4   0.0055  0.003161764   0.5000000
## 1874     3  -0.9945 -0.571704439   0.3333333
## 1875     2  -1.9945 -1.146570642   0.1666667
```

```
## 1876    3  -0.9945 -0.571704439   0.3333333
## 1877    4   0.0055  0.003161764   0.5000000
## 1878    1  -2.9945 -1.721436844   0.0000000
## 1879    3  -0.9945 -0.571704439   0.3333333
## 1880    1  -2.9945 -1.721436844   0.0000000
## 1881    3  -0.9945 -0.571704439   0.3333333
## 1882    7   3.0055  1.727760373   1.0000000
## 1883    5   1.0055  0.578027967   0.6666667
## 1884    2  -1.9945 -1.146570642   0.1666667
## 1885    1  -2.9945 -1.721436844   0.0000000
## 1886    6   2.0055  1.152894170   0.8333333
## 1887    3  -0.9945 -0.571704439   0.3333333
## 1888    5   1.0055  0.578027967   0.6666667
## 1889    5   1.0055  0.578027967   0.6666667
## 1890    5   1.0055  0.578027967   0.6666667
## 1891    4   0.0055  0.003161764   0.5000000
## 1892    7   3.0055  1.727760373   1.0000000
## 1893    2  -1.9945 -1.146570642   0.1666667
## 1894    1  -2.9945 -1.721436844   0.0000000
## 1895    4   0.0055  0.003161764   0.5000000
## 1896    2  -1.9945 -1.146570642   0.1666667
## 1897    5   1.0055  0.578027967   0.6666667
## 1898    3  -0.9945 -0.571704439   0.3333333
## 1899    6   2.0055  1.152894170   0.8333333
## 1900    2  -1.9945 -1.146570642   0.1666667
## 1901    3  -0.9945 -0.571704439   0.3333333
## 1902    1  -2.9945 -1.721436844   0.0000000
## 1903    5   1.0055  0.578027967   0.6666667
## 1904    2  -1.9945 -1.146570642   0.1666667
## 1905    4   0.0055  0.003161764   0.5000000
## 1906    2  -1.9945 -1.146570642   0.1666667
## 1907    3  -0.9945 -0.571704439   0.3333333
## 1908    4   0.0055  0.003161764   0.5000000
## 1909    5   1.0055  0.578027967   0.6666667
## 1910    2  -1.9945 -1.146570642   0.1666667
## 1911    4   0.0055  0.003161764   0.5000000
## 1912    3  -0.9945 -0.571704439   0.3333333
## 1913    7   3.0055  1.727760373   1.0000000
## 1914    6   2.0055  1.152894170   0.8333333
## 1915    1  -2.9945 -1.721436844   0.0000000
## 1916    4   0.0055  0.003161764   0.5000000
## 1917    4   0.0055  0.003161764   0.5000000
## 1918    7   3.0055  1.727760373   1.0000000
## 1919    4   0.0055  0.003161764   0.5000000
## 1920    4   0.0055  0.003161764   0.5000000
## 1921    5   1.0055  0.578027967   0.6666667
## 1922    3  -0.9945 -0.571704439   0.3333333
## 1923    2  -1.9945 -1.146570642   0.1666667
## 1924    4   0.0055  0.003161764   0.5000000
## 1925    6   2.0055  1.152894170   0.8333333
## 1926    4   0.0055  0.003161764   0.5000000
## 1927    3  -0.9945 -0.571704439   0.3333333
## 1928    4   0.0055  0.003161764   0.5000000
## 1929    3  -0.9945 -0.571704439   0.3333333
```

```
## 1930    6   2.0055   1.152894170    0.8333333
## 1931    4   0.0055   0.003161764    0.5000000
## 1932    5   1.0055   0.578027967    0.6666667
## 1933    2  -1.9945  -1.146570642    0.1666667
## 1934    6   2.0055   1.152894170    0.8333333
## 1935    3  -0.9945  -0.571704439    0.3333333
## 1936    5   1.0055   0.578027967    0.6666667
## 1937    4   0.0055   0.003161764    0.5000000
## 1938    7   3.0055   1.727760373    1.0000000
## 1939    6   2.0055   1.152894170    0.8333333
## 1940    5   1.0055   0.578027967    0.6666667
## 1941    5   1.0055   0.578027967    0.6666667
## 1942    6   2.0055   1.152894170    0.8333333
## 1943    7   3.0055   1.727760373    1.0000000
## 1944    1  -2.9945  -1.721436844    0.0000000
## 1945    5   1.0055   0.578027967    0.6666667
## 1946    3  -0.9945  -0.571704439    0.3333333
## 1947    2  -1.9945  -1.146570642    0.1666667
## 1948    6   2.0055   1.152894170    0.8333333
## 1949    5   1.0055   0.578027967    0.6666667
## 1950    2  -1.9945  -1.146570642    0.1666667
## 1951    6   2.0055   1.152894170    0.8333333
## 1952    3  -0.9945  -0.571704439    0.3333333
## 1953    4   0.0055   0.003161764    0.5000000
## 1954    2  -1.9945  -1.146570642    0.1666667
## 1955    5   1.0055   0.578027967    0.6666667
## 1956    2  -1.9945  -1.146570642    0.1666667
## 1957    1  -2.9945  -1.721436844    0.0000000
## 1958    2  -1.9945  -1.146570642    0.1666667
## 1959    1  -2.9945  -1.721436844    0.0000000
## 1960    7   3.0055   1.727760373    1.0000000
## 1961    7   3.0055   1.727760373    1.0000000
## 1962    4   0.0055   0.003161764    0.5000000
## 1963    7   3.0055   1.727760373    1.0000000
## 1964    7   3.0055   1.727760373    1.0000000
## 1965    4   0.0055   0.003161764    0.5000000
## 1966    6   2.0055   1.152894170    0.8333333
## 1967    3  -0.9945  -0.571704439    0.3333333
## 1968    2  -1.9945  -1.146570642    0.1666667
## 1969    7   3.0055   1.727760373    1.0000000
## 1970    4   0.0055   0.003161764    0.5000000
## 1971    1  -2.9945  -1.721436844    0.0000000
## 1972    3  -0.9945  -0.571704439    0.3333333
## 1973    7   3.0055   1.727760373    1.0000000
## 1974    1  -2.9945  -1.721436844    0.0000000
## 1975    4   0.0055   0.003161764    0.5000000
## 1976    1  -2.9945  -1.721436844    0.0000000
## 1977    4   0.0055   0.003161764    0.5000000
## 1978    5   1.0055   0.578027967    0.6666667
## 1979    4   0.0055   0.003161764    0.5000000
## 1980    4   0.0055   0.003161764    0.5000000
## 1981    5   1.0055   0.578027967    0.6666667
## 1982    5   1.0055   0.578027967    0.6666667
## 1983    1  -2.9945  -1.721436844    0.0000000
```

```
## 1984    3  -0.9945 -0.571704439    0.3333333
## 1985    3  -0.9945 -0.571704439    0.3333333
## 1986    7   3.0055  1.727760373    1.0000000
## 1987    3  -0.9945 -0.571704439    0.3333333
## 1988    2  -1.9945 -1.146570642    0.1666667
## 1989    5   1.0055  0.578027967    0.6666667
## 1990    5   1.0055  0.578027967    0.6666667
## 1991    1  -2.9945 -1.721436844    0.0000000
## 1992    4   0.0055  0.003161764    0.5000000
## 1993    3  -0.9945 -0.571704439    0.3333333
## 1994    6   2.0055  1.152894170    0.8333333
## 1995    4   0.0055  0.003161764    0.5000000
## 1996    1  -2.9945 -1.721436844    0.0000000
## 1997    2  -1.9945 -1.146570642    0.1666667
## 1998    4   0.0055  0.003161764    0.5000000
## 1999    3  -0.9945 -0.571704439    0.3333333
## 2000    5   1.0055  0.578027967    0.6666667
```

Skewness

A variable with an asymmetric distribution about its mean is skewed. Depending on which side of the mean data is concentrated on, the distribution is described as right skewed (right tail is longer) or left skewed (left tail is longer).

In the `fastfood` data, histograms indicate `chipotle` is close to being symmetric while `duration` is right skewed. This is also borne out by the skewness values - chipotle is close to 0 while duration is much larger than 0.

```
library(caret); library(tidyr)
df %>%
  select(chipotle, duration)%>%
  pivot_longer(1:2, names_to = 'var',values_to = 'values')%>%
  ggplot(aes(x=values))+
  geom_histogram()+
  facet_wrap(~var, scales = 'free')
```
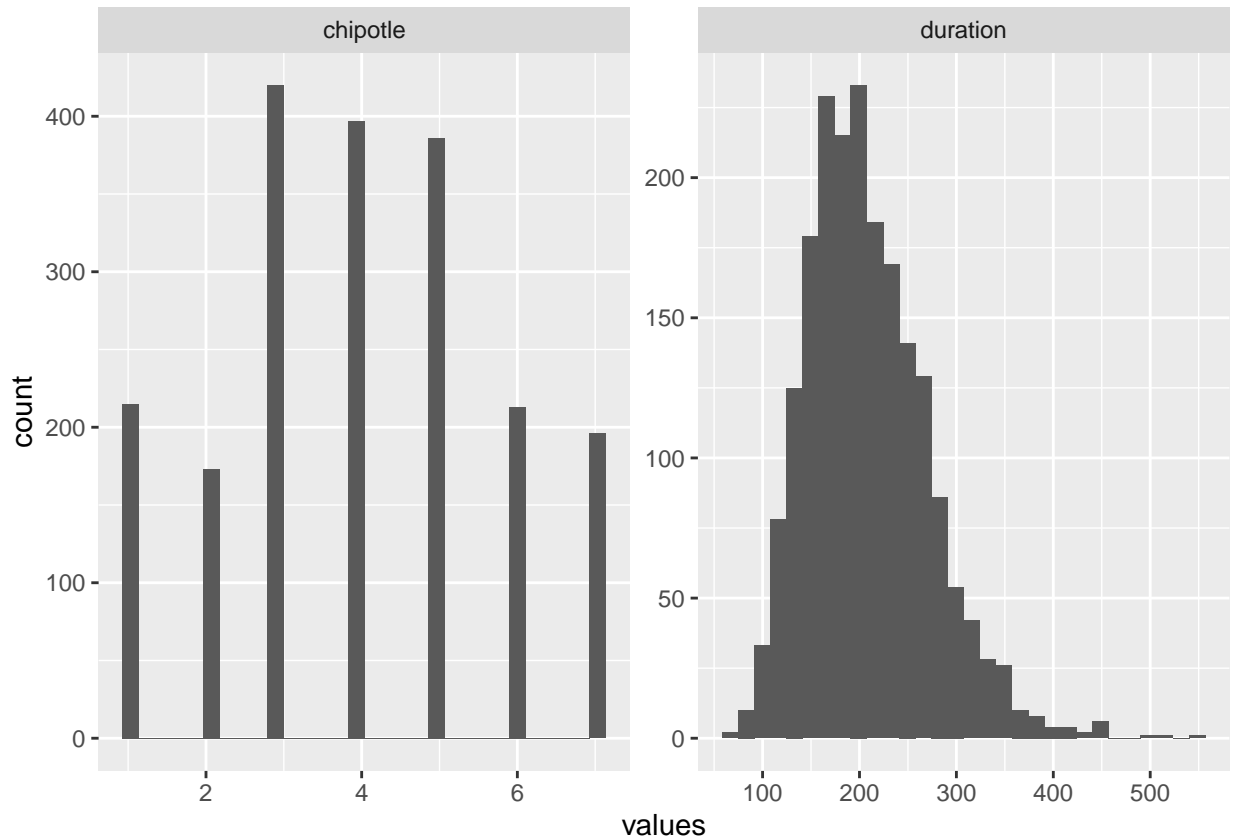
```
library(e1071)
df %>%
  select(chipotle, duration)%>%
  summarize(skewness_chipotle = skewness(chipotle), skewness_duration = skewness(duration))
```

```
##   skewness_chipotle skewness_duration
## 1       -0.01208177         0.8395247
```

Skewness can be mitigated by applying a suitable functional transformation such as log, square root, or inverse. However, it is hard to know apriori which type of transformation to apply. Another alternative is to empirically identify an appropriate transformation. Box and Cox transformations are a family of transformation that are indexed by a parameter denoted by lambda. Values of lambda reflect many common transformations such as square (lambda = 2), square root (lambda = 0.5), and inverse (lambda = -1).

Here we illustrate the use of the Box Cox transformation. Chipotle had a lambda estimate close to 1, so no transformation was applied. On the other hand, duration had a lambda much different from 1, so a corrective Box-Cox transformation was applied.

```
library(e1071)
proc = preProcess(df[,c('chipotle','duration')],method = 'BoxCox')
proc$bc # lambda vale to be used in BoxCox transformation
```

```
## $chipotle
## Box-Cox Transformation
##
## 2000 data points used to estimate Lambda
##
## Input data summary:
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
```

```
##    1.000    3.000    4.000    3.994    5.000    7.000
##
## Largest/Smallest: 7
## Sample Skewness: -0.0121
##
## Estimated Lambda: 0.9
## With fudge factor, no transformation is applied
##
##
## $duration
## Box-Cox Transformation
##
## 2000 data points used to estimate Lambda
##
## Input data summary:
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   71.13  163.24  200.07  208.11  245.99  553.12
##
## Largest/Smallest: 7.78
## Sample Skewness: 0.84
##
## Estimated Lambda: 0.1
## With fudge factor, Lambda = 0 will be used for transformations
```

Here are the histograms after a Box-Cox Transformation.

```
predict(proc, newdata = df)%>%
  select(chipotle, duration)%>%
  pivot_longer(1:2, names_to = 'var',values_to = 'values')%>%
  ggplot(aes(x=values))+
  geom_histogram()+
  facet_wrap(~var, scales = 'free')
```
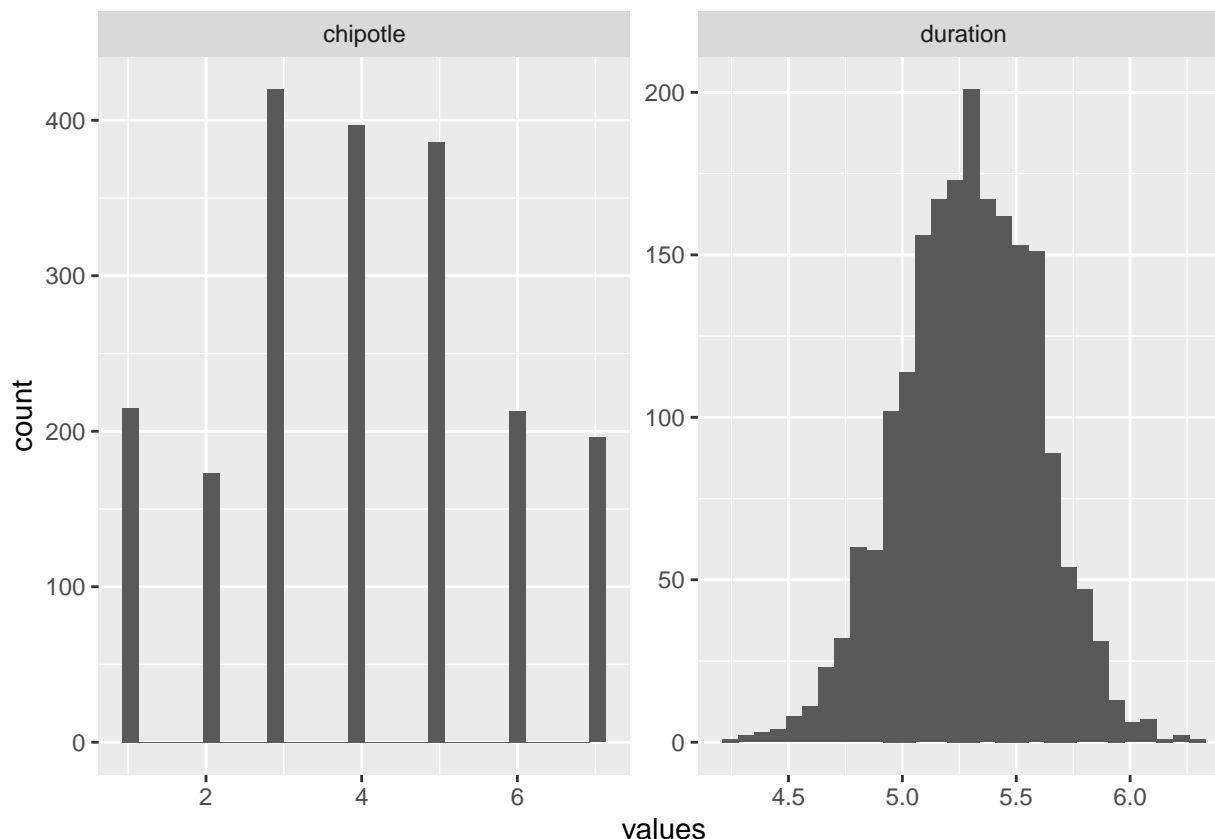
Low Variance As discussed above for categorical variables, numeric variables that have zero variance have no predictive power, therefore should be eliminated. But, even variables that have variance close to zero should be candidates for exclusion as they have limited predictive power. In the `fastfood` data, the three health consciousness variables and the three fast food ratings variables are not recommended for removal at this stage.

```
nearZeroVar(df[,c('health1', 'health2', 'health3', 'mcdonalds', 'chipotle', 'shake_shack' )],saveMetric
```

```
##              freqRatio percentUnique zeroVar   nzv
## health1       1.013158          0.35   FALSE FALSE
## health2       2.990268          0.35   FALSE FALSE
## health3       1.575431          0.35   FALSE FALSE
## mcdonalds     1.023018          0.35   FALSE FALSE
## chipotle      1.057935          0.35   FALSE FALSE
## shake_shack   1.069825          0.35   FALSE FALSE
```

Combine Variables

In certain situations it makes sense to combine variables to form an index. One such scenario is when survey respondents are asked a multiple questions to measure a single construct. In the fastfood data, respondents were asked three questions to gauge their health consciousness.

Variables may be combined in an unweighted manner by simply averaging their scores. When doing this, care must be taken to ensure the variables are measured on the same scale. Survey researchers average scores so long as the items are rated on the same scale, e.g., 1-7. But, to be sure, one can examine dispersion for the variables to be combined.

Here, we can see the standard deviations of the three health variables are not the same.

```
apply(X = df[,c('health1', 'health2', 'health3')],
      MARGIN = 2,
      FUN = sd)
```

```
##  health1  health2  health3
## 2.036357 1.075748 1.631677
```

Using `dplyr` verbs

```
df %>%
  select(health1:health3)%>%
  summarise_all(.funs = sd)
```

```
##    health1  health2  health3
## 1 2.036357 1.075748 1.631677
```

So, we will standardize the variables before averaging into a health consciousness index.

```
df %>%
  select(health1:health3)%>%
  mutate(health1_std = scale(health1), health2_std = scale(health2), health3_std = scale(health3))%>%
  rowwise()%>%
  mutate(health_index = mean(health1_std, health2_std, health3_std, na.rm=T))%>%
  select(health1, health2, health3, health1_std, health2_std, health3_std, health_index)
```

```
## # A tibble: 2,000 x 7
## # Rowwise:
##    health1 health2 health3 health1_std[,1] health2_std[,1] health3_std[,1]
##      <int>   <int>   <int>           <dbl>           <dbl>           <dbl>
## 1        1       1       1           -1.48          -0.640          -0.938
## 2        6       3       5           0.973           1.22            1.51
## 3        4       3       4        -0.00884           1.22            0.900
## 4        1       1       1           -1.48          -0.640          -0.938
## 5        1       1       1           -1.48          -0.640          -0.938
## 6        1       1       1           -1.48          -0.640          -0.938
## 7        1       1       1           -1.48          -0.640          -0.938
## 8        3       1       2          -0.500          -0.640          -0.325
## 9        3       2       3          -0.500           0.290           0.287
## 10       3       3       3          -0.500           1.22            0.287
## # ... with 1,990 more rows, and 1 more variable: health_index <dbl>
```

If the analyst wants to incorporate the importance of each variable and possesses information about it, variables may be combine in a weighted manner by assigning separate weights to each variable. Finally, certain analytical techniques will automatically determine the weights for combining variables (e.g., principle components analysis).

Binning

A numeric variable may be grouped into a set of two more discrete bins. This process is known as binning, or categorization or discretization. As an example, change in stock prices is frequently binned into "Up" or "Down".

In the data, `duration` refers to the time taken to complete the survey. We can bin this variable into preset buckets (e.g., 0, 120, 240, 6000), or use quantiles (e.g., three quantiles, also known as tertiles). Here is an illustration of each of these methods. You will note that we are using `cut` for specifying breaks or buckets and `cut2` from library(Hmisc) for specifying quantiles.

```
library(Hmisc)
```

```
## Loading required package: survival
```

```
##
## Attaching package: 'survival'

## The following object is masked from 'package:caret':
##
##      cluster

## Loading required package: Formula

##
## Attaching package: 'Hmisc'

## The following object is masked from 'package:e1071':
##
##      impute

## The following objects are masked from 'package:dplyr':
##
##      src, summarize

## The following objects are masked from 'package:base':
##
##      format.pval, units
```

```r
df %>%
  select(duration)%>%
  mutate(preset_bins = cut(df$duration,
                           breaks = c(0,120,240,6000)),
         preset_bins_labels = cut(df$duration,
                           breaks = c(0,120,240,6000),
                           labels =c('Short','Typical','Long')),
         quantile_bins = factor(cut2(duration,
                                     g=3)),
         quantile_bins_labels = factor(cut2(duration,
                                     g=3),
                           labels = c('Short', 'Typical', 'Long')))
```

```
##       duration preset_bins preset_bins_labels quantile_bins
## 1    119.33830      (0,120]              Short   [ 71.1,176)
## 2    221.97059    (120,240]            Typical   [175.9,229)
## 3    260.71333 (240,6e+03]               Long   [229.4,553]
## 4    146.26761    (120,240]            Typical   [ 71.1,176)
## 5    235.98755    (120,240]            Typical   [229.4,553]
## 6    199.90975    (120,240]            Typical   [175.9,229)
## 7    207.27643    (120,240]            Typical   [175.9,229)
## 8    195.32862    (120,240]            Typical   [175.9,229)
## 9    160.70376    (120,240]            Typical   [ 71.1,176)
## 10   123.82832    (120,240]            Typical   [ 71.1,176)
## 11   189.83493    (120,240]            Typical   [175.9,229)
## 12   140.21570    (120,240]            Typical   [ 71.1,176)
## 13   151.14015    (120,240]            Typical   [ 71.1,176)
## 14   154.55871    (120,240]            Typical   [ 71.1,176)
## 15   101.25932      (0,120]              Short   [ 71.1,176)
## 16   183.93776    (120,240]            Typical   [175.9,229)
## 17   218.92525    (120,240]            Typical   [175.9,229)
## 18   192.30644    (120,240]            Typical   [175.9,229)
## 19   149.87166    (120,240]            Typical   [ 71.1,176)
## 20   353.25094 (240,6e+03]               Long   [229.4,553]
```

```
## 21   173.26167   (120,240]      Typical   [ 71.1,176)
## 22   205.05950   (120,240]      Typical   [175.9,229)
## 23   165.68147   (120,240]      Typical   [ 71.1,176)
## 24   195.39372   (120,240]      Typical   [175.9,229)
## 25   141.13594   (120,240]      Typical   [ 71.1,176)
## 26   216.85355   (120,240]      Typical   [175.9,229)
## 27   228.55742   (120,240]      Typical   [175.9,229)
## 28   214.84249   (120,240]      Typical   [175.9,229)
## 29   106.21497     (0,120]       Short   [ 71.1,176)
## 30   176.03659   (120,240]      Typical   [175.9,229)
## 31   114.26140     (0,120]       Short   [ 71.1,176)
## 32   149.63817   (120,240]      Typical   [ 71.1,176)
## 33   160.37323   (120,240]      Typical   [ 71.1,176)
## 34   187.68682   (120,240]      Typical   [175.9,229)
## 35   242.90986 (240,6e+03]        Long   [229.4,553]
## 36   176.56905   (120,240]      Typical   [175.9,229)
## 37   139.97883   (120,240]      Typical   [ 71.1,176)
## 38   264.91111 (240,6e+03]        Long   [229.4,553]
## 39   305.88616 (240,6e+03]        Long   [229.4,553]
## 40   155.21178   (120,240]      Typical   [ 71.1,176)
## 41   180.57570   (120,240]      Typical   [175.9,229)
## 42   220.51037   (120,240]      Typical   [175.9,229)
## 43   248.21245 (240,6e+03]        Long   [229.4,553]
## 44   223.08123   (120,240]      Typical   [175.9,229)
## 45   273.70155 (240,6e+03]        Long   [229.4,553]
## 46   227.06930   (120,240]      Typical   [175.9,229)
## 47   310.63630 (240,6e+03]        Long   [229.4,553]
## 48   229.37573   (120,240]      Typical   [229.4,553]
## 49   202.77114   (120,240]      Typical   [175.9,229)
## 50   161.23193   (120,240]      Typical   [ 71.1,176)
## 51   204.32220   (120,240]      Typical   [175.9,229)
## 52   242.02843 (240,6e+03]        Long   [229.4,553]
## 53   242.74777 (240,6e+03]        Long   [229.4,553]
## 54   158.98299   (120,240]      Typical   [ 71.1,176)
## 55   234.28598   (120,240]      Typical   [229.4,553]
## 56   126.61570   (120,240]      Typical   [ 71.1,176)
## 57   153.86236   (120,240]      Typical   [ 71.1,176)
## 58   308.93325 (240,6e+03]        Long   [229.4,553]
## 59   260.26352 (240,6e+03]        Long   [229.4,553]
## 60   170.63679   (120,240]      Typical   [ 71.1,176)
## 61   416.02280 (240,6e+03]        Long   [229.4,553]
## 62   280.61316 (240,6e+03]        Long   [229.4,553]
## 63   203.75180   (120,240]      Typical   [175.9,229)
## 64   230.59742   (120,240]      Typical   [229.4,553]
## 65   329.69892 (240,6e+03]        Long   [229.4,553]
## 66   180.07179   (120,240]      Typical   [175.9,229)
## 67   214.77003   (120,240]      Typical   [175.9,229)
## 68   193.95932   (120,240]      Typical   [175.9,229)
## 69   249.96379 (240,6e+03]        Long   [229.4,553]
## 70   139.32788   (120,240]      Typical   [ 71.1,176)
## 71   129.55192   (120,240]      Typical   [ 71.1,176)
## 72   267.52518 (240,6e+03]        Long   [229.4,553]
## 73   272.23093 (240,6e+03]        Long   [229.4,553]
## 74    83.34949     (0,120]       Short   [ 71.1,176)
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## 75   184.99048  (120,240]       Typical  [175.9,229)
## 76   277.93634 (240,6e+03]          Long  [229.4,553]
## 77   152.76168  (120,240]       Typical  [ 71.1,176)
## 78   266.96931 (240,6e+03]          Long  [229.4,553]
## 79   159.18150  (120,240]       Typical  [ 71.1,176)
## 80   276.53759 (240,6e+03]          Long  [229.4,553]
## 81   180.02600  (120,240]       Typical  [175.9,229)
## 82   191.06795  (120,240]       Typical  [175.9,229)
## 83   205.15654  (120,240]       Typical  [175.9,229)
## 84   354.59925 (240,6e+03]          Long  [229.4,553]
## 85   260.76236 (240,6e+03]          Long  [229.4,553]
## 86   138.57409  (120,240]       Typical  [ 71.1,176)
## 87   229.44598  (120,240]       Typical  [229.4,553]
## 88   343.45009 (240,6e+03]          Long  [229.4,553]
## 89   202.04896  (120,240]       Typical  [175.9,229)
## 90   219.37646  (120,240]       Typical  [175.9,229)
## 91   360.07311 (240,6e+03]          Long  [229.4,553]
## 92   184.09703  (120,240]       Typical  [175.9,229)
## 93   153.13464  (120,240]       Typical  [ 71.1,176)
## 94   172.80162  (120,240]       Typical  [ 71.1,176)
## 95   179.87798  (120,240]       Typical  [175.9,229)
## 96   193.78892  (120,240]       Typical  [175.9,229)
## 97   181.56197  (120,240]       Typical  [175.9,229)
## 98   190.27125  (120,240]       Typical  [175.9,229)
## 99   311.89608 (240,6e+03]          Long  [229.4,553]
## 100  293.31874 (240,6e+03]          Long  [229.4,553]
## 101  315.30823 (240,6e+03]          Long  [229.4,553]
## 102  307.44651 (240,6e+03]          Long  [229.4,553]
## 103  264.30045 (240,6e+03]          Long  [229.4,553]
## 104  198.35497  (120,240]       Typical  [175.9,229)
## 105  274.80208 (240,6e+03]          Long  [229.4,553]
## 106  189.03041  (120,240]       Typical  [175.9,229)
## 107  161.73852  (120,240]       Typical  [ 71.1,176)
## 108   96.93542    (0,120]         Short  [ 71.1,176)
## 109  312.16080 (240,6e+03]          Long  [229.4,553]
## 110  210.75139  (120,240]       Typical  [175.9,229)
## 111  229.00059  (120,240]       Typical  [175.9,229)
## 112  259.52219 (240,6e+03]          Long  [229.4,553]
## 113  134.74940  (120,240]       Typical  [ 71.1,176)
## 114  174.58554  (120,240]       Typical  [ 71.1,176)
## 115  222.50354  (120,240]       Typical  [175.9,229)
## 116  218.09291  (120,240]       Typical  [175.9,229)
## 117  272.82955 (240,6e+03]          Long  [229.4,553]
## 118  256.38266 (240,6e+03]          Long  [229.4,553]
## 119  183.52680  (120,240]       Typical  [175.9,229)
## 120  127.83668  (120,240]       Typical  [ 71.1,176)
## 121  199.33198  (120,240]       Typical  [175.9,229)
## 122  187.43313  (120,240]       Typical  [175.9,229)
## 123  264.20445 (240,6e+03]          Long  [229.4,553]
## 124  140.33136  (120,240]       Typical  [ 71.1,176)
## 125  132.93854  (120,240]       Typical  [ 71.1,176)
## 126  164.54945  (120,240]       Typical  [ 71.1,176)
## 127  252.29571 (240,6e+03]          Long  [229.4,553]
## 128  157.92347  (120,240]       Typical  [ 71.1,176)
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## 129 143.97251   (120,240]       Typical  [ 71.1,176)
## 130 210.84329   (120,240]       Typical  [175.9,229)
## 131 220.54630   (120,240]       Typical  [175.9,229)
## 132 351.04654 (240,6e+03]          Long  [229.4,553]
## 133 322.90839 (240,6e+03]          Long  [229.4,553]
## 134 159.83222   (120,240]       Typical  [ 71.1,176)
## 135 151.93825   (120,240]       Typical  [ 71.1,176)
## 136 171.79825   (120,240]       Typical  [ 71.1,176)
## 137 273.93347 (240,6e+03]          Long  [229.4,553]
## 138 145.24005   (120,240]       Typical  [ 71.1,176)
## 139 261.32536 (240,6e+03]          Long  [229.4,553]
## 140 260.22320 (240,6e+03]          Long  [229.4,553]
## 141 134.19737   (120,240]       Typical  [ 71.1,176)
## 142 103.53925     (0,120]         Short  [ 71.1,176)
## 143 114.01915     (0,120]         Short  [ 71.1,176)
## 144 112.97759     (0,120]         Short  [ 71.1,176)
## 145 289.06373 (240,6e+03]          Long  [229.4,553]
## 146 343.51770 (240,6e+03]          Long  [229.4,553]
## 147 116.83811     (0,120]         Short  [ 71.1,176)
## 148 150.71572   (120,240]       Typical  [ 71.1,176)
## 149 266.96524 (240,6e+03]          Long  [229.4,553]
## 150 171.67114   (120,240]       Typical  [ 71.1,176)
## 151 145.28403   (120,240]       Typical  [ 71.1,176)
## 152 205.61497   (120,240]       Typical  [175.9,229)
## 153 187.24567   (120,240]       Typical  [175.9,229)
## 154 163.28602   (120,240]       Typical  [ 71.1,176)
## 155 274.87917 (240,6e+03]          Long  [229.4,553]
## 156 200.08229   (120,240]       Typical  [175.9,229)
## 157 177.75888   (120,240]       Typical  [175.9,229)
## 158 174.83843   (120,240]       Typical  [ 71.1,176)
## 159 188.33542   (120,240]       Typical  [175.9,229)
## 160 274.04402 (240,6e+03]          Long  [229.4,553]
## 161 183.92016   (120,240]       Typical  [175.9,229)
## 162 271.00653 (240,6e+03]          Long  [229.4,553]
## 163 170.76090   (120,240]       Typical  [ 71.1,176)
## 164 200.02264   (120,240]       Typical  [175.9,229)
## 165 155.47578   (120,240]       Typical  [ 71.1,176)
## 166 171.49205   (120,240]       Typical  [ 71.1,176)
## 167 190.28123   (120,240]       Typical  [175.9,229)
## 168 142.32517   (120,240]       Typical  [ 71.1,176)
## 169 205.79653   (120,240]       Typical  [175.9,229)
## 170 210.22845   (120,240]       Typical  [175.9,229)
## 171 262.70283 (240,6e+03]          Long  [229.4,553]
## 172 207.32656   (120,240]       Typical  [175.9,229)
## 173 255.30567 (240,6e+03]          Long  [229.4,553]
## 174 224.20129   (120,240]       Typical  [175.9,229)
## 175 143.01499   (120,240]       Typical  [ 71.1,176)
## 176 235.07851   (120,240]       Typical  [229.4,553]
## 177 214.23889   (120,240]       Typical  [175.9,229)
## 178 221.36949   (120,240]       Typical  [175.9,229)
## 179 178.89056   (120,240]       Typical  [175.9,229)
## 180 197.12074   (120,240]       Typical  [175.9,229)
## 181 211.71561   (120,240]       Typical  [175.9,229)
## 182 351.25236 (240,6e+03]          Long  [229.4,553]
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## 183 209.61155   (120,240]      Typical  [175.9,229)
## 184 215.25125   (120,240]      Typical  [175.9,229)
## 185 170.42592   (120,240]      Typical  [ 71.1,176)
## 186 168.67335   (120,240]      Typical  [ 71.1,176)
## 187 121.83248   (120,240]      Typical  [ 71.1,176)
## 188 338.98616 (240,6e+03]         Long  [229.4,553]
## 189 186.56702   (120,240]      Typical  [175.9,229)
## 190 157.35604   (120,240]      Typical  [ 71.1,176)
## 191 199.98402   (120,240]      Typical  [175.9,229)
## 192 217.81941   (120,240]      Typical  [175.9,229)
## 193 184.14019   (120,240]      Typical  [175.9,229)
## 194 166.19642   (120,240]      Typical  [ 71.1,176)
## 195 159.86759   (120,240]      Typical  [ 71.1,176)
## 196 187.94205   (120,240]      Typical  [175.9,229)
## 197 220.74979   (120,240]      Typical  [175.9,229)
## 198 217.26503   (120,240]      Typical  [175.9,229)
## 199 185.44671   (120,240]      Typical  [175.9,229)
## 200 179.51485   (120,240]      Typical  [175.9,229)
## 201 160.98253   (120,240]      Typical  [ 71.1,176)
## 202 141.74345   (120,240]      Typical  [ 71.1,176)
## 203 155.71133   (120,240]      Typical  [ 71.1,176)
## 204 213.06027   (120,240]      Typical  [175.9,229)
## 205 149.44685   (120,240]      Typical  [ 71.1,176)
## 206 255.19059 (240,6e+03]         Long  [229.4,553]
## 207 155.38733   (120,240]      Typical  [ 71.1,176)
## 208 153.15192   (120,240]      Typical  [ 71.1,176)
## 209 182.71621   (120,240]      Typical  [175.9,229)
## 210 127.06452   (120,240]      Typical  [ 71.1,176)
## 211 207.40958   (120,240]      Typical  [175.9,229)
## 212 165.34446   (120,240]      Typical  [ 71.1,176)
## 213 246.00796 (240,6e+03]         Long  [229.4,553]
## 214 243.63304 (240,6e+03]         Long  [229.4,553]
## 215 295.12434 (240,6e+03]         Long  [229.4,553]
## 216 179.42327   (120,240]      Typical  [175.9,229)
## 217 187.65634   (120,240]      Typical  [175.9,229)
## 218 151.24161   (120,240]      Typical  [ 71.1,176)
## 219 319.78854 (240,6e+03]         Long  [229.4,553]
## 220 265.39282 (240,6e+03]         Long  [229.4,553]
## 221  78.75538     (0,120]        Short  [ 71.1,176)
## 222 280.21535 (240,6e+03]         Long  [229.4,553]
## 223 121.43535   (120,240]      Typical  [ 71.1,176)
## 224 192.22167   (120,240]      Typical  [175.9,229)
## 225 263.54757 (240,6e+03]         Long  [229.4,553]
## 226 233.40603   (120,240]      Typical  [229.4,553]
## 227 206.44405   (120,240]      Typical  [175.9,229)
## 228 308.78698 (240,6e+03]         Long  [229.4,553]
## 229 161.24130   (120,240]      Typical  [ 71.1,176)
## 230 119.16272     (0,120]        Short  [ 71.1,176)
## 231 173.70164   (120,240]      Typical  [ 71.1,176)
## 232 207.04899   (120,240]      Typical  [175.9,229)
## 233 206.49483   (120,240]      Typical  [175.9,229)
## 234 156.39696   (120,240]      Typical  [ 71.1,176)
## 235 310.69872 (240,6e+03]         Long  [229.4,553]
## 236 142.88673   (120,240]      Typical  [ 71.1,176)
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## 237 146.86443  (120,240]   Typical  [ 71.1,176)
## 238 210.77872  (120,240]   Typical  [175.9,229)
## 239 183.49712  (120,240]   Typical  [175.9,229)
## 240 166.65642  (120,240]   Typical  [ 71.1,176)
## 241 201.89953  (120,240]   Typical  [175.9,229)
## 242 175.92436  (120,240]   Typical  [175.9,229)
## 243 238.95314  (120,240]   Typical  [229.4,553]
## 244 173.91290  (120,240]   Typical  [ 71.1,176)
## 245 244.08678 (240,6e+03]      Long  [229.4,553]
## 246 378.69466 (240,6e+03]      Long  [229.4,553]
## 247 167.57106  (120,240]   Typical  [ 71.1,176)
## 248 377.90800 (240,6e+03]      Long  [229.4,553]
## 249 199.29390  (120,240]   Typical  [175.9,229)
## 250 169.63749  (120,240]   Typical  [ 71.1,176)
## 251 191.12855  (120,240]   Typical  [175.9,229)
## 252 222.03720  (120,240]   Typical  [175.9,229)
## 253 150.07445  (120,240]   Typical  [ 71.1,176)
## 254 180.39212  (120,240]   Typical  [175.9,229)
## 255 168.33305  (120,240]   Typical  [ 71.1,176)
## 256 187.64937  (120,240]   Typical  [175.9,229)
## 257 257.01883 (240,6e+03]      Long  [229.4,553]
## 258 218.41224  (120,240]   Typical  [175.9,229)
## 259 172.79140  (120,240]   Typical  [ 71.1,176)
## 260 195.44689  (120,240]   Typical  [175.9,229)
## 261 117.91492    (0,120]     Short  [ 71.1,176)
## 262 124.55438  (120,240]   Typical  [ 71.1,176)
## 263 224.48362  (120,240]   Typical  [175.9,229)
## 264 334.61777 (240,6e+03]      Long  [229.4,553]
## 265 198.99807  (120,240]   Typical  [175.9,229)
## 266 163.85181  (120,240]   Typical  [ 71.1,176)
## 267 138.05822  (120,240]   Typical  [ 71.1,176)
## 268 256.53266 (240,6e+03]      Long  [229.4,553]
## 269 262.91564 (240,6e+03]      Long  [229.4,553]
## 270 146.47218  (120,240]   Typical  [ 71.1,176)
## 271 241.87819 (240,6e+03]      Long  [229.4,553]
## 272 115.47660    (0,120]     Short  [ 71.1,176)
## 273 243.44857 (240,6e+03]      Long  [229.4,553]
## 274 235.42410  (120,240]   Typical  [229.4,553]
## 275 255.33076 (240,6e+03]      Long  [229.4,553]
## 276 208.25070  (120,240]   Typical  [175.9,229)
## 277 132.19186  (120,240]   Typical  [ 71.1,176)
## 278 167.41170  (120,240]   Typical  [ 71.1,176)
## 279 160.55093  (120,240]   Typical  [ 71.1,176)
## 280 282.01783 (240,6e+03]      Long  [229.4,553]
## 281 258.99843 (240,6e+03]      Long  [229.4,553]
## 282 294.99235 (240,6e+03]      Long  [229.4,553]
## 283 248.51645 (240,6e+03]      Long  [229.4,553]
## 284 193.18552  (120,240]   Typical  [175.9,229)
## 285 121.00614  (120,240]   Typical  [ 71.1,176)
## 286 213.62677  (120,240]   Typical  [175.9,229)
## 287 191.47774  (120,240]   Typical  [175.9,229)
## 288 132.05043  (120,240]   Typical  [ 71.1,176)
## 289 280.36945 (240,6e+03]      Long  [229.4,553]
## 290 164.39762  (120,240]   Typical  [ 71.1,176)
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## 291 136.81540   (120,240]   Typical  [ 71.1,176)
## 292 209.93876   (120,240]   Typical  [175.9,229)
## 293 195.84232   (120,240]   Typical  [175.9,229)
## 294 225.29810   (120,240]   Typical  [175.9,229)
## 295 254.68795 (240,6e+03]      Long  [229.4,553]
## 296 304.23808 (240,6e+03]      Long  [229.4,553]
## 297 264.65435 (240,6e+03]      Long  [229.4,553]
## 298 167.89793   (120,240]   Typical  [ 71.1,176)
## 299 196.91325   (120,240]   Typical  [175.9,229)
## 300 296.30577 (240,6e+03]      Long  [229.4,553]
## 301 238.37517   (120,240]   Typical  [229.4,553]
## 302 126.18910   (120,240]   Typical  [ 71.1,176)
## 303 335.86631 (240,6e+03]      Long  [229.4,553]
## 304 268.62577 (240,6e+03]      Long  [229.4,553]
## 305 260.25012 (240,6e+03]      Long  [229.4,553]
## 306 195.57213   (120,240]   Typical  [175.9,229)
## 307 224.34436   (120,240]   Typical  [175.9,229)
## 308 284.15503 (240,6e+03]      Long  [229.4,553]
## 309 151.76761   (120,240]   Typical  [ 71.1,176)
## 310 184.65242   (120,240]   Typical  [175.9,229)
## 311 312.35288 (240,6e+03]      Long  [229.4,553]
## 312 240.65283 (240,6e+03]      Long  [229.4,553]
## 313 317.64859 (240,6e+03]      Long  [229.4,553]
## 314 297.85323 (240,6e+03]      Long  [229.4,553]
## 315 259.57047 (240,6e+03]      Long  [229.4,553]
## 316 322.73087 (240,6e+03]      Long  [229.4,553]
## 317 249.37853 (240,6e+03]      Long  [229.4,553]
## 318 285.31631 (240,6e+03]      Long  [229.4,553]
## 319 206.42589   (120,240]   Typical  [175.9,229)
## 320 142.51235   (120,240]   Typical  [ 71.1,176)
## 321 160.61435   (120,240]   Typical  [ 71.1,176)
## 322 246.90068 (240,6e+03]      Long  [229.4,553]
## 323 174.41869   (120,240]   Typical  [ 71.1,176)
## 324 216.33758   (120,240]   Typical  [175.9,229)
## 325 243.41176 (240,6e+03]      Long  [229.4,553]
## 326 169.00337   (120,240]   Typical  [ 71.1,176)
## 327 323.46456 (240,6e+03]      Long  [229.4,553]
## 328 281.47816 (240,6e+03]      Long  [229.4,553]
## 329 169.27091   (120,240]   Typical  [ 71.1,176)
## 330 187.15676   (120,240]   Typical  [175.9,229)
## 331 261.39538 (240,6e+03]      Long  [229.4,553]
## 332 231.01608   (120,240]   Typical  [229.4,553]
## 333 319.45586 (240,6e+03]      Long  [229.4,553]
## 334 168.52660   (120,240]   Typical  [ 71.1,176)
## 335 124.84755   (120,240]   Typical  [ 71.1,176)
## 336 154.32140   (120,240]   Typical  [ 71.1,176)
## 337 134.13013   (120,240]   Typical  [ 71.1,176)
## 338 118.84703     (0,120]     Short  [ 71.1,176)
## 339 201.60892   (120,240]   Typical  [175.9,229)
## 340 253.51565 (240,6e+03]      Long  [229.4,553]
## 341 155.59742   (120,240]   Typical  [ 71.1,176)
## 342  94.91644     (0,120]     Short  [ 71.1,176)
## 343 159.93751   (120,240]   Typical  [ 71.1,176)
## 344 191.21793   (120,240]   Typical  [175.9,229)
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## 345 158.18399  (120,240]     Typical  [ 71.1,176)
## 346 232.63843  (120,240]     Typical  [229.4,553]
## 347 250.00263 (240,6e+03]       Long  [229.4,553]
## 348  89.08464     (0,120]      Short  [ 71.1,176)
## 349 181.05117  (120,240]     Typical  [175.9,229)
## 350 522.27196 (240,6e+03]       Long  [229.4,553]
## 351 228.47134  (120,240]     Typical  [175.9,229)
## 352 243.26339 (240,6e+03]       Long  [229.4,553]
## 353 197.17925  (120,240]     Typical  [175.9,229)
## 354 251.54023 (240,6e+03]       Long  [229.4,553]
## 355 214.26124  (120,240]     Typical  [175.9,229)
## 356 236.96904  (120,240]     Typical  [229.4,553]
## 357 300.58710 (240,6e+03]       Long  [229.4,553]
## 358 234.65643  (120,240]     Typical  [229.4,553]
## 359 106.48155     (0,120]      Short  [ 71.1,176)
## 360 198.40365  (120,240]     Typical  [175.9,229)
## 361 172.80366  (120,240]     Typical  [ 71.1,176)
## 362 274.95510 (240,6e+03]       Long  [229.4,553]
## 363 201.61715  (120,240]     Typical  [175.9,229)
## 364 245.05543 (240,6e+03]       Long  [229.4,553]
## 365 214.02179  (120,240]     Typical  [175.9,229)
## 366 295.58157 (240,6e+03]       Long  [229.4,553]
## 367 453.83262 (240,6e+03]       Long  [229.4,553]
## 368 275.76809 (240,6e+03]       Long  [229.4,553]
## 369 108.67423     (0,120]      Short  [ 71.1,176)
## 370 231.03411  (120,240]     Typical  [229.4,553]
## 371 197.08569  (120,240]     Typical  [175.9,229)
## 372 244.83979 (240,6e+03]       Long  [229.4,553]
## 373 281.80651 (240,6e+03]       Long  [229.4,553]
## 374 283.33438 (240,6e+03]       Long  [229.4,553]
## 375 146.13105  (120,240]     Typical  [ 71.1,176)
## 376 287.79529 (240,6e+03]       Long  [229.4,553]
## 377 265.36538 (240,6e+03]       Long  [229.4,553]
## 378 195.01284  (120,240]     Typical  [175.9,229)
## 379 225.86110  (120,240]     Typical  [175.9,229)
## 380 233.32957  (120,240]     Typical  [229.4,553]
## 381 447.25419 (240,6e+03]       Long  [229.4,553]
## 382 281.97976 (240,6e+03]       Long  [229.4,553]
## 383 296.61903 (240,6e+03]       Long  [229.4,553]
## 384 165.51573  (120,240]     Typical  [ 71.1,176)
## 385 179.20943  (120,240]     Typical  [175.9,229)
## 386 166.10854  (120,240]     Typical  [ 71.1,176)
## 387 241.60198 (240,6e+03]       Long  [229.4,553]
## 388 146.87599  (120,240]     Typical  [ 71.1,176)
## 389 203.53114  (120,240]     Typical  [175.9,229)
## 390 245.98323 (240,6e+03]       Long  [229.4,553]
## 391 186.16047  (120,240]     Typical  [175.9,229)
## 392 240.58995 (240,6e+03]       Long  [229.4,553]
## 393 247.78524 (240,6e+03]       Long  [229.4,553]
## 394 250.65292 (240,6e+03]       Long  [229.4,553]
## 395 350.86623 (240,6e+03]       Long  [229.4,553]
## 396 365.34481 (240,6e+03]       Long  [229.4,553]
## 397 222.48165  (120,240]     Typical  [175.9,229)
## 398 256.96966 (240,6e+03]       Long  [229.4,553]
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## 399  261.63808 (240,6e+03]            Long  [229.4,553]
## 400  257.43947 (240,6e+03]            Long  [229.4,553]
## 401  196.70041   (120,240]         Typical  [175.9,229)
## 402  259.20330 (240,6e+03]            Long  [229.4,553]
## 403  194.86745   (120,240]         Typical  [175.9,229)
## 404  115.87655     (0,120]           Short  [ 71.1,176)
## 405  205.88371   (120,240]         Typical  [175.9,229)
## 406  186.78525   (120,240]         Typical  [175.9,229)
## 407  197.45102   (120,240]         Typical  [175.9,229)
## 408  163.35948   (120,240]         Typical  [ 71.1,176)
## 409  140.90728   (120,240]         Typical  [ 71.1,176)
## 410  181.80719   (120,240]         Typical  [175.9,229)
## 411  143.77437   (120,240]         Typical  [ 71.1,176)
## 412  270.09422 (240,6e+03]            Long  [229.4,553]
## 413  332.49742 (240,6e+03]            Long  [229.4,553]
## 414  135.59505   (120,240]         Typical  [ 71.1,176)
## 415  214.68561   (120,240]         Typical  [175.9,229)
## 416  147.92142   (120,240]         Typical  [ 71.1,176)
## 417  263.89452 (240,6e+03]            Long  [229.4,553]
## 418  217.87207   (120,240]         Typical  [175.9,229)
## 419  193.35102   (120,240]         Typical  [175.9,229)
## 420  205.35423   (120,240]         Typical  [175.9,229)
## 421  218.49562   (120,240]         Typical  [175.9,229)
## 422  445.79983 (240,6e+03]            Long  [229.4,553]
## 423  221.24152   (120,240]         Typical  [175.9,229)
## 424  176.22125   (120,240]         Typical  [175.9,229)
## 425  198.97919   (120,240]         Typical  [175.9,229)
## 426  262.16875 (240,6e+03]            Long  [229.4,553]
## 427  318.60820 (240,6e+03]            Long  [229.4,553]
## 428  197.73782   (120,240]         Typical  [175.9,229)
## 429  225.09269   (120,240]         Typical  [175.9,229)
## 430  167.15219   (120,240]         Typical  [ 71.1,176)
## 431  139.21152   (120,240]         Typical  [ 71.1,176)
## 432  176.68304   (120,240]         Typical  [175.9,229)
## 433  176.91446   (120,240]         Typical  [175.9,229)
## 434  143.03969   (120,240]         Typical  [ 71.1,176)
## 435  131.43728   (120,240]         Typical  [ 71.1,176)
## 436  114.97139     (0,120]           Short  [ 71.1,176)
## 437  144.70658   (120,240]         Typical  [ 71.1,176)
## 438  288.68748 (240,6e+03]            Long  [229.4,553]
## 439  248.06630 (240,6e+03]            Long  [229.4,553]
## 440  243.83517 (240,6e+03]            Long  [229.4,553]
## 441  204.83808   (120,240]         Typical  [175.9,229)
## 442  297.13761 (240,6e+03]            Long  [229.4,553]
## 443  235.66691   (120,240]         Typical  [229.4,553]
## 444  213.30991   (120,240]         Typical  [175.9,229)
## 445  188.77986   (120,240]         Typical  [175.9,229)
## 446  128.91488   (120,240]         Typical  [ 71.1,176)
## 447  169.95131   (120,240]         Typical  [ 71.1,176)
## 448  314.50083 (240,6e+03]            Long  [229.4,553]
## 449  148.38235   (120,240]         Typical  [ 71.1,176)
## 450  271.04666 (240,6e+03]            Long  [229.4,553]
## 451  191.10414   (120,240]         Typical  [175.9,229)
## 452  128.45993   (120,240]         Typical  [ 71.1,176)
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## 453 145.87163   (120,240]          Typical  [ 71.1,176)
## 454 233.56046   (120,240]          Typical  [229.4,553]
## 455 233.66476   (120,240]          Typical  [229.4,553]
## 456 235.89721   (120,240]          Typical  [229.4,553]
## 457 164.15525   (120,240]          Typical  [ 71.1,176)
## 458 240.80942 (240,6e+03]             Long  [229.4,553]
## 459 199.48340   (120,240]          Typical  [175.9,229)
## 460 232.39060   (120,240]          Typical  [229.4,553]
## 461 202.40433   (120,240]          Typical  [175.9,229)
## 462 206.13265   (120,240]          Typical  [175.9,229)
## 463 185.24052   (120,240]          Typical  [175.9,229)
## 464 186.11994   (120,240]          Typical  [175.9,229)
## 465 173.01597   (120,240]          Typical  [ 71.1,176)
## 466 231.57913   (120,240]          Typical  [229.4,553]
## 467 132.48699   (120,240]          Typical  [ 71.1,176)
## 468 159.48315   (120,240]          Typical  [ 71.1,176)
## 469 163.09034   (120,240]          Typical  [ 71.1,176)
## 470 135.62638   (120,240]          Typical  [ 71.1,176)
## 471 202.76403   (120,240]          Typical  [175.9,229)
## 472 220.22463   (120,240]          Typical  [175.9,229)
## 473 155.20515   (120,240]          Typical  [ 71.1,176)
## 474  74.43352    (0,120]            Short  [ 71.1,176)
## 475 365.15947 (240,6e+03]             Long  [229.4,553]
## 476 270.97125 (240,6e+03]             Long  [229.4,553]
## 477 191.22049   (120,240]          Typical  [175.9,229)
## 478 336.82252 (240,6e+03]             Long  [229.4,553]
## 479 278.42864 (240,6e+03]             Long  [229.4,553]
## 480 286.63104 (240,6e+03]             Long  [229.4,553]
## 481 118.68459    (0,120]            Short  [ 71.1,176)
## 482 257.82274 (240,6e+03]             Long  [229.4,553]
## 483 171.91263   (120,240]          Typical  [ 71.1,176)
## 484 196.19039   (120,240]          Typical  [175.9,229)
## 485 149.26540   (120,240]          Typical  [ 71.1,176)
## 486 306.40105 (240,6e+03]             Long  [229.4,553]
## 487 269.61535 (240,6e+03]             Long  [229.4,553]
## 488 235.99617   (120,240]          Typical  [229.4,553]
## 489 172.19931   (120,240]          Typical  [ 71.1,176)
## 490 175.14032   (120,240]          Typical  [ 71.1,176)
## 491 208.99559   (120,240]          Typical  [175.9,229)
## 492 226.11858   (120,240]          Typical  [175.9,229)
## 493 195.47629   (120,240]          Typical  [175.9,229)
## 494 174.24399   (120,240]          Typical  [ 71.1,176)
## 495 207.90824   (120,240]          Typical  [175.9,229)
## 496 197.84456   (120,240]          Typical  [175.9,229)
## 497 263.71141 (240,6e+03]             Long  [229.4,553]
## 498 257.80174 (240,6e+03]             Long  [229.4,553]
## 499 127.60808   (120,240]          Typical  [ 71.1,176)
## 500 168.27752   (120,240]          Typical  [ 71.1,176)
## 501 393.29312 (240,6e+03]             Long  [229.4,553]
## 502 173.73708   (120,240]          Typical  [ 71.1,176)
## 503 272.33207 (240,6e+03]             Long  [229.4,553]
## 504 142.45178   (120,240]          Typical  [ 71.1,176)
## 505 313.43862 (240,6e+03]             Long  [229.4,553]
## 506 203.87469   (120,240]          Typical  [175.9,229)
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## 507  256.72773 (240,6e+03]        Long  [229.4,553]
## 508  169.17657   (120,240]      Typical  [ 71.1,176)
## 509  189.19150   (120,240]      Typical  [175.9,229)
## 510  321.97879 (240,6e+03]         Long  [229.4,553]
## 511  289.27040 (240,6e+03]         Long  [229.4,553]
## 512  195.45228   (120,240]      Typical  [175.9,229)
## 513  184.75698   (120,240]      Typical  [175.9,229)
## 514  242.99786 (240,6e+03]         Long  [229.4,553]
## 515  170.93811   (120,240]      Typical  [ 71.1,176)
## 516  247.50089 (240,6e+03]         Long  [229.4,553]
## 517  225.76413   (120,240]      Typical  [175.9,229)
## 518  168.24578   (120,240]      Typical  [ 71.1,176)
## 519  176.55145   (120,240]      Typical  [175.9,229)
## 520  164.38166   (120,240]      Typical  [ 71.1,176)
## 521  204.50340   (120,240]      Typical  [175.9,229)
## 522  216.30171   (120,240]      Typical  [175.9,229)
## 523  266.93815 (240,6e+03]         Long  [229.4,553]
## 524   94.42283     (0,120]        Short  [ 71.1,176)
## 525  281.71213 (240,6e+03]         Long  [229.4,553]
## 526  199.30801   (120,240]      Typical  [175.9,229)
## 527  185.94891   (120,240]      Typical  [175.9,229)
## 528  179.16930   (120,240]      Typical  [175.9,229)
## 529  257.10562 (240,6e+03]         Long  [229.4,553]
## 530  198.06618   (120,240]      Typical  [175.9,229)
## 531  326.40519 (240,6e+03]         Long  [229.4,553]
## 532  230.52728   (120,240]      Typical  [229.4,553]
## 533  210.20494   (120,240]      Typical  [175.9,229)
## 534  207.36559   (120,240]      Typical  [175.9,229)
## 535  169.70771   (120,240]      Typical  [ 71.1,176)
## 536  283.65677 (240,6e+03]         Long  [229.4,553]
## 537  448.33077 (240,6e+03]         Long  [229.4,553]
## 538  131.86225   (120,240]      Typical  [ 71.1,176)
## 539  187.05334   (120,240]      Typical  [175.9,229)
## 540  232.03572   (120,240]      Typical  [229.4,553]
## 541  288.97406 (240,6e+03]         Long  [229.4,553]
## 542  204.75629   (120,240]      Typical  [175.9,229)
## 543  154.48352   (120,240]      Typical  [ 71.1,176)
## 544  146.79691   (120,240]      Typical  [ 71.1,176)
## 545  220.25194   (120,240]      Typical  [175.9,229)
## 546  272.50513 (240,6e+03]         Long  [229.4,553]
## 547  274.05168 (240,6e+03]         Long  [229.4,553]
## 548  124.05345   (120,240]      Typical  [ 71.1,176)
## 549  229.87378   (120,240]      Typical  [229.4,553]
## 550  232.52650   (120,240]      Typical  [229.4,553]
## 551  153.11177   (120,240]      Typical  [ 71.1,176)
## 552  375.94837 (240,6e+03]         Long  [229.4,553]
## 553  241.34719 (240,6e+03]         Long  [229.4,553]
## 554  191.47726   (120,240]      Typical  [175.9,229)
## 555  169.44322   (120,240]      Typical  [ 71.1,176)
## 556  190.89614   (120,240]      Typical  [175.9,229)
## 557  151.24365   (120,240]      Typical  [ 71.1,176)
## 558  137.97139   (120,240]      Typical  [ 71.1,176)
## 559  171.61044   (120,240]      Typical  [ 71.1,176)
## 560  162.77208   (120,240]      Typical  [ 71.1,176)
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## 561  171.85968  (120,240]    Typical  [ 71.1,176)
## 562  122.96880  (120,240]    Typical  [ 71.1,176)
## 563  148.01981  (120,240]    Typical  [ 71.1,176)
## 564  119.88063    (0,120]      Short  [ 71.1,176)
## 565  188.39719  (120,240]    Typical  [175.9,229)
## 566  201.65370  (120,240]    Typical  [175.9,229)
## 567  211.52275  (120,240]    Typical  [175.9,229)
## 568  361.39873 (240,6e+03]     Long  [229.4,553]
## 569  178.32600  (120,240]    Typical  [175.9,229)
## 570  212.59569  (120,240]    Typical  [175.9,229)
## 571  176.40608  (120,240]    Typical  [175.9,229)
## 572  218.25889  (120,240]    Typical  [175.9,229)
## 573  211.64854  (120,240]    Typical  [175.9,229)
## 574  154.42895  (120,240]    Typical  [ 71.1,176)
## 575  255.08483 (240,6e+03]     Long  [229.4,553]
## 576  263.36037 (240,6e+03]     Long  [229.4,553]
## 577  331.77752 (240,6e+03]     Long  [229.4,553]
## 578  268.65783 (240,6e+03]     Long  [229.4,553]
## 579  205.99436  (120,240]    Typical  [175.9,229)
## 580  126.33073  (120,240]    Typical  [ 71.1,176)
## 581  186.07995  (120,240]    Typical  [175.9,229)
## 582  178.06942  (120,240]    Typical  [175.9,229)
## 583  164.96812  (120,240]    Typical  [ 71.1,176)
## 584  104.10973    (0,120]      Short  [ 71.1,176)
## 585  209.08839  (120,240]    Typical  [175.9,229)
## 586  175.93490  (120,240]    Typical  [175.9,229)
## 587  159.85575  (120,240]    Typical  [ 71.1,176)
## 588  189.40760  (120,240]    Typical  [175.9,229)
## 589  117.09971    (0,120]      Short  [ 71.1,176)
## 590  247.93401 (240,6e+03]     Long  [229.4,553]
## 591  203.23056  (120,240]    Typical  [175.9,229)
## 592  553.11653 (240,6e+03]     Long  [229.4,553]
## 593  167.17951  (120,240]    Typical  [ 71.1,176)
## 594  204.81892  (120,240]    Typical  [175.9,229)
## 595  260.59213 (240,6e+03]     Long  [229.4,553]
## 596  169.27084  (120,240]    Typical  [ 71.1,176)
## 597  177.26918  (120,240]    Typical  [175.9,229)
## 598  145.93082  (120,240]    Typical  [ 71.1,176)
## 599  233.00077  (120,240]    Typical  [229.4,553]
## 600  168.25697  (120,240]    Typical  [ 71.1,176)
## 601  118.47534    (0,120]      Short  [ 71.1,176)
## 602  173.30555  (120,240]    Typical  [ 71.1,176)
## 603  305.78348 (240,6e+03]     Long  [229.4,553]
## 604  172.52824  (120,240]    Typical  [ 71.1,176)
## 605  153.28735  (120,240]    Typical  [ 71.1,176)
## 606  254.71138 (240,6e+03]     Long  [229.4,553]
## 607  212.11592  (120,240]    Typical  [175.9,229)
## 608  260.15928 (240,6e+03]     Long  [229.4,553]
## 609  157.39329  (120,240]    Typical  [ 71.1,176)
## 610  207.74889  (120,240]    Typical  [175.9,229)
## 611  321.39327 (240,6e+03]     Long  [229.4,553]
## 612  146.19935  (120,240]    Typical  [ 71.1,176)
## 613  226.72684  (120,240]    Typical  [175.9,229)
## 614  157.07926  (120,240]    Typical  [ 71.1,176)
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133

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## 615 163.38219  (120,240]        Typical  [ 71.1,176)
## 616 180.47509  (120,240]        Typical  [175.9,229)
## 617 191.66240  (120,240]        Typical  [175.9,229)
## 618 214.28858  (120,240]        Typical  [175.9,229)
## 619 348.24840 (240,6e+03]          Long  [229.4,553]
## 620 145.77816  (120,240]        Typical  [ 71.1,176)
## 621 123.79690  (120,240]        Typical  [ 71.1,176)
## 622 260.33101 (240,6e+03]          Long  [229.4,553]
## 623 305.05325 (240,6e+03]          Long  [229.4,553]
## 624 187.44941  (120,240]        Typical  [175.9,229)
## 625 165.21743  (120,240]        Typical  [ 71.1,176)
## 626 198.48186  (120,240]        Typical  [175.9,229)
## 627 235.02789  (120,240]        Typical  [229.4,553]
## 628 305.74204 (240,6e+03]          Long  [229.4,553]
## 629 204.63709  (120,240]        Typical  [175.9,229)
## 630 349.07484 (240,6e+03]          Long  [229.4,553]
## 631 165.73787  (120,240]        Typical  [ 71.1,176)
## 632 241.37321 (240,6e+03]          Long  [229.4,553]
## 633 162.08163  (120,240]        Typical  [ 71.1,176)
## 634 109.03108    (0,120]          Short  [ 71.1,176)
## 635 182.34949  (120,240]        Typical  [175.9,229)
## 636 203.08614  (120,240]        Typical  [175.9,229)
## 637 216.34911  (120,240]        Typical  [175.9,229)
## 638 262.23839 (240,6e+03]          Long  [229.4,553]
## 639 235.12559  (120,240]        Typical  [229.4,553]
## 640 123.22551  (120,240]        Typical  [ 71.1,176)
## 641 202.64283  (120,240]        Typical  [175.9,229)
## 642 238.19011  (120,240]        Typical  [229.4,553]
## 643 146.92630  (120,240]        Typical  [ 71.1,176)
## 644 144.98759  (120,240]        Typical  [ 71.1,176)
## 645 178.44210  (120,240]        Typical  [175.9,229)
## 646 145.71589  (120,240]        Typical  [ 71.1,176)
## 647 196.67754  (120,240]        Typical  [175.9,229)
## 648 253.35081 (240,6e+03]          Long  [229.4,553]
## 649 179.33638  (120,240]        Typical  [175.9,229)
## 650 231.99407  (120,240]        Typical  [229.4,553]
## 651 110.27136    (0,120]          Short  [ 71.1,176)
## 652 225.28068  (120,240]        Typical  [175.9,229)
## 653 204.69059  (120,240]        Typical  [175.9,229)
## 654 175.63850  (120,240]        Typical  [ 71.1,176)
## 655 136.82673  (120,240]        Typical  [ 71.1,176)
## 656 186.20857  (120,240]        Typical  [175.9,229)
## 657 156.27504  (120,240]        Typical  [ 71.1,176)
## 658 240.59871 (240,6e+03]          Long  [229.4,553]
## 659 255.02349 (240,6e+03]          Long  [229.4,553]
## 660 247.51742 (240,6e+03]          Long  [229.4,553]
## 661 404.54919 (240,6e+03]          Long  [229.4,553]
## 662 211.47428  (120,240]        Typical  [175.9,229)
## 663 165.28920  (120,240]        Typical  [ 71.1,176)
## 664 132.27558  (120,240]        Typical  [ 71.1,176)
## 665 320.06840 (240,6e+03]          Long  [229.4,553]
## 666 210.52113  (120,240]        Typical  [175.9,229)
## 667 144.63139  (120,240]        Typical  [ 71.1,176)
## 668 183.36652  (120,240]        Typical  [175.9,229)
```

```
## 669  234.36451   (120,240]       Typical  [229.4,553]
## 670  163.26140   (120,240]       Typical  [ 71.1,176)
## 671  215.02154   (120,240]       Typical  [175.9,229)
## 672  240.21246 (240,6e+03]          Long  [229.4,553]
## 673  232.87404   (120,240]       Typical  [229.4,553]
## 674  152.38378   (120,240]       Typical  [ 71.1,176)
## 675  378.17763 (240,6e+03]          Long  [229.4,553]
## 676  117.26543     (0,120]         Short  [ 71.1,176)
## 677  161.40001   (120,240]       Typical  [ 71.1,176)
## 678  129.92119   (120,240]       Typical  [ 71.1,176)
## 679  200.10474   (120,240]       Typical  [175.9,229)
## 680  118.84160     (0,120]         Short  [ 71.1,176)
## 681  263.26099 (240,6e+03]          Long  [229.4,553]
## 682  147.09834   (120,240]       Typical  [ 71.1,176)
## 683  192.11454   (120,240]       Typical  [175.9,229)
## 684  151.48380   (120,240]       Typical  [ 71.1,176)
## 685  181.65296   (120,240]       Typical  [175.9,229)
## 686  240.23177 (240,6e+03]          Long  [229.4,553]
## 687  157.31634   (120,240]       Typical  [ 71.1,176)
## 688  173.74777   (120,240]       Typical  [ 71.1,176)
## 689  347.56516 (240,6e+03]          Long  [229.4,553]
## 690  129.27571   (120,240]       Typical  [ 71.1,176)
## 691  208.00421   (120,240]       Typical  [175.9,229)
## 692  302.62343 (240,6e+03]          Long  [229.4,553]
## 693  146.09531   (120,240]       Typical  [ 71.1,176)
## 694  260.33342 (240,6e+03]          Long  [229.4,553]
## 695  192.87902   (120,240]       Typical  [175.9,229)
## 696  302.84052 (240,6e+03]          Long  [229.4,553]
## 697  204.83902   (120,240]       Typical  [175.9,229)
## 698  166.47365   (120,240]       Typical  [ 71.1,176)
## 699  249.61711 (240,6e+03]          Long  [229.4,553]
## 700  194.73433   (120,240]       Typical  [175.9,229)
## 701  153.38175   (120,240]       Typical  [ 71.1,176)
## 702  206.03187   (120,240]       Typical  [175.9,229)
## 703  291.24741 (240,6e+03]          Long  [229.4,553]
## 704  208.01963   (120,240]       Typical  [175.9,229)
## 705  220.16218   (120,240]       Typical  [175.9,229)
## 706  117.33724     (0,120]         Short  [ 71.1,176)
## 707  335.67821 (240,6e+03]          Long  [229.4,553]
## 708  191.70679   (120,240]       Typical  [175.9,229)
## 709  276.93813 (240,6e+03]          Long  [229.4,553]
## 710  184.06578   (120,240]       Typical  [175.9,229)
## 711  246.41229 (240,6e+03]          Long  [229.4,553]
## 712  191.62839   (120,240]       Typical  [175.9,229)
## 713  171.23405   (120,240]       Typical  [ 71.1,176)
## 714  162.53049   (120,240]       Typical  [ 71.1,176)
## 715  239.71000   (120,240]       Typical  [229.4,553]
## 716  214.71415   (120,240]       Typical  [175.9,229)
## 717  185.89192   (120,240]       Typical  [175.9,229)
## 718  210.56832   (120,240]       Typical  [175.9,229)
## 719  202.39302   (120,240]       Typical  [175.9,229)
## 720  132.90183   (120,240]       Typical  [ 71.1,176)
## 721  165.80935   (120,240]       Typical  [ 71.1,176)
## 722  233.83314   (120,240]       Typical  [229.4,553]
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## 723  194.56192   (120,240]       Typical  [175.9,229)
## 724  223.12370   (120,240]       Typical  [175.9,229)
## 725  120.21881   (120,240]       Typical  [ 71.1,176)
## 726  266.65251  (240,6e+03]         Long  [229.4,553]
## 727  193.12965   (120,240]       Typical  [175.9,229)
## 728  172.66590   (120,240]       Typical  [ 71.1,176)
## 729  179.67147   (120,240]       Typical  [175.9,229)
## 730  342.33912  (240,6e+03]         Long  [229.4,553]
## 731  200.24528   (120,240]       Typical  [175.9,229)
## 732  328.54818  (240,6e+03]         Long  [229.4,553]
## 733  139.96723   (120,240]       Typical  [ 71.1,176)
## 734  293.47762  (240,6e+03]         Long  [229.4,553]
## 735  157.19273   (120,240]       Typical  [ 71.1,176)
## 736  129.79308   (120,240]       Typical  [ 71.1,176)
## 737  284.86855  (240,6e+03]         Long  [229.4,553]
## 738  218.74395   (120,240]       Typical  [175.9,229)
## 739  245.29346  (240,6e+03]         Long  [229.4,553]
## 740  225.37293   (120,240]       Typical  [175.9,229)
## 741  280.86719  (240,6e+03]         Long  [229.4,553]
## 742  196.40115   (120,240]       Typical  [175.9,229)
## 743  179.42436   (120,240]       Typical  [175.9,229)
## 744  107.37458     (0,120]         Short  [ 71.1,176)
## 745  159.08119   (120,240]       Typical  [ 71.1,176)
## 746  157.48677   (120,240]       Typical  [ 71.1,176)
## 747  276.35433  (240,6e+03]         Long  [229.4,553]
## 748   99.20280     (0,120]         Short  [ 71.1,176)
## 749  192.85749   (120,240]       Typical  [175.9,229)
## 750  275.34490  (240,6e+03]         Long  [229.4,553]
## 751  161.88591   (120,240]       Typical  [ 71.1,176)
## 752  243.04108  (240,6e+03]         Long  [229.4,553]
## 753  198.52455   (120,240]       Typical  [175.9,229)
## 754  148.77134   (120,240]       Typical  [ 71.1,176)
## 755  282.51615  (240,6e+03]         Long  [229.4,553]
## 756  187.77305   (120,240]       Typical  [175.9,229)
## 757  190.57443   (120,240]       Typical  [175.9,229)
## 758  222.63798   (120,240]       Typical  [175.9,229)
## 759  275.00594  (240,6e+03]         Long  [229.4,553]
## 760  319.49478  (240,6e+03]         Long  [229.4,553]
## 761  125.71640   (120,240]       Typical  [ 71.1,176)
## 762  249.11301  (240,6e+03]         Long  [229.4,553]
## 763  176.63679   (120,240]       Typical  [175.9,229)
## 764  231.08582   (120,240]       Typical  [229.4,553]
## 765  190.08658   (120,240]       Typical  [175.9,229)
## 766  235.25945   (120,240]       Typical  [229.4,553]
## 767  191.45551   (120,240]       Typical  [175.9,229)
## 768  209.32929   (120,240]       Typical  [175.9,229)
## 769  246.45957  (240,6e+03]         Long  [229.4,553]
## 770  214.26340   (120,240]       Typical  [175.9,229)
## 771  332.41167  (240,6e+03]         Long  [229.4,553]
## 772  188.22377   (120,240]       Typical  [175.9,229)
## 773  144.44398   (120,240]       Typical  [ 71.1,176)
## 774  165.82709   (120,240]       Typical  [ 71.1,176)
## 775  265.93791  (240,6e+03]         Long  [229.4,553]
## 776  230.38258   (120,240]       Typical  [229.4,553]
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## 777  188.86087   (120,240]        Typical  [175.9,229)
## 778  230.30017   (120,240]        Typical  [229.4,553]
## 779  313.82343 (240,6e+03]           Long  [229.4,553]
## 780  211.60833   (120,240]        Typical  [175.9,229)
## 781  168.56264   (120,240]        Typical  [ 71.1,176)
## 782  138.56193   (120,240]        Typical  [ 71.1,176)
## 783  249.01979 (240,6e+03]           Long  [229.4,553]
## 784  153.27216   (120,240]        Typical  [ 71.1,176)
## 785  150.20742   (120,240]        Typical  [ 71.1,176)
## 786  125.63926   (120,240]        Typical  [ 71.1,176)
## 787  203.84939   (120,240]        Typical  [175.9,229)
## 788  234.76716   (120,240]        Typical  [229.4,553]
## 789  133.11236   (120,240]        Typical  [ 71.1,176)
## 790  379.68934 (240,6e+03]           Long  [229.4,553]
## 791  169.62536   (120,240]        Typical  [ 71.1,176)
## 792  157.24302   (120,240]        Typical  [ 71.1,176)
## 793  253.27891 (240,6e+03]           Long  [229.4,553]
## 794  181.22812   (120,240]        Typical  [175.9,229)
## 795  194.84458   (120,240]        Typical  [175.9,229)
## 796  145.39072   (120,240]        Typical  [ 71.1,176)
## 797  208.51954   (120,240]        Typical  [175.9,229)
## 798  144.49587   (120,240]        Typical  [ 71.1,176)
## 799  201.76252   (120,240]        Typical  [175.9,229)
## 800  127.87015   (120,240]        Typical  [ 71.1,176)
## 801  266.41039 (240,6e+03]           Long  [229.4,553]
## 802  368.91271 (240,6e+03]           Long  [229.4,553]
## 803   71.13172     (0,120]          Short  [ 71.1,176)
## 804  172.21144   (120,240]        Typical  [ 71.1,176)
## 805  207.87797   (120,240]        Typical  [175.9,229)
## 806  221.24638   (120,240]        Typical  [175.9,229)
## 807  236.71789   (120,240]        Typical  [229.4,553]
## 808  256.14451 (240,6e+03]           Long  [229.4,553]
## 809  205.14675   (120,240]        Typical  [175.9,229)
## 810  231.18504   (120,240]        Typical  [229.4,553]
## 811  262.12750 (240,6e+03]           Long  [229.4,553]
## 812  197.82456   (120,240]        Typical  [175.9,229)
## 813  224.84483   (120,240]        Typical  [175.9,229)
## 814  343.13451 (240,6e+03]           Long  [229.4,553]
## 815  160.43216   (120,240]        Typical  [ 71.1,176)
## 816  216.60230   (120,240]        Typical  [175.9,229)
## 817  242.68294 (240,6e+03]           Long  [229.4,553]
## 818  238.94297   (120,240]        Typical  [229.4,553]
## 819  153.38914   (120,240]        Typical  [ 71.1,176)
## 820  281.46575 (240,6e+03]           Long  [229.4,553]
## 821  304.10547 (240,6e+03]           Long  [229.4,553]
## 822  207.02612   (120,240]        Typical  [175.9,229)
## 823  353.86716 (240,6e+03]           Long  [229.4,553]
## 824  213.06087   (120,240]        Typical  [175.9,229)
## 825  391.34826 (240,6e+03]           Long  [229.4,553]
## 826  191.50075   (120,240]        Typical  [175.9,229)
## 827  208.84298   (120,240]        Typical  [175.9,229)
## 828  231.93606   (120,240]        Typical  [229.4,553]
## 829  198.23400   (120,240]        Typical  [175.9,229)
## 830  312.13831 (240,6e+03]           Long  [229.4,553]
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## 831  258.14572 (240,6e+03]       Long  [229.4,553]
## 832  188.54148  (120,240]      Typical  [175.9,229)
## 833  188.97775  (120,240]      Typical  [175.9,229)
## 834  140.25973  (120,240]      Typical  [ 71.1,176)
## 835  266.90210 (240,6e+03]       Long  [229.4,553]
## 836  126.37017  (120,240]      Typical  [ 71.1,176)
## 837  199.97638  (120,240]      Typical  [175.9,229)
## 838  266.57077 (240,6e+03]       Long  [229.4,553]
## 839  165.99942  (120,240]      Typical  [ 71.1,176)
## 840  204.51554  (120,240]      Typical  [175.9,229)
## 841  229.67560  (120,240]      Typical  [229.4,553]
## 842  123.30433  (120,240]      Typical  [ 71.1,176)
## 843  272.55281 (240,6e+03]       Long  [229.4,553]
## 844  159.68354  (120,240]      Typical  [ 71.1,176)
## 845  286.16448 (240,6e+03]       Long  [229.4,553]
## 846  207.83483  (120,240]      Typical  [175.9,229)
## 847  126.38826  (120,240]      Typical  [ 71.1,176)
## 848  228.40620  (120,240]      Typical  [175.9,229)
## 849  122.68064  (120,240]      Typical  [ 71.1,176)
## 850  165.10213  (120,240]      Typical  [ 71.1,176)
## 851  236.68300  (120,240]      Typical  [229.4,553]
## 852  203.50504  (120,240]      Typical  [175.9,229)
## 853  298.13865 (240,6e+03]       Long  [229.4,553]
## 854   90.30002    (0,120]       Short  [ 71.1,176)
## 855  217.04403  (120,240]      Typical  [175.9,229)
## 856  218.33677  (120,240]      Typical  [175.9,229)
## 857  166.55568  (120,240]      Typical  [ 71.1,176)
## 858  261.14381 (240,6e+03]       Long  [229.4,553]
## 859  189.71507  (120,240]      Typical  [175.9,229)
## 860  252.39425 (240,6e+03]       Long  [229.4,553]
## 861  196.85566  (120,240]      Typical  [175.9,229)
## 862  212.01856  (120,240]      Typical  [175.9,229)
## 863  159.87508  (120,240]      Typical  [ 71.1,176)
## 864  352.71367 (240,6e+03]       Long  [229.4,553]
## 865  244.78154 (240,6e+03]       Long  [229.4,553]
## 866  290.56709 (240,6e+03]       Long  [229.4,553]
## 867  158.48048  (120,240]      Typical  [ 71.1,176)
## 868  248.60577 (240,6e+03]       Long  [229.4,553]
## 869  121.07935  (120,240]      Typical  [ 71.1,176)
## 870  163.44657  (120,240]      Typical  [ 71.1,176)
## 871  230.83387  (120,240]      Typical  [229.4,553]
## 872  194.61621  (120,240]      Typical  [175.9,229)
## 873  238.20924  (120,240]      Typical  [229.4,553]
## 874  215.55252  (120,240]      Typical  [175.9,229)
## 875  253.02963 (240,6e+03]       Long  [229.4,553]
## 876  299.35346 (240,6e+03]       Long  [229.4,553]
## 877  123.18770  (120,240]      Typical  [ 71.1,176)
## 878  113.74065    (0,120]       Short  [ 71.1,176)
## 879  217.93732  (120,240]      Typical  [175.9,229)
## 880  249.21089 (240,6e+03]       Long  [229.4,553]
## 881  152.15338  (120,240]      Typical  [ 71.1,176)
## 882  207.17918  (120,240]      Typical  [175.9,229)
## 883  230.38354  (120,240]      Typical  [229.4,553]
## 884  117.11959    (0,120]       Short  [ 71.1,176)
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## 885  269.39059 (240,6e+03]       Long  [229.4,553]
## 886  373.50943 (240,6e+03]       Long  [229.4,553]
## 887  294.16183 (240,6e+03]       Long  [229.4,553]
## 888  291.69117 (240,6e+03]       Long  [229.4,553]
## 889  122.13899   (120,240]    Typical  [ 71.1,176)
## 890  276.76130 (240,6e+03]       Long  [229.4,553]
## 891  304.80293 (240,6e+03]       Long  [229.4,553]
## 892  190.47024   (120,240]    Typical  [175.9,229)
## 893  169.59607   (120,240]    Typical  [ 71.1,176)
## 894   99.94902     (0,120]      Short  [ 71.1,176)
## 895  151.08885   (120,240]    Typical  [ 71.1,176)
## 896  176.84600   (120,240]    Typical  [175.9,229)
## 897  164.54499   (120,240]    Typical  [ 71.1,176)
## 898  251.57564 (240,6e+03]       Long  [229.4,553]
## 899  168.51165   (120,240]    Typical  [ 71.1,176)
## 900  213.62828   (120,240]    Typical  [175.9,229)
## 901  431.01265 (240,6e+03]       Long  [229.4,553]
## 902  274.98562 (240,6e+03]       Long  [229.4,553]
## 903  194.15263   (120,240]    Typical  [175.9,229)
## 904  170.22566   (120,240]    Typical  [ 71.1,176)
## 905  225.62935   (120,240]    Typical  [175.9,229)
## 906  351.63454 (240,6e+03]       Long  [229.4,553]
## 907  259.04582 (240,6e+03]       Long  [229.4,553]
## 908  178.56204   (120,240]    Typical  [175.9,229)
## 909  149.56428   (120,240]    Typical  [ 71.1,176)
## 910  136.28670   (120,240]    Typical  [ 71.1,176)
## 911  205.04357   (120,240]    Typical  [175.9,229)
## 912  121.53880   (120,240]    Typical  [ 71.1,176)
## 913  158.38980   (120,240]    Typical  [ 71.1,176)
## 914  125.95597   (120,240]    Typical  [ 71.1,176)
## 915  201.78379   (120,240]    Typical  [175.9,229)
## 916  304.40493 (240,6e+03]       Long  [229.4,553]
## 917  206.05425   (120,240]    Typical  [175.9,229)
## 918  189.27277   (120,240]    Typical  [175.9,229)
## 919  154.30570   (120,240]    Typical  [ 71.1,176)
## 920  166.80989   (120,240]    Typical  [ 71.1,176)
## 921  163.56685   (120,240]    Typical  [ 71.1,176)
## 922  155.66213   (120,240]    Typical  [ 71.1,176)
## 923  155.26068   (120,240]    Typical  [ 71.1,176)
## 924  501.90477 (240,6e+03]       Long  [229.4,553]
## 925  139.38828   (120,240]    Typical  [ 71.1,176)
## 926  237.22950   (120,240]    Typical  [229.4,553]
## 927  200.02150   (120,240]    Typical  [175.9,229)
## 928  154.36196   (120,240]    Typical  [ 71.1,176)
## 929  114.63757     (0,120]      Short  [ 71.1,176)
## 930  143.64739   (120,240]    Typical  [ 71.1,176)
## 931  170.43153   (120,240]    Typical  [ 71.1,176)
## 932  184.27572   (120,240]    Typical  [175.9,229)
## 933  163.45071   (120,240]    Typical  [ 71.1,176)
## 934  119.28242     (0,120]      Short  [ 71.1,176)
## 935  251.29183 (240,6e+03]       Long  [229.4,553]
## 936  268.23237 (240,6e+03]       Long  [229.4,553]
## 937  208.07840   (120,240]    Typical  [175.9,229)
## 938  117.76182     (0,120]      Short  [ 71.1,176)
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## 939  288.14379 (240,6e+03]       Long  [229.4,553]
## 940  184.12087   (120,240]     Typical  [175.9,229)
## 941  273.21610 (240,6e+03]       Long  [229.4,553]
## 942  173.74358   (120,240]     Typical  [ 71.1,176)
## 943  294.53185 (240,6e+03]       Long  [229.4,553]
## 944  162.67324   (120,240]     Typical  [ 71.1,176)
## 945  178.82921   (120,240]     Typical  [175.9,229)
## 946  173.16910   (120,240]     Typical  [ 71.1,176)
## 947  199.26533   (120,240]     Typical  [175.9,229)
## 948  151.56364   (120,240]     Typical  [ 71.1,176)
## 949  136.63202   (120,240]     Typical  [ 71.1,176)
## 950  213.04658   (120,240]     Typical  [175.9,229)
## 951  252.53684 (240,6e+03]       Long  [229.4,553]
## 952  269.38383 (240,6e+03]       Long  [229.4,553]
## 953  179.59968   (120,240]     Typical  [175.9,229)
## 954  223.36532   (120,240]     Typical  [175.9,229)
## 955  216.19198   (120,240]     Typical  [175.9,229)
## 956  202.40100   (120,240]     Typical  [175.9,229)
## 957  146.09223   (120,240]     Typical  [ 71.1,176)
## 958  336.51301 (240,6e+03]       Long  [229.4,553]
## 959  195.27874   (120,240]     Typical  [175.9,229)
## 960  233.94357   (120,240]     Typical  [229.4,553]
## 961  212.42618   (120,240]     Typical  [175.9,229)
## 962  155.92686   (120,240]     Typical  [ 71.1,176)
## 963  174.80803   (120,240]     Typical  [ 71.1,176)
## 964  145.07181   (120,240]     Typical  [ 71.1,176)
## 965  194.09438   (120,240]     Typical  [175.9,229)
## 966  226.61295   (120,240]     Typical  [175.9,229)
## 967  196.90783   (120,240]     Typical  [175.9,229)
## 968  143.72837   (120,240]     Typical  [ 71.1,176)
## 969  265.69340 (240,6e+03]       Long  [229.4,553]
## 970  220.75451   (120,240]     Typical  [175.9,229)
## 971  146.46039   (120,240]     Typical  [ 71.1,176)
## 972  161.33866   (120,240]     Typical  [ 71.1,176)
## 973  211.89505   (120,240]     Typical  [175.9,229)
## 974  132.55600   (120,240]     Typical  [ 71.1,176)
## 975  280.61288 (240,6e+03]       Long  [229.4,553]
## 976  248.30669 (240,6e+03]       Long  [229.4,553]
## 977  137.29870   (120,240]     Typical  [ 71.1,176)
## 978  251.23513 (240,6e+03]       Long  [229.4,553]
## 979  139.47438   (120,240]     Typical  [ 71.1,176)
## 980  180.87246   (120,240]     Typical  [175.9,229)
## 981  139.05363   (120,240]     Typical  [ 71.1,176)
## 982   75.71085     (0,120]       Short  [ 71.1,176)
## 983   86.62313     (0,120]       Short  [ 71.1,176)
## 984  291.22583 (240,6e+03]       Long  [229.4,553]
## 985  158.42044   (120,240]     Typical  [ 71.1,176)
## 986  180.75387   (120,240]     Typical  [175.9,229)
## 987  190.29488   (120,240]     Typical  [175.9,229)
## 988  169.67635   (120,240]     Typical  [ 71.1,176)
## 989  153.69116   (120,240]     Typical  [ 71.1,176)
## 990  315.51537 (240,6e+03]       Long  [229.4,553]
## 991  230.99186   (120,240]     Typical  [229.4,553]
## 992  144.04861   (120,240]     Typical  [ 71.1,176)
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## 993  195.54717  (120,240]     Typical  [175.9,229)
## 994  171.82844  (120,240]     Typical  [ 71.1,176)
## 995  193.53273  (120,240]     Typical  [175.9,229)
## 996  186.12667  (120,240]     Typical  [175.9,229)
## 997  236.52760  (120,240]     Typical  [229.4,553]
## 998  252.06886  (240,6e+03]    Long     [229.4,553]
## 999  235.46826  (120,240]     Typical  [229.4,553]
## 1000 205.23444  (120,240]     Typical  [175.9,229)
## 1001 195.04045  (120,240]     Typical  [175.9,229)
## 1002 258.01538  (240,6e+03]    Long     [229.4,553]
## 1003 247.87507  (240,6e+03]    Long     [229.4,553]
## 1004 194.83487  (120,240]     Typical  [175.9,229)
## 1005 175.60999  (120,240]     Typical  [ 71.1,176)
## 1006 208.43949  (120,240]     Typical  [175.9,229)
## 1007 191.48550  (120,240]     Typical  [175.9,229)
## 1008 221.68319  (120,240]     Typical  [175.9,229)
## 1009 206.17666  (120,240]     Typical  [175.9,229)
## 1010 200.91212  (120,240]     Typical  [175.9,229)
## 1011 180.04173  (120,240]     Typical  [175.9,229)
## 1012 346.89339  (240,6e+03]    Long     [229.4,553]
## 1013 195.38595  (120,240]     Typical  [175.9,229)
## 1014 253.15122  (240,6e+03]    Long     [229.4,553]
## 1015 187.57403  (120,240]     Typical  [175.9,229)
## 1016 366.20832  (240,6e+03]    Long     [229.4,553]
## 1017 235.04904  (120,240]     Typical  [229.4,553]
## 1018 330.15195  (240,6e+03]    Long     [229.4,553]
## 1019 166.30317  (120,240]     Typical  [ 71.1,176)
## 1020 145.69703  (120,240]     Typical  [ 71.1,176)
## 1021 173.86194  (120,240]     Typical  [ 71.1,176)
## 1022 151.19241  (120,240]     Typical  [ 71.1,176)
## 1023 340.23631  (240,6e+03]    Long     [229.4,553]
## 1024 205.02681  (120,240]     Typical  [175.9,229)
## 1025 209.65892  (120,240]     Typical  [175.9,229)
## 1026 262.27684  (240,6e+03]    Long     [229.4,553]
## 1027 227.74056  (120,240]     Typical  [175.9,229)
## 1028 287.59264  (240,6e+03]    Long     [229.4,553]
## 1029 176.97458  (120,240]     Typical  [175.9,229)
## 1030 173.29702  (120,240]     Typical  [ 71.1,176)
## 1031 124.89497  (120,240]     Typical  [ 71.1,176)
## 1032 277.22099  (240,6e+03]    Long     [229.4,553]
## 1033 233.27685  (120,240]     Typical  [229.4,553]
## 1034 341.99011  (240,6e+03]    Long     [229.4,553]
## 1035 219.03052  (120,240]     Typical  [175.9,229)
## 1036 190.92904  (120,240]     Typical  [175.9,229)
## 1037 257.48832  (240,6e+03]    Long     [229.4,553]
## 1038 253.97919  (240,6e+03]    Long     [229.4,553]
## 1039 131.13268  (120,240]     Typical  [ 71.1,176)
## 1040 127.66532  (120,240]     Typical  [ 71.1,176)
## 1041 168.14151  (120,240]     Typical  [ 71.1,176)
## 1042 302.21802  (240,6e+03]    Long     [229.4,553]
## 1043 230.50322  (120,240]     Typical  [229.4,553]
## 1044 162.68361  (120,240]     Typical  [ 71.1,176)
## 1045 174.25731  (120,240]     Typical  [ 71.1,176)
## 1046 221.93490  (120,240]     Typical  [175.9,229)
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## 1047 213.99501   (120,240]        Typical   [175.9,229)
## 1048 276.33302 (240,6e+03]           Long   [229.4,553]
## 1049 141.77738   (120,240]        Typical   [ 71.1,176)
## 1050 166.21119   (120,240]        Typical   [ 71.1,176)
## 1051 130.15834   (120,240]        Typical   [ 71.1,176)
## 1052 177.20781   (120,240]        Typical   [175.9,229)
## 1053 275.21580 (240,6e+03]           Long   [229.4,553]
## 1054 236.70205   (120,240]        Typical   [229.4,553]
## 1055 203.85522   (120,240]        Typical   [175.9,229)
## 1056 119.62121     (0,120]          Short   [ 71.1,176)
## 1057 253.77592 (240,6e+03]           Long   [229.4,553]
## 1058 186.38980   (120,240]        Typical   [175.9,229)
## 1059 189.93691   (120,240]        Typical   [175.9,229)
## 1060 172.67240   (120,240]        Typical   [ 71.1,176)
## 1061 159.95986   (120,240]        Typical   [ 71.1,176)
## 1062 187.13311   (120,240]        Typical   [175.9,229)
## 1063 161.50625   (120,240]        Typical   [ 71.1,176)
## 1064 336.57812 (240,6e+03]           Long   [229.4,553]
## 1065 158.73366   (120,240]        Typical   [ 71.1,176)
## 1066 191.68816   (120,240]        Typical   [175.9,229)
## 1067 271.81102 (240,6e+03]           Long   [229.4,553]
## 1068 104.74461     (0,120]          Short   [ 71.1,176)
## 1069 159.64553   (120,240]        Typical   [ 71.1,176)
## 1070 204.64395   (120,240]        Typical   [175.9,229)
## 1071 274.76553 (240,6e+03]           Long   [229.4,553]
## 1072 197.59481   (120,240]        Typical   [175.9,229)
## 1073 306.65079 (240,6e+03]           Long   [229.4,553]
## 1074 275.43888 (240,6e+03]           Long   [229.4,553]
## 1075 173.42392   (120,240]        Typical   [ 71.1,176)
## 1076 320.77826 (240,6e+03]           Long   [229.4,553]
## 1077 222.19811   (120,240]        Typical   [175.9,229)
## 1078 139.00938   (120,240]        Typical   [ 71.1,176)
## 1079 155.28953   (120,240]        Typical   [ 71.1,176)
## 1080 255.55865 (240,6e+03]           Long   [229.4,553]
## 1081 160.80712   (120,240]        Typical   [ 71.1,176)
## 1082 228.27290   (120,240]        Typical   [175.9,229)
## 1083 177.18981   (120,240]        Typical   [175.9,229)
## 1084 142.41064   (120,240]        Typical   [ 71.1,176)
## 1085 242.26604 (240,6e+03]           Long   [229.4,553]
## 1086 200.34248   (120,240]        Typical   [175.9,229)
## 1087 208.14240   (120,240]        Typical   [175.9,229)
## 1088 258.28861 (240,6e+03]           Long   [229.4,553]
## 1089 251.47026 (240,6e+03]           Long   [229.4,553]
## 1090 294.13561 (240,6e+03]           Long   [229.4,553]
## 1091 240.37522 (240,6e+03]           Long   [229.4,553]
## 1092 257.74551 (240,6e+03]           Long   [229.4,553]
## 1093 213.04810   (120,240]        Typical   [175.9,229)
## 1094 245.97573 (240,6e+03]           Long   [229.4,553]
## 1095 140.63620   (120,240]        Typical   [ 71.1,176)
## 1096 251.03749 (240,6e+03]           Long   [229.4,553]
## 1097 268.74072 (240,6e+03]           Long   [229.4,553]
## 1098 129.69214   (120,240]        Typical   [ 71.1,176)
## 1099 153.20918   (120,240]        Typical   [ 71.1,176)
## 1100 275.96582 (240,6e+03]           Long   [229.4,553]
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## 1101 149.01298   (120,240]     Typical   [ 71.1,176)
## 1102 194.56342   (120,240]     Typical   [175.9,229)
## 1103 259.20397 (240,6e+03]        Long   [229.4,553]
## 1104 189.55418   (120,240]     Typical   [175.9,229)
## 1105 214.89857   (120,240]     Typical   [175.9,229)
## 1106 174.38110   (120,240]     Typical   [ 71.1,176)
## 1107 245.71240 (240,6e+03]        Long   [229.4,553]
## 1108 263.82791 (240,6e+03]        Long   [229.4,553]
## 1109 258.52815 (240,6e+03]        Long   [229.4,553]
## 1110 283.20591 (240,6e+03]        Long   [229.4,553]
## 1111 149.12372   (120,240]     Typical   [ 71.1,176)
## 1112 208.67128   (120,240]     Typical   [175.9,229)
## 1113 406.62765 (240,6e+03]        Long   [229.4,553]
## 1114 309.31984 (240,6e+03]        Long   [229.4,553]
## 1115 205.35126   (120,240]     Typical   [175.9,229)
## 1116 144.80935   (120,240]     Typical   [ 71.1,176)
## 1117 188.24171   (120,240]     Typical   [175.9,229)
## 1118 189.41339   (120,240]     Typical   [175.9,229)
## 1119 207.00102   (120,240]     Typical   [175.9,229)
## 1120 167.24721   (120,240]     Typical   [ 71.1,176)
## 1121 199.61253   (120,240]     Typical   [175.9,229)
## 1122 202.12391   (120,240]     Typical   [175.9,229)
## 1123 154.69263   (120,240]     Typical   [ 71.1,176)
## 1124 264.55681 (240,6e+03]        Long   [229.4,553]
## 1125 159.55856   (120,240]     Typical   [ 71.1,176)
## 1126 162.72165   (120,240]     Typical   [ 71.1,176)
## 1127 148.27805   (120,240]     Typical   [ 71.1,176)
## 1128 203.10998   (120,240]     Typical   [175.9,229)
## 1129 165.40499   (120,240]     Typical   [ 71.1,176)
## 1130 205.87431   (120,240]     Typical   [175.9,229)
## 1131 235.28909   (120,240]     Typical   [229.4,553]
## 1132 137.15428   (120,240]     Typical   [ 71.1,176)
## 1133  97.35392     (0,120]       Short   [ 71.1,176)
## 1134 172.96353   (120,240]     Typical   [ 71.1,176)
## 1135 226.06707   (120,240]     Typical   [175.9,229)
## 1136 128.78371   (120,240]     Typical   [ 71.1,176)
## 1137 300.28458 (240,6e+03]        Long   [229.4,553]
## 1138 251.12738 (240,6e+03]        Long   [229.4,553]
## 1139 263.88055 (240,6e+03]        Long   [229.4,553]
## 1140 195.92947   (120,240]     Typical   [175.9,229)
## 1141 132.20802   (120,240]     Typical   [ 71.1,176)
## 1142 177.08456   (120,240]     Typical   [175.9,229)
## 1143 258.55769 (240,6e+03]        Long   [229.4,553]
## 1144 206.36365   (120,240]     Typical   [175.9,229)
## 1145 213.96173   (120,240]     Typical   [175.9,229)
## 1146 216.98967   (120,240]     Typical   [175.9,229)
## 1147 286.87341 (240,6e+03]        Long   [229.4,553]
## 1148 241.68552 (240,6e+03]        Long   [229.4,553]
## 1149 227.56664   (120,240]     Typical   [175.9,229)
## 1150 270.59234 (240,6e+03]        Long   [229.4,553]
## 1151 298.25306 (240,6e+03]        Long   [229.4,553]
## 1152 235.29787   (120,240]     Typical   [229.4,553]
## 1153 230.19274   (120,240]     Typical   [229.4,553]
## 1154 291.30017 (240,6e+03]        Long   [229.4,553]
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## 1155 192.11528   (120,240]       Typical   [175.9,229)
## 1156 268.31777 (240,6e+03]          Long   [229.4,553]
## 1157 179.02173   (120,240]       Typical   [175.9,229)
## 1158 108.18440      (0,120]         Short   [ 71.1,176)
## 1159 136.92389   (120,240]       Typical   [ 71.1,176)
## 1160 296.10152 (240,6e+03]          Long   [229.4,553]
## 1161 254.33752 (240,6e+03]          Long   [229.4,553]
## 1162 247.89244 (240,6e+03]          Long   [229.4,553]
## 1163 127.81836   (120,240]       Typical   [ 71.1,176)
## 1164 249.59138 (240,6e+03]          Long   [229.4,553]
## 1165 141.82116   (120,240]       Typical   [ 71.1,176)
## 1166 326.73333 (240,6e+03]          Long   [229.4,553]
## 1167 169.18014   (120,240]       Typical   [ 71.1,176)
## 1168 197.70144   (120,240]       Typical   [175.9,229)
## 1169 181.26917   (120,240]       Typical   [175.9,229)
## 1170 134.58703   (120,240]       Typical   [ 71.1,176)
## 1171 202.29811   (120,240]       Typical   [175.9,229)
## 1172 201.64854   (120,240]       Typical   [175.9,229)
## 1173 248.79355 (240,6e+03]          Long   [229.4,553]
## 1174 267.01038 (240,6e+03]          Long   [229.4,553]
## 1175 317.61743 (240,6e+03]          Long   [229.4,553]
## 1176 181.42790   (120,240]       Typical   [175.9,229)
## 1177 186.74602   (120,240]       Typical   [175.9,229)
## 1178 245.90900 (240,6e+03]          Long   [229.4,553]
## 1179 302.28152 (240,6e+03]          Long   [229.4,553]
## 1180 181.61821   (120,240]       Typical   [175.9,229)
## 1181 184.93687   (120,240]       Typical   [175.9,229)
## 1182 239.81719   (120,240]       Typical   [229.4,553]
## 1183 259.05495 (240,6e+03]          Long   [229.4,553]
## 1184 151.36617   (120,240]       Typical   [ 71.1,176)
## 1185 258.17337 (240,6e+03]          Long   [229.4,553]
## 1186 213.58318   (120,240]       Typical   [175.9,229)
## 1187 287.33548 (240,6e+03]          Long   [229.4,553]
## 1188 278.76871 (240,6e+03]          Long   [229.4,553]
## 1189 164.80183   (120,240]       Typical   [ 71.1,176)
## 1190 140.97227   (120,240]       Typical   [ 71.1,176)
## 1191 178.91144   (120,240]       Typical   [175.9,229)
## 1192 376.66895 (240,6e+03]          Long   [229.4,553]
## 1193 144.51025   (120,240]       Typical   [ 71.1,176)
## 1194 231.91003   (120,240]       Typical   [229.4,553]
## 1195 191.94354   (120,240]       Typical   [175.9,229)
## 1196 167.56562   (120,240]       Typical   [ 71.1,176)
## 1197 342.81804 (240,6e+03]          Long   [229.4,553]
## 1198 259.93132 (240,6e+03]          Long   [229.4,553]
## 1199 217.05724   (120,240]       Typical   [175.9,229)
## 1200 198.56077   (120,240]       Typical   [175.9,229)
## 1201 125.08757   (120,240]       Typical   [ 71.1,176)
## 1202 190.62941   (120,240]       Typical   [175.9,229)
## 1203 248.86522 (240,6e+03]          Long   [229.4,553]
## 1204  89.74464      (0,120]         Short   [ 71.1,176)
## 1205 257.05807 (240,6e+03]          Long   [229.4,553]
## 1206 269.93069 (240,6e+03]          Long   [229.4,553]
## 1207 235.19250   (120,240]       Typical   [229.4,553]
## 1208 201.53968   (120,240]       Typical   [175.9,229)
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## 1209 252.08697 (240,6e+03]      Long  [229.4,553]
## 1210 161.01519   (120,240]   Typical  [ 71.1,176)
## 1211 268.72088 (240,6e+03]      Long  [229.4,553]
## 1212 310.90835 (240,6e+03]      Long  [229.4,553]
## 1213 218.60562   (120,240]   Typical  [175.9,229)
## 1214 157.14231   (120,240]   Typical  [ 71.1,176)
## 1215 185.32655   (120,240]   Typical  [175.9,229)
## 1216 142.34041   (120,240]   Typical  [ 71.1,176)
## 1217 168.47559   (120,240]   Typical  [ 71.1,176)
## 1218 168.73622   (120,240]   Typical  [ 71.1,176)
## 1219 161.79290   (120,240]   Typical  [ 71.1,176)
## 1220 162.96771   (120,240]   Typical  [ 71.1,176)
## 1221 225.27005   (120,240]   Typical  [175.9,229)
## 1222  88.04416     (0,120]     Short  [ 71.1,176)
## 1223 197.30019   (120,240]   Typical  [175.9,229)
## 1224 153.16018   (120,240]   Typical  [ 71.1,176)
## 1225 212.14883   (120,240]   Typical  [175.9,229)
## 1226 188.51472   (120,240]   Typical  [175.9,229)
## 1227 282.06012 (240,6e+03]      Long  [229.4,553]
## 1228 173.74741   (120,240]   Typical  [ 71.1,176)
## 1229 263.21292 (240,6e+03]      Long  [229.4,553]
## 1230 184.59311   (120,240]   Typical  [175.9,229)
## 1231 198.71415   (120,240]   Typical  [175.9,229)
## 1232 197.64896   (120,240]   Typical  [175.9,229)
## 1233 152.94510   (120,240]   Typical  [ 71.1,176)
## 1234 155.17289   (120,240]   Typical  [ 71.1,176)
## 1235 191.59394   (120,240]   Typical  [175.9,229)
## 1236 140.53449   (120,240]   Typical  [ 71.1,176)
## 1237 178.18524   (120,240]   Typical  [175.9,229)
## 1238 135.65539   (120,240]   Typical  [ 71.1,176)
## 1239 111.22610     (0,120]     Short  [ 71.1,176)
## 1240 225.24626   (120,240]   Typical  [175.9,229)
## 1241 169.47087   (120,240]   Typical  [ 71.1,176)
## 1242 324.50598 (240,6e+03]      Long  [229.4,553]
## 1243 242.30057 (240,6e+03]      Long  [229.4,553]
## 1244 281.57838 (240,6e+03]      Long  [229.4,553]
## 1245 268.33336 (240,6e+03]      Long  [229.4,553]
## 1246 219.08000   (120,240]   Typical  [175.9,229)
## 1247 174.80914   (120,240]   Typical  [ 71.1,176)
## 1248 230.66108   (120,240]   Typical  [229.4,553]
## 1249 170.82267   (120,240]   Typical  [ 71.1,176)
## 1250 226.97347   (120,240]   Typical  [175.9,229)
## 1251 172.86111   (120,240]   Typical  [ 71.1,176)
## 1252 247.99618 (240,6e+03]      Long  [229.4,553]
## 1253 225.84278   (120,240]   Typical  [175.9,229)
## 1254 181.98939   (120,240]   Typical  [175.9,229)
## 1255 337.04192 (240,6e+03]      Long  [229.4,553]
## 1256 234.73854   (120,240]   Typical  [229.4,553]
## 1257 294.26062 (240,6e+03]      Long  [229.4,553]
## 1258 215.20287   (120,240]   Typical  [175.9,229)
## 1259 325.19818 (240,6e+03]      Long  [229.4,553]
## 1260 250.85337 (240,6e+03]      Long  [229.4,553]
## 1261 200.73692   (120,240]   Typical  [175.9,229)
## 1262 162.63476   (120,240]   Typical  [ 71.1,176)
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## 1263  82.36344     (0,120]        Short   [ 71.1,176)
## 1264 220.26818   (120,240]       Typical  [175.9,229)
## 1265 216.27264   (120,240]       Typical  [175.9,229)
## 1266 205.37505   (120,240]       Typical  [175.9,229)
## 1267 281.00416 (240,6e+03]         Long   [229.4,553]
## 1268 181.55495   (120,240]       Typical  [175.9,229)
## 1269 219.54579   (120,240]       Typical  [175.9,229)
## 1270 297.83755 (240,6e+03]         Long   [229.4,553]
## 1271 233.49485   (120,240]       Typical  [229.4,553]
## 1272 344.80118 (240,6e+03]         Long   [229.4,553]
## 1273 265.76892 (240,6e+03]         Long   [229.4,553]
## 1274 166.19141   (120,240]       Typical  [ 71.1,176)
## 1275 213.71814   (120,240]       Typical  [175.9,229)
## 1276 228.82163   (120,240]       Typical  [175.9,229)
## 1277 201.40354   (120,240]       Typical  [175.9,229)
## 1278 223.60588   (120,240]       Typical  [175.9,229)
## 1279 319.06853 (240,6e+03]         Long   [229.4,553]
## 1280 177.18494   (120,240]       Typical  [175.9,229)
## 1281 162.05704   (120,240]       Typical  [ 71.1,176)
## 1282 195.95608   (120,240]       Typical  [175.9,229)
## 1283 143.24367   (120,240]       Typical  [ 71.1,176)
## 1284 217.33950   (120,240]       Typical  [175.9,229)
## 1285 253.82663 (240,6e+03]         Long   [229.4,553]
## 1286 244.79601 (240,6e+03]         Long   [229.4,553]
## 1287 206.36103   (120,240]       Typical  [175.9,229)
## 1288 326.85691 (240,6e+03]         Long   [229.4,553]
## 1289 202.04154   (120,240]       Typical  [175.9,229)
## 1290 132.69148   (120,240]       Typical  [ 71.1,176)
## 1291 268.11934 (240,6e+03]         Long   [229.4,553]
## 1292 191.54811   (120,240]       Typical  [175.9,229)
## 1293 241.07599 (240,6e+03]         Long   [229.4,553]
## 1294 224.31211   (120,240]       Typical  [175.9,229)
## 1295 176.43077   (120,240]       Typical  [175.9,229)
## 1296 225.13163   (120,240]       Typical  [175.9,229)
## 1297 153.41174   (120,240]       Typical  [ 71.1,176)
## 1298 137.40691   (120,240]       Typical  [ 71.1,176)
## 1299 191.20474   (120,240]       Typical  [175.9,229)
## 1300 222.13448   (120,240]       Typical  [175.9,229)
## 1301 238.47510   (120,240]       Typical  [229.4,553]
## 1302 176.32383   (120,240]       Typical  [175.9,229)
## 1303 278.95516 (240,6e+03]         Long   [229.4,553]
## 1304 119.94906     (0,120]        Short   [ 71.1,176)
## 1305 271.45010 (240,6e+03]         Long   [229.4,553]
## 1306 284.36380 (240,6e+03]         Long   [229.4,553]
## 1307 220.18311   (120,240]       Typical  [175.9,229)
## 1308 110.39004     (0,120]        Short   [ 71.1,176)
## 1309 137.53943   (120,240]       Typical  [ 71.1,176)
## 1310 150.42625   (120,240]       Typical  [ 71.1,176)
## 1311 168.11075   (120,240]       Typical  [ 71.1,176)
## 1312 242.55689 (240,6e+03]         Long   [229.4,553]
## 1313 270.44970 (240,6e+03]         Long   [229.4,553]
## 1314 136.68988   (120,240]       Typical  [ 71.1,176)
## 1315 237.69705   (120,240]       Typical  [229.4,553]
## 1316 240.58016 (240,6e+03]         Long   [229.4,553]
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146

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## 1317 173.20612   (120,240]      Typical  [ 71.1,176)
## 1318 287.55197 (240,6e+03]         Long  [229.4,553]
## 1319 279.68953 (240,6e+03]         Long  [229.4,553]
## 1320 150.48073   (120,240]      Typical  [ 71.1,176)
## 1321 346.60887 (240,6e+03]         Long  [229.4,553]
## 1322 297.83982 (240,6e+03]         Long  [229.4,553]
## 1323 245.33312 (240,6e+03]         Long  [229.4,553]
## 1324 257.26383 (240,6e+03]         Long  [229.4,553]
## 1325  95.74545     (0,120]        Short  [ 71.1,176)
## 1326 165.99290   (120,240]      Typical  [ 71.1,176)
## 1327 247.01631 (240,6e+03]         Long  [229.4,553]
## 1328 410.21182 (240,6e+03]         Long  [229.4,553]
## 1329 214.51695   (120,240]      Typical  [175.9,229)
## 1330 234.32897   (120,240]      Typical  [229.4,553]
## 1331 181.49942   (120,240]      Typical  [175.9,229)
## 1332 138.80714   (120,240]      Typical  [ 71.1,176)
## 1333 166.02978   (120,240]      Typical  [ 71.1,176)
## 1334 235.87636   (120,240]      Typical  [229.4,553]
## 1335 204.39501   (120,240]      Typical  [175.9,229)
## 1336 204.13425   (120,240]      Typical  [175.9,229)
## 1337 151.54439   (120,240]      Typical  [ 71.1,176)
## 1338 365.17136 (240,6e+03]         Long  [229.4,553]
## 1339 236.78604   (120,240]      Typical  [229.4,553]
## 1340 247.57930 (240,6e+03]         Long  [229.4,553]
## 1341 121.16548   (120,240]      Typical  [ 71.1,176)
## 1342 117.38640     (0,120]        Short  [ 71.1,176)
## 1343 199.34276   (120,240]      Typical  [175.9,229)
## 1344 139.48154   (120,240]      Typical  [ 71.1,176)
## 1345 172.38959   (120,240]      Typical  [ 71.1,176)
## 1346 281.20645 (240,6e+03]         Long  [229.4,553]
## 1347 198.77041   (120,240]      Typical  [175.9,229)
## 1348 187.21792   (120,240]      Typical  [175.9,229)
## 1349 134.43589   (120,240]      Typical  [ 71.1,176)
## 1350 218.90629   (120,240]      Typical  [175.9,229)
## 1351 249.56716 (240,6e+03]         Long  [229.4,553]
## 1352 217.95785   (120,240]      Typical  [175.9,229)
## 1353 204.78049   (120,240]      Typical  [175.9,229)
## 1354 208.97158   (120,240]      Typical  [175.9,229)
## 1355 244.29577 (240,6e+03]         Long  [229.4,553]
## 1356 215.40068   (120,240]      Typical  [175.9,229)
## 1357 133.32842   (120,240]      Typical  [ 71.1,176)
## 1358 192.63510   (120,240]      Typical  [175.9,229)
## 1359 149.39482   (120,240]      Typical  [ 71.1,176)
## 1360 217.67661   (120,240]      Typical  [175.9,229)
## 1361 162.06606   (120,240]      Typical  [ 71.1,176)
## 1362 188.97699   (120,240]      Typical  [175.9,229)
## 1363 105.61813     (0,120]        Short  [ 71.1,176)
## 1364 154.25857   (120,240]      Typical  [ 71.1,176)
## 1365 309.21265 (240,6e+03]         Long  [229.4,553]
## 1366 242.34164 (240,6e+03]         Long  [229.4,553]
## 1367 197.32569   (120,240]      Typical  [175.9,229)
## 1368 186.00817   (120,240]      Typical  [175.9,229)
## 1369 177.61799   (120,240]      Typical  [175.9,229)
## 1370 180.97903   (120,240]      Typical  [175.9,229)
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## 1371 208.15080  (120,240]      Typical   [175.9,229)
## 1372 104.29312    (0,120]      Short    [ 71.1,176)
## 1373 160.56055  (120,240]      Typical   [ 71.1,176)
## 1374 229.26818  (120,240]      Typical   [175.9,229)
## 1375 218.94052  (120,240]      Typical   [175.9,229)
## 1376 227.90145  (120,240]      Typical   [175.9,229)
## 1377 178.17597  (120,240]      Typical   [175.9,229)
## 1378 274.09850 (240,6e+03]       Long    [229.4,553]
## 1379 179.36117  (120,240]      Typical   [175.9,229)
## 1380 172.12002  (120,240]      Typical   [ 71.1,176)
## 1381 167.03669  (120,240]      Typical   [ 71.1,176)
## 1382 126.94100  (120,240]      Typical   [ 71.1,176)
## 1383 236.86476  (120,240]      Typical   [229.4,553]
## 1384 141.87992  (120,240]      Typical   [ 71.1,176)
## 1385 160.57057  (120,240]      Typical   [ 71.1,176)
## 1386 176.43529  (120,240]      Typical   [175.9,229)
## 1387 188.20799  (120,240]      Typical   [175.9,229)
## 1388 212.00426  (120,240]      Typical   [175.9,229)
## 1389 237.20965  (120,240]      Typical   [229.4,553]
## 1390 170.04375  (120,240]      Typical   [ 71.1,176)
## 1391 330.01147 (240,6e+03]       Long    [229.4,553]
## 1392 263.52543 (240,6e+03]       Long    [229.4,553]
## 1393 217.38756  (120,240]      Typical   [175.9,229)
## 1394 249.95992 (240,6e+03]       Long    [229.4,553]
## 1395 232.98916  (120,240]      Typical   [229.4,553]
## 1396 117.73129    (0,120]      Short    [ 71.1,176)
## 1397 238.04966  (120,240]      Typical   [229.4,553]
## 1398 319.21831 (240,6e+03]       Long    [229.4,553]
## 1399 130.94129  (120,240]      Typical   [ 71.1,176)
## 1400 162.51274  (120,240]      Typical   [ 71.1,176)
## 1401 142.66684  (120,240]      Typical   [ 71.1,176)
## 1402 134.98985  (120,240]      Typical   [ 71.1,176)
## 1403 106.99356    (0,120]      Short    [ 71.1,176)
## 1404 172.74564  (120,240]      Typical   [ 71.1,176)
## 1405 158.67180  (120,240]      Typical   [ 71.1,176)
## 1406 144.54975  (120,240]      Typical   [ 71.1,176)
## 1407 192.67150  (120,240]      Typical   [175.9,229)
## 1408 173.41725  (120,240]      Typical   [ 71.1,176)
## 1409 209.92558  (120,240]      Typical   [175.9,229)
## 1410 145.10303  (120,240]      Typical   [ 71.1,176)
## 1411  94.61582    (0,120]      Short    [ 71.1,176)
## 1412 231.29448  (120,240]      Typical   [229.4,553]
## 1413 225.70013  (120,240]      Typical   [175.9,229)
## 1414 268.98951 (240,6e+03]       Long    [229.4,553]
## 1415 148.50347  (120,240]      Typical   [ 71.1,176)
## 1416 150.85342  (120,240]      Typical   [ 71.1,176)
## 1417 233.64210  (120,240]      Typical   [229.4,553]
## 1418 139.74646  (120,240]      Typical   [ 71.1,176)
## 1419 199.46726  (120,240]      Typical   [175.9,229)
## 1420 210.55758  (120,240]      Typical   [175.9,229)
## 1421 106.54327    (0,120]      Short    [ 71.1,176)
## 1422 125.45907  (120,240]      Typical   [ 71.1,176)
## 1423 154.24362  (120,240]      Typical   [ 71.1,176)
## 1424 114.92884    (0,120]      Short    [ 71.1,176)
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## 1425 201.69034   (120,240]        Typical  [175.9,229)
## 1426 255.68184 (240,6e+03]           Long  [229.4,553]
## 1427 236.88415   (120,240]        Typical  [229.4,553]
## 1428 162.13774   (120,240]        Typical  [ 71.1,176)
## 1429 178.90974   (120,240]        Typical  [175.9,229)
## 1430 208.87805   (120,240]        Typical  [175.9,229)
## 1431 150.91410   (120,240]        Typical  [ 71.1,176)
## 1432 121.96025   (120,240]        Typical  [ 71.1,176)
## 1433 320.60507 (240,6e+03]           Long  [229.4,553]
## 1434 126.61799   (120,240]        Typical  [ 71.1,176)
## 1435 256.97887 (240,6e+03]           Long  [229.4,553]
## 1436 153.33452   (120,240]        Typical  [ 71.1,176)
## 1437 193.73339   (120,240]        Typical  [175.9,229)
## 1438 163.16419   (120,240]        Typical  [ 71.1,176)
## 1439 179.25447   (120,240]        Typical  [175.9,229)
## 1440 213.44322   (120,240]        Typical  [175.9,229)
## 1441 185.79533   (120,240]        Typical  [175.9,229)
## 1442 286.45476 (240,6e+03]           Long  [229.4,553]
## 1443 254.30458 (240,6e+03]           Long  [229.4,553]
## 1444 123.63739   (120,240]        Typical  [ 71.1,176)
## 1445 299.10276 (240,6e+03]           Long  [229.4,553]
## 1446 188.70781   (120,240]        Typical  [175.9,229)
## 1447 168.21309   (120,240]        Typical  [ 71.1,176)
## 1448 196.84939   (120,240]        Typical  [175.9,229)
## 1449 183.02770   (120,240]        Typical  [175.9,229)
## 1450 372.12019 (240,6e+03]           Long  [229.4,553]
## 1451 228.94330   (120,240]        Typical  [175.9,229)
## 1452 149.74850   (120,240]        Typical  [ 71.1,176)
## 1453 197.68833   (120,240]        Typical  [175.9,229)
## 1454 223.95652   (120,240]        Typical  [175.9,229)
## 1455 158.19249   (120,240]        Typical  [ 71.1,176)
## 1456 117.92670     (0,120]          Short  [ 71.1,176)
## 1457 166.64378   (120,240]        Typical  [ 71.1,176)
## 1458 181.23628   (120,240]        Typical  [175.9,229)
## 1459 190.47502   (120,240]        Typical  [175.9,229)
## 1460 263.21011 (240,6e+03]           Long  [229.4,553]
## 1461 278.44730 (240,6e+03]           Long  [229.4,553]
## 1462 272.41863 (240,6e+03]           Long  [229.4,553]
## 1463 227.49249   (120,240]        Typical  [175.9,229)
## 1464  94.98739     (0,120]          Short  [ 71.1,176)
## 1465 175.63575   (120,240]        Typical  [ 71.1,176)
## 1466 165.96646   (120,240]        Typical  [ 71.1,176)
## 1467 303.70593 (240,6e+03]           Long  [229.4,553]
## 1468 201.37655   (120,240]        Typical  [175.9,229)
## 1469 208.83188   (120,240]        Typical  [175.9,229)
## 1470 335.97867 (240,6e+03]           Long  [229.4,553]
## 1471 180.31873   (120,240]        Typical  [175.9,229)
## 1472 157.85280   (120,240]        Typical  [ 71.1,176)
## 1473 121.21731   (120,240]        Typical  [ 71.1,176)
## 1474 323.69016 (240,6e+03]           Long  [229.4,553]
## 1475 252.06552 (240,6e+03]           Long  [229.4,553]
## 1476 267.86782 (240,6e+03]           Long  [229.4,553]
## 1477 231.58742   (120,240]        Typical  [229.4,553]
## 1478 196.15398   (120,240]        Typical  [175.9,229)
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## 1479 210.61793  (120,240]          Typical  [175.9,229)
## 1480 153.34611  (120,240]          Typical  [ 71.1,176)
## 1481 181.99790  (120,240]          Typical  [175.9,229)
## 1482 188.81604  (120,240]          Typical  [175.9,229)
## 1483 272.39333 (240,6e+03]            Long  [229.4,553]
## 1484 420.09739 (240,6e+03]            Long  [229.4,553]
## 1485 138.56658  (120,240]          Typical  [ 71.1,176)
## 1486 287.20915 (240,6e+03]            Long  [229.4,553]
## 1487 178.67917  (120,240]          Typical  [175.9,229)
## 1488 258.38203 (240,6e+03]            Long  [229.4,553]
## 1489 123.20898  (120,240]          Typical  [ 71.1,176)
## 1490 282.95267 (240,6e+03]            Long  [229.4,553]
## 1491 211.16645  (120,240]          Typical  [175.9,229)
## 1492 213.23655  (120,240]          Typical  [175.9,229)
## 1493 155.05417  (120,240]          Typical  [ 71.1,176)
## 1494 268.32987 (240,6e+03]            Long  [229.4,553]
## 1495 219.24507  (120,240]          Typical  [175.9,229)
## 1496 200.12335  (120,240]          Typical  [175.9,229)
## 1497 241.22124 (240,6e+03]            Long  [229.4,553]
## 1498 154.15798  (120,240]          Typical  [ 71.1,176)
## 1499 249.18639 (240,6e+03]            Long  [229.4,553]
## 1500 226.69416  (120,240]          Typical  [175.9,229)
## 1501 197.68858  (120,240]          Typical  [175.9,229)
## 1502 193.94098  (120,240]          Typical  [175.9,229)
## 1503 263.45905 (240,6e+03]            Long  [229.4,553]
## 1504 105.42771    (0,120]           Short  [ 71.1,176)
## 1505 254.29395 (240,6e+03]            Long  [229.4,553]
## 1506 101.36535    (0,120]           Short  [ 71.1,176)
## 1507 274.76187 (240,6e+03]            Long  [229.4,553]
## 1508 267.15046 (240,6e+03]            Long  [229.4,553]
## 1509 213.00999  (120,240]          Typical  [175.9,229)
## 1510 155.70301  (120,240]          Typical  [ 71.1,176)
## 1511 215.02397  (120,240]          Typical  [175.9,229)
## 1512 145.42306  (120,240]          Typical  [ 71.1,176)
## 1513 126.32004  (120,240]          Typical  [ 71.1,176)
## 1514 205.33994  (120,240]          Typical  [175.9,229)
## 1515 190.37622  (120,240]          Typical  [175.9,229)
## 1516 204.51904  (120,240]          Typical  [175.9,229)
## 1517 132.45230  (120,240]          Typical  [ 71.1,176)
## 1518 189.40684  (120,240]          Typical  [175.9,229)
## 1519 237.90031  (120,240]          Typical  [229.4,553]
## 1520 246.82626 (240,6e+03]            Long  [229.4,553]
## 1521 167.73181  (120,240]          Typical  [ 71.1,176)
## 1522 192.63483  (120,240]          Typical  [175.9,229)
## 1523 216.13438  (120,240]          Typical  [175.9,229)
## 1524 169.90426  (120,240]          Typical  [ 71.1,176)
## 1525 119.96976    (0,120]           Short  [ 71.1,176)
## 1526 203.21283  (120,240]          Typical  [175.9,229)
## 1527 184.95395  (120,240]          Typical  [175.9,229)
## 1528 320.94698 (240,6e+03]            Long  [229.4,553]
## 1529 110.83928    (0,120]           Short  [ 71.1,176)
## 1530 102.16201    (0,120]           Short  [ 71.1,176)
## 1531 145.03330  (120,240]          Typical  [ 71.1,176)
## 1532 154.42942  (120,240]          Typical  [ 71.1,176)
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## 1533 191.44384    (120,240]           Typical  [175.9,229)
## 1534 195.13951    (120,240]           Typical  [175.9,229)
## 1535 114.85664      (0,120]            Short   [ 71.1,176)
## 1536 233.13367    (120,240]           Typical  [229.4,553]
## 1537 142.54636    (120,240]           Typical  [ 71.1,176)
## 1538 141.04216    (120,240]           Typical  [ 71.1,176)
## 1539 219.52421    (120,240]           Typical  [175.9,229)
## 1540 239.23116    (120,240]           Typical  [229.4,553]
## 1541 198.28346    (120,240]           Typical  [175.9,229)
## 1542 253.15897  (240,6e+03]             Long   [229.4,553]
## 1543 217.15288    (120,240]           Typical  [175.9,229)
## 1544 189.52027    (120,240]           Typical  [175.9,229)
## 1545 219.13465    (120,240]           Typical  [175.9,229)
## 1546 191.77918    (120,240]           Typical  [175.9,229)
## 1547 191.92601    (120,240]           Typical  [175.9,229)
## 1548 149.79752    (120,240]           Typical  [ 71.1,176)
## 1549 127.99073    (120,240]           Typical  [ 71.1,176)
## 1550 163.35398    (120,240]           Typical  [ 71.1,176)
## 1551 317.31643  (240,6e+03]             Long   [229.4,553]
## 1552 213.81575    (120,240]           Typical  [175.9,229)
## 1553 208.74131    (120,240]           Typical  [175.9,229)
## 1554 174.49920    (120,240]           Typical  [ 71.1,176)
## 1555 178.61197    (120,240]           Typical  [175.9,229)
## 1556 438.02551  (240,6e+03]             Long   [229.4,553]
## 1557 181.84627    (120,240]           Typical  [175.9,229)
## 1558 161.95246    (120,240]           Typical  [ 71.1,176)
## 1559 325.63984  (240,6e+03]             Long   [229.4,553]
## 1560 251.68675  (240,6e+03]             Long   [229.4,553]
## 1561 106.89696      (0,120]            Short   [ 71.1,176)
## 1562 205.92322    (120,240]           Typical  [175.9,229)
## 1563 154.02139    (120,240]           Typical  [ 71.1,176)
## 1564 246.61919  (240,6e+03]             Long   [229.4,553]
## 1565 205.31127    (120,240]           Typical  [175.9,229)
## 1566 226.25178    (120,240]           Typical  [175.9,229)
## 1567 240.21988  (240,6e+03]             Long   [229.4,553]
## 1568 264.42605  (240,6e+03]             Long   [229.4,553]
## 1569 159.36969    (120,240]           Typical  [ 71.1,176)
## 1570 160.37295    (120,240]           Typical  [ 71.1,176)
## 1571 229.28997    (120,240]           Typical  [175.9,229)
## 1572 194.10277    (120,240]           Typical  [175.9,229)
## 1573 195.39136    (120,240]           Typical  [175.9,229)
## 1574 192.24090    (120,240]           Typical  [175.9,229)
## 1575 236.25130    (120,240]           Typical  [229.4,553]
## 1576 230.09705    (120,240]           Typical  [229.4,553]
## 1577 148.04415    (120,240]           Typical  [ 71.1,176)
## 1578 260.80617  (240,6e+03]             Long   [229.4,553]
## 1579 214.78506    (120,240]           Typical  [175.9,229)
## 1580 412.18760  (240,6e+03]             Long   [229.4,553]
## 1581 363.65262  (240,6e+03]             Long   [229.4,553]
## 1582 233.42925    (120,240]           Typical  [229.4,553]
## 1583 236.70787    (120,240]           Typical  [229.4,553]
## 1584 327.09274  (240,6e+03]             Long   [229.4,553]
## 1585 227.02980    (120,240]           Typical  [175.9,229)
## 1586 132.62574    (120,240]           Typical  [ 71.1,176)
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## 1587 155.07831  (120,240]      Typical  [ 71.1,176)
## 1588 276.91434 (240,6e+03]        Long  [229.4,553]
## 1589 137.08523  (120,240]      Typical  [ 71.1,176)
## 1590 111.99945    (0,120]        Short  [ 71.1,176)
## 1591 249.79256 (240,6e+03]        Long  [229.4,553]
## 1592 154.33575  (120,240]      Typical  [ 71.1,176)
## 1593 209.50852  (120,240]      Typical  [175.9,229)
## 1594 113.71769    (0,120]        Short  [ 71.1,176)
## 1595 176.82460  (120,240]      Typical  [175.9,229)
## 1596 238.47982  (120,240]      Typical  [229.4,553]
## 1597 180.84944  (120,240]      Typical  [175.9,229)
## 1598 171.24733  (120,240]      Typical  [ 71.1,176)
## 1599 153.67474  (120,240]      Typical  [ 71.1,176)
## 1600 160.03079  (120,240]      Typical  [ 71.1,176)
## 1601 212.23504  (120,240]      Typical  [175.9,229)
## 1602 159.99338  (120,240]      Typical  [ 71.1,176)
## 1603 203.81500  (120,240]      Typical  [175.9,229)
## 1604 129.29941  (120,240]      Typical  [ 71.1,176)
## 1605 272.82140 (240,6e+03]        Long  [229.4,553]
## 1606 172.55721  (120,240]      Typical  [ 71.1,176)
## 1607 215.24159  (120,240]      Typical  [175.9,229)
## 1608 167.04832  (120,240]      Typical  [ 71.1,176)
## 1609 188.60921  (120,240]      Typical  [175.9,229)
## 1610 206.53884  (120,240]      Typical  [175.9,229)
## 1611 177.12357  (120,240]      Typical  [175.9,229)
## 1612 175.15852  (120,240]      Typical  [ 71.1,176)
## 1613 295.89427 (240,6e+03]        Long  [229.4,553]
## 1614 275.83804 (240,6e+03]        Long  [229.4,553]
## 1615 133.87805  (120,240]      Typical  [ 71.1,176)
## 1616 182.20298  (120,240]      Typical  [175.9,229)
## 1617 195.70567  (120,240]      Typical  [175.9,229)
## 1618 209.11702  (120,240]      Typical  [175.9,229)
## 1619 150.62954  (120,240]      Typical  [ 71.1,176)
## 1620 214.14211  (120,240]      Typical  [175.9,229)
## 1621 146.94775  (120,240]      Typical  [ 71.1,176)
## 1622 260.68903 (240,6e+03]        Long  [229.4,553]
## 1623  91.82478    (0,120]        Short  [ 71.1,176)
## 1624 185.90065  (120,240]      Typical  [175.9,229)
## 1625 214.82037  (120,240]      Typical  [175.9,229)
## 1626 357.08060 (240,6e+03]        Long  [229.4,553]
## 1627 125.19497  (120,240]      Typical  [ 71.1,176)
## 1628 341.81763 (240,6e+03]        Long  [229.4,553]
## 1629 188.69348  (120,240]      Typical  [175.9,229)
## 1630 169.59487  (120,240]      Typical  [ 71.1,176)
## 1631 191.84131  (120,240]      Typical  [175.9,229)
## 1632 208.49104  (120,240]      Typical  [175.9,229)
## 1633 218.63894  (120,240]      Typical  [175.9,229)
## 1634 229.35694  (120,240]      Typical  [229.4,553]
## 1635 173.60219  (120,240]      Typical  [ 71.1,176)
## 1636 245.95440 (240,6e+03]        Long  [229.4,553]
## 1637 191.31946  (120,240]      Typical  [175.9,229)
## 1638 135.11061  (120,240]      Typical  [ 71.1,176)
## 1639 238.46963  (120,240]      Typical  [229.4,553]
## 1640 271.34154 (240,6e+03]        Long  [229.4,553]
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## 1641 146.33434  (120,240]    Typical  [ 71.1,176)
## 1642 230.02320  (120,240]    Typical  [229.4,553]
## 1643 165.49986  (120,240]    Typical  [ 71.1,176)
## 1644 272.06248 (240,6e+03]      Long  [229.4,553]
## 1645 167.22057  (120,240]    Typical  [ 71.1,176)
## 1646 110.68418    (0,120]      Short  [ 71.1,176)
## 1647 206.27056  (120,240]    Typical  [175.9,229)
## 1648 140.55347  (120,240]    Typical  [ 71.1,176)
## 1649 283.25260 (240,6e+03]      Long  [229.4,553]
## 1650 335.92425 (240,6e+03]      Long  [229.4,553]
## 1651 180.25975  (120,240]    Typical  [175.9,229)
## 1652 283.17855 (240,6e+03]      Long  [229.4,553]
## 1653 265.92991 (240,6e+03]      Long  [229.4,553]
## 1654 181.58808  (120,240]    Typical  [175.9,229)
## 1655 177.67613  (120,240]    Typical  [175.9,229)
## 1656 456.43290 (240,6e+03]      Long  [229.4,553]
## 1657 136.09987  (120,240]    Typical  [ 71.1,176)
## 1658 240.71115 (240,6e+03]      Long  [229.4,553]
## 1659 233.48948  (120,240]    Typical  [229.4,553]
## 1660 104.09218    (0,120]      Short  [ 71.1,176)
## 1661 317.53252 (240,6e+03]      Long  [229.4,553]
## 1662 183.32972  (120,240]    Typical  [175.9,229)
## 1663 201.01073  (120,240]    Typical  [175.9,229)
## 1664 215.52589  (120,240]    Typical  [175.9,229)
## 1665 108.74517    (0,120]      Short  [ 71.1,176)
## 1666 273.99684 (240,6e+03]      Long  [229.4,553]
## 1667 155.41390  (120,240]    Typical  [ 71.1,176)
## 1668 311.51017 (240,6e+03]      Long  [229.4,553]
## 1669 289.81571 (240,6e+03]      Long  [229.4,553]
## 1670 218.10361  (120,240]    Typical  [175.9,229)
## 1671 207.09206  (120,240]    Typical  [175.9,229)
## 1672 133.06686  (120,240]    Typical  [ 71.1,176)
## 1673 146.75812  (120,240]    Typical  [ 71.1,176)
## 1674 102.35324    (0,120]      Short  [ 71.1,176)
## 1675 143.93794  (120,240]    Typical  [ 71.1,176)
## 1676 280.45648 (240,6e+03]      Long  [229.4,553]
## 1677 293.69779 (240,6e+03]      Long  [229.4,553]
## 1678 120.47429  (120,240]    Typical  [ 71.1,176)
## 1679  98.72865    (0,120]      Short  [ 71.1,176)
## 1680 290.08521 (240,6e+03]      Long  [229.4,553]
## 1681 161.45160  (120,240]    Typical  [ 71.1,176)
## 1682 183.31223  (120,240]    Typical  [175.9,229)
## 1683 305.84992 (240,6e+03]      Long  [229.4,553]
## 1684 162.76946  (120,240]    Typical  [ 71.1,176)
## 1685 283.27347 (240,6e+03]      Long  [229.4,553]
## 1686 170.81521  (120,240]    Typical  [ 71.1,176)
## 1687 195.51938  (120,240]    Typical  [175.9,229)
## 1688 243.64185 (240,6e+03]      Long  [229.4,553]
## 1689 179.19861  (120,240]    Typical  [175.9,229)
## 1690 170.60421  (120,240]    Typical  [ 71.1,176)
## 1691 199.39575  (120,240]    Typical  [175.9,229)
## 1692 273.82291 (240,6e+03]      Long  [229.4,553]
## 1693 105.45154    (0,120]      Short  [ 71.1,176)
## 1694 196.95482  (120,240]    Typical  [175.9,229)
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## 1695 140.97128   (120,240]       Typical   [ 71.1,176)
## 1696 290.91105 (240,6e+03]         Long   [229.4,553]
## 1697 144.79005   (120,240]       Typical   [ 71.1,176)
## 1698 161.25163   (120,240]       Typical   [ 71.1,176)
## 1699 259.54262 (240,6e+03]         Long   [229.4,553]
## 1700 171.40666   (120,240]       Typical   [ 71.1,176)
## 1701 160.56954   (120,240]       Typical   [ 71.1,176)
## 1702  82.20880     (0,120]        Short   [ 71.1,176)
## 1703 258.78231 (240,6e+03]         Long   [229.4,553]
## 1704 269.07880 (240,6e+03]         Long   [229.4,553]
## 1705 186.37187   (120,240]       Typical   [175.9,229)
## 1706 176.58578   (120,240]       Typical   [175.9,229)
## 1707 175.58143   (120,240]       Typical   [ 71.1,176)
## 1708 124.85932   (120,240]       Typical   [ 71.1,176)
## 1709 231.24489   (120,240]       Typical   [229.4,553]
## 1710 239.47038   (120,240]       Typical   [229.4,553]
## 1711 241.36187 (240,6e+03]         Long   [229.4,553]
## 1712 113.90151     (0,120]        Short   [ 71.1,176)
## 1713 176.35495   (120,240]       Typical   [175.9,229)
## 1714 447.81597 (240,6e+03]         Long   [229.4,553]
## 1715 216.34256   (120,240]       Typical   [175.9,229)
## 1716 229.49984   (120,240]       Typical   [229.4,553]
## 1717 307.28881 (240,6e+03]         Long   [229.4,553]
## 1718 151.81148   (120,240]       Typical   [ 71.1,176)
## 1719 290.95096 (240,6e+03]         Long   [229.4,553]
## 1720 240.26498 (240,6e+03]         Long   [229.4,553]
## 1721 222.27535   (120,240]       Typical   [175.9,229)
## 1722 378.22976 (240,6e+03]         Long   [229.4,553]
## 1723 236.68939   (120,240]       Typical   [229.4,553]
## 1724 202.66388   (120,240]       Typical   [175.9,229)
## 1725 177.74737   (120,240]       Typical   [175.9,229)
## 1726 124.76727   (120,240]       Typical   [ 71.1,176)
## 1727 326.34329 (240,6e+03]         Long   [229.4,553]
## 1728 176.48737   (120,240]       Typical   [175.9,229)
## 1729 117.46931     (0,120]        Short   [ 71.1,176)
## 1730 272.04175 (240,6e+03]         Long   [229.4,553]
## 1731 101.79151     (0,120]        Short   [ 71.1,176)
## 1732 156.99953   (120,240]       Typical   [ 71.1,176)
## 1733 105.57544     (0,120]        Short   [ 71.1,176)
## 1734 226.51019   (120,240]       Typical   [175.9,229)
## 1735 171.54776   (120,240]       Typical   [ 71.1,176)
## 1736 286.72646 (240,6e+03]         Long   [229.4,553]
## 1737 264.78826 (240,6e+03]         Long   [229.4,553]
## 1738 187.42310   (120,240]       Typical   [175.9,229)
## 1739 153.73923   (120,240]       Typical   [ 71.1,176)
## 1740 146.10141   (120,240]       Typical   [ 71.1,176)
## 1741 177.02788   (120,240]       Typical   [175.9,229)
## 1742 162.63135   (120,240]       Typical   [ 71.1,176)
## 1743 239.30941   (120,240]       Typical   [229.4,553]
## 1744 182.49694   (120,240]       Typical   [175.9,229)
## 1745 232.94330   (120,240]       Typical   [229.4,553]
## 1746 219.44040   (120,240]       Typical   [175.9,229)
## 1747 138.28282   (120,240]       Typical   [ 71.1,176)
## 1748 278.13201 (240,6e+03]         Long   [229.4,553]
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## 1749 226.83498  (120,240]          Typical  [175.9,229)
## 1750 154.15086  (120,240]          Typical  [ 71.1,176)
## 1751 194.84827  (120,240]          Typical  [175.9,229)
## 1752 217.12018  (120,240]          Typical  [175.9,229)
## 1753 239.92040  (120,240]          Typical  [229.4,553]
## 1754 132.34233  (120,240]          Typical  [ 71.1,176)
## 1755 165.53107  (120,240]          Typical  [ 71.1,176)
## 1756 211.09266  (120,240]          Typical  [175.9,229)
## 1757 282.10376 (240,6e+03]            Long  [229.4,553]
## 1758 213.70541  (120,240]          Typical  [175.9,229)
## 1759 140.99217  (120,240]          Typical  [ 71.1,176)
## 1760 194.23961  (120,240]          Typical  [175.9,229)
## 1761 207.34073  (120,240]          Typical  [175.9,229)
## 1762 153.20708  (120,240]          Typical  [ 71.1,176)
## 1763 175.12220  (120,240]          Typical  [ 71.1,176)
## 1764 149.02239  (120,240]          Typical  [ 71.1,176)
## 1765 264.73814 (240,6e+03]            Long  [229.4,553]
## 1766 234.21246  (120,240]          Typical  [229.4,553]
## 1767 287.64535 (240,6e+03]            Long  [229.4,553]
## 1768 218.52392  (120,240]          Typical  [175.9,229)
## 1769 183.05938  (120,240]          Typical  [175.9,229)
## 1770 115.49794    (0,120]           Short  [ 71.1,176)
## 1771 183.81746  (120,240]          Typical  [175.9,229)
## 1772 197.06331  (120,240]          Typical  [175.9,229)
## 1773 123.14129  (120,240]          Typical  [ 71.1,176)
## 1774 203.91741  (120,240]          Typical  [175.9,229)
## 1775 208.31188  (120,240]          Typical  [175.9,229)
## 1776 203.76340  (120,240]          Typical  [175.9,229)
## 1777 181.42072  (120,240]          Typical  [175.9,229)
## 1778 162.86767  (120,240]          Typical  [ 71.1,176)
## 1779 291.37726 (240,6e+03]            Long  [229.4,553]
## 1780 145.29825  (120,240]          Typical  [ 71.1,176)
## 1781 105.39447    (0,120]           Short  [ 71.1,176)
## 1782 135.88794  (120,240]          Typical  [ 71.1,176)
## 1783 248.42809 (240,6e+03]            Long  [229.4,553]
## 1784 277.40343 (240,6e+03]            Long  [229.4,553]
## 1785 225.25359  (120,240]          Typical  [175.9,229)
## 1786 159.66900  (120,240]          Typical  [ 71.1,176)
## 1787 253.37229 (240,6e+03]            Long  [229.4,553]
## 1788 180.04612  (120,240]          Typical  [175.9,229)
## 1789 293.83165 (240,6e+03]            Long  [229.4,553]
## 1790 180.29072  (120,240]          Typical  [175.9,229)
## 1791 188.26600  (120,240]          Typical  [175.9,229)
## 1792 242.52246 (240,6e+03]            Long  [229.4,553]
## 1793 127.15251  (120,240]          Typical  [ 71.1,176)
## 1794 125.10611  (120,240]          Typical  [ 71.1,176)
## 1795 133.80168  (120,240]          Typical  [ 71.1,176)
## 1796 128.85437  (120,240]          Typical  [ 71.1,176)
## 1797 260.95851 (240,6e+03]            Long  [229.4,553]
## 1798 173.28872  (120,240]          Typical  [ 71.1,176)
## 1799 347.42339 (240,6e+03]            Long  [229.4,553]
## 1800 194.26571  (120,240]          Typical  [175.9,229)
## 1801 119.87162    (0,120]           Short  [ 71.1,176)
## 1802 169.43693  (120,240]          Typical  [ 71.1,176)
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## 1803 139.81680  (120,240]      Typical  [ 71.1,176)
## 1804 247.56386 (240,6e+03]        Long  [229.4,553]
## 1805 135.62300  (120,240]      Typical  [ 71.1,176)
## 1806 167.21133  (120,240]      Typical  [ 71.1,176)
## 1807 189.94356  (120,240]      Typical  [175.9,229)
## 1808 267.89622 (240,6e+03]        Long  [229.4,553]
## 1809 223.61152  (120,240]      Typical  [175.9,229)
## 1810 195.78163  (120,240]      Typical  [175.9,229)
## 1811 246.39549 (240,6e+03]        Long  [229.4,553]
## 1812 146.23593  (120,240]      Typical  [ 71.1,176)
## 1813 167.25009  (120,240]      Typical  [ 71.1,176)
## 1814 237.81386  (120,240]      Typical  [229.4,553]
## 1815 161.89839  (120,240]      Typical  [ 71.1,176)
## 1816 179.01900  (120,240]      Typical  [175.9,229)
## 1817 259.41335 (240,6e+03]        Long  [229.4,553]
## 1818 198.12500  (120,240]      Typical  [175.9,229)
## 1819 156.51118  (120,240]      Typical  [ 71.1,176)
## 1820 226.10932  (120,240]      Typical  [175.9,229)
## 1821 224.59746  (120,240]      Typical  [175.9,229)
## 1822 192.74159  (120,240]      Typical  [175.9,229)
## 1823 208.48419  (120,240]      Typical  [175.9,229)
## 1824 180.29158  (120,240]      Typical  [175.9,229)
## 1825 277.14599 (240,6e+03]        Long  [229.4,553]
## 1826 292.22571 (240,6e+03]        Long  [229.4,553]
## 1827 231.96378  (120,240]      Typical  [229.4,553]
## 1828 156.10389  (120,240]      Typical  [ 71.1,176)
## 1829 174.02046  (120,240]      Typical  [ 71.1,176)
## 1830 142.30789  (120,240]      Typical  [ 71.1,176)
## 1831 238.32283  (120,240]      Typical  [229.4,553]
## 1832 164.37977  (120,240]      Typical  [ 71.1,176)
## 1833 275.47488 (240,6e+03]        Long  [229.4,553]
## 1834 311.24435 (240,6e+03]        Long  [229.4,553]
## 1835 177.13889  (120,240]      Typical  [175.9,229)
## 1836 193.61653  (120,240]      Typical  [175.9,229)
## 1837 154.11824  (120,240]      Typical  [ 71.1,176)
## 1838 117.53876    (0,120]        Short  [ 71.1,176)
## 1839 161.39863  (120,240]      Typical  [ 71.1,176)
## 1840 250.70556 (240,6e+03]        Long  [229.4,553]
## 1841 278.61435 (240,6e+03]        Long  [229.4,553]
## 1842 163.01319  (120,240]      Typical  [ 71.1,176)
## 1843 118.71608    (0,120]        Short  [ 71.1,176)
## 1844 247.82484 (240,6e+03]        Long  [229.4,553]
## 1845 260.09197 (240,6e+03]        Long  [229.4,553]
## 1846 252.71379 (240,6e+03]        Long  [229.4,553]
## 1847 119.48376    (0,120]        Short  [ 71.1,176)
## 1848 145.09186  (120,240]      Typical  [ 71.1,176)
## 1849 207.59549  (120,240]      Typical  [175.9,229)
## 1850 173.90270  (120,240]      Typical  [ 71.1,176)
## 1851 193.02318  (120,240]      Typical  [175.9,229)
## 1852 155.93232  (120,240]      Typical  [ 71.1,176)
## 1853 188.02162  (120,240]      Typical  [175.9,229)
## 1854 138.06891  (120,240]      Typical  [ 71.1,176)
## 1855 321.96424 (240,6e+03]        Long  [229.4,553]
## 1856 177.63885  (120,240]      Typical  [175.9,229)
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## 1857 156.61211   (120,240]     Typical  [ 71.1,176)
## 1858 224.78430   (120,240]     Typical  [175.9,229)
## 1859 288.58294 (240,6e+03]        Long  [229.4,553]
## 1860 152.04630   (120,240]     Typical  [ 71.1,176)
## 1861 346.68467 (240,6e+03]        Long  [229.4,553]
## 1862 137.80656   (120,240]     Typical  [ 71.1,176)
## 1863 124.62882   (120,240]     Typical  [ 71.1,176)
## 1864 259.88404 (240,6e+03]        Long  [229.4,553]
## 1865 203.69383   (120,240]     Typical  [175.9,229)
## 1866 168.04249   (120,240]     Typical  [ 71.1,176)
## 1867 163.47751   (120,240]     Typical  [ 71.1,176)
## 1868 156.27906   (120,240]     Typical  [ 71.1,176)
## 1869 179.76711   (120,240]     Typical  [175.9,229)
## 1870 162.69954   (120,240]     Typical  [ 71.1,176)
## 1871 187.11726   (120,240]     Typical  [175.9,229)
## 1872 190.89026   (120,240]     Typical  [175.9,229)
## 1873 204.16994   (120,240]     Typical  [175.9,229)
## 1874 167.44525   (120,240]     Typical  [ 71.1,176)
## 1875 114.07329     (0,120]       Short  [ 71.1,176)
## 1876 256.49929 (240,6e+03]        Long  [229.4,553]
## 1877 274.26946 (240,6e+03]        Long  [229.4,553]
## 1878 212.70705   (120,240]     Typical  [175.9,229)
## 1879 275.72429 (240,6e+03]        Long  [229.4,553]
## 1880 203.42800   (120,240]     Typical  [175.9,229)
## 1881 147.68555   (120,240]     Typical  [ 71.1,176)
## 1882 223.67246   (120,240]     Typical  [175.9,229)
## 1883 218.43529   (120,240]     Typical  [175.9,229)
## 1884 136.65411   (120,240]     Typical  [ 71.1,176)
## 1885 252.69435 (240,6e+03]        Long  [229.4,553]
## 1886 122.72553   (120,240]     Typical  [ 71.1,176)
## 1887 208.89137   (120,240]     Typical  [175.9,229)
## 1888 129.86618   (120,240]     Typical  [ 71.1,176)
## 1889 142.44863   (120,240]     Typical  [ 71.1,176)
## 1890 203.40128   (120,240]     Typical  [175.9,229)
## 1891 166.81577   (120,240]     Typical  [ 71.1,176)
## 1892 152.14593   (120,240]     Typical  [ 71.1,176)
## 1893 188.41050   (120,240]     Typical  [175.9,229)
## 1894 329.50900 (240,6e+03]        Long  [229.4,553]
## 1895 233.09253   (120,240]     Typical  [229.4,553]
## 1896 224.02189   (120,240]     Typical  [175.9,229)
## 1897 166.00085   (120,240]     Typical  [ 71.1,176)
## 1898 127.28248   (120,240]     Typical  [ 71.1,176)
## 1899 246.13207 (240,6e+03]        Long  [229.4,553]
## 1900 187.51553   (120,240]     Typical  [175.9,229)
## 1901 181.43442   (120,240]     Typical  [175.9,229)
## 1902 187.82307   (120,240]     Typical  [175.9,229)
## 1903 243.76508 (240,6e+03]        Long  [229.4,553]
## 1904 241.71593 (240,6e+03]        Long  [229.4,553]
## 1905 309.70817 (240,6e+03]        Long  [229.4,553]
## 1906 353.72624 (240,6e+03]        Long  [229.4,553]
## 1907 179.61691   (120,240]     Typical  [175.9,229)
## 1908 272.22742 (240,6e+03]        Long  [229.4,553]
## 1909 222.20009   (120,240]     Typical  [175.9,229)
## 1910 312.95416 (240,6e+03]        Long  [229.4,553]
```

```
## 1911 194.95397   (120,240]       Typical   [175.9,229)
## 1912 211.02352   (120,240]       Typical   [175.9,229)
## 1913 291.24013 (240,6e+03]          Long   [229.4,553]
## 1914 129.74777   (120,240]       Typical   [ 71.1,176)
## 1915 276.05504 (240,6e+03]          Long   [229.4,553]
## 1916 176.37372   (120,240]       Typical   [175.9,229)
## 1917 166.65767   (120,240]       Typical   [ 71.1,176)
## 1918 322.55258 (240,6e+03]          Long   [229.4,553]
## 1919 136.44680   (120,240]       Typical   [ 71.1,176)
## 1920 125.58063   (120,240]       Typical   [ 71.1,176)
## 1921 185.04073   (120,240]       Typical   [175.9,229)
## 1922 208.92463   (120,240]       Typical   [175.9,229)
## 1923 207.89322   (120,240]       Typical   [175.9,229)
## 1924 298.05831 (240,6e+03]          Long   [229.4,553]
## 1925 228.14353   (120,240]       Typical   [175.9,229)
## 1926 162.65717   (120,240]       Typical   [ 71.1,176)
## 1927 130.61686   (120,240]       Typical   [ 71.1,176)
## 1928 291.29151 (240,6e+03]          Long   [229.4,553]
## 1929 200.06154   (120,240]       Typical   [175.9,229)
## 1930 208.46620   (120,240]       Typical   [175.9,229)
## 1931 258.93797 (240,6e+03]          Long   [229.4,553]
## 1932 130.59428   (120,240]       Typical   [ 71.1,176)
## 1933 250.33556 (240,6e+03]          Long   [229.4,553]
## 1934 277.97195 (240,6e+03]          Long   [229.4,553]
## 1935 219.28430   (120,240]       Typical   [175.9,229)
## 1936 150.72879   (120,240]       Typical   [ 71.1,176)
## 1937 229.39272   (120,240]       Typical   [229.4,553]
## 1938 242.60754 (240,6e+03]          Long   [229.4,553]
## 1939 173.21616   (120,240]       Typical   [ 71.1,176)
## 1940 232.84813   (120,240]       Typical   [229.4,553]
## 1941 162.53176   (120,240]       Typical   [ 71.1,176)
## 1942 198.64390   (120,240]       Typical   [175.9,229)
## 1943 246.63882 (240,6e+03]          Long   [229.4,553]
## 1944 166.15229   (120,240]       Typical   [ 71.1,176)
## 1945 210.88268   (120,240]       Typical   [175.9,229)
## 1946 232.09693   (120,240]       Typical   [229.4,553]
## 1947 148.08298   (120,240]       Typical   [ 71.1,176)
## 1948 221.32333   (120,240]       Typical   [175.9,229)
## 1949 214.43097   (120,240]       Typical   [175.9,229)
## 1950 242.23801 (240,6e+03]          Long   [229.4,553]
## 1951 109.27283     (0,120]         Short   [ 71.1,176)
## 1952 145.80671   (120,240]       Typical   [ 71.1,176)
## 1953 201.07436   (120,240]       Typical   [175.9,229)
## 1954 214.84007   (120,240]       Typical   [175.9,229)
## 1955 237.28261   (120,240]       Typical   [229.4,553]
## 1956 240.63002 (240,6e+03]          Long   [229.4,553]
## 1957 264.03094 (240,6e+03]          Long   [229.4,553]
## 1958 110.73035     (0,120]         Short   [ 71.1,176)
## 1959 155.04772   (120,240]       Typical   [ 71.1,176)
## 1960 187.56522   (120,240]       Typical   [175.9,229)
## 1961 169.49513   (120,240]       Typical   [ 71.1,176)
## 1962 274.01779 (240,6e+03]          Long   [229.4,553]
## 1963 102.24989     (0,120]         Short   [ 71.1,176)
## 1964 236.96781   (120,240]       Typical   [229.4,553]
```

```
## 1965 333.55514 (240,6e+03]          Long    [229.4,553]
## 1966 206.10787   (120,240]       Typical    [175.9,229)
## 1967 187.15037   (120,240]       Typical    [175.9,229)
## 1968 160.63227   (120,240]       Typical    [ 71.1,176)
## 1969 108.33282      (0,120]         Short    [ 71.1,176)
## 1970 275.33931 (240,6e+03]          Long    [229.4,553]
## 1971 352.26796 (240,6e+03]          Long    [229.4,553]
## 1972 245.20740 (240,6e+03]          Long    [229.4,553]
## 1973 184.59371   (120,240]       Typical    [175.9,229)
## 1974 387.30659 (240,6e+03]          Long    [229.4,553]
## 1975 142.77011   (120,240]       Typical    [ 71.1,176)
## 1976 168.85111   (120,240]       Typical    [ 71.1,176)
## 1977 145.68819   (120,240]       Typical    [ 71.1,176)
## 1978 126.14325   (120,240]       Typical    [ 71.1,176)
## 1979 214.18678   (120,240]       Typical    [175.9,229)
## 1980 250.36712 (240,6e+03]          Long    [229.4,553]
## 1981 201.56380   (120,240]       Typical    [175.9,229)
## 1982 212.23057   (120,240]       Typical    [175.9,229)
## 1983 227.23923   (120,240]       Typical    [175.9,229)
## 1984 199.25099   (120,240]       Typical    [175.9,229)
## 1985 226.37559   (120,240]       Typical    [175.9,229)
## 1986 167.74393   (120,240]       Typical    [ 71.1,176)
## 1987 223.36041   (120,240]       Typical    [175.9,229)
## 1988 151.02181   (120,240]       Typical    [ 71.1,176)
## 1989 186.06630   (120,240]       Typical    [175.9,229)
## 1990 274.28108 (240,6e+03]          Long    [229.4,553]
## 1991 161.40960   (120,240]       Typical    [ 71.1,176)
## 1992 209.45164   (120,240]       Typical    [175.9,229)
## 1993 190.77680   (120,240]       Typical    [175.9,229)
## 1994 257.14447 (240,6e+03]          Long    [229.4,553]
## 1995 238.14220   (120,240]       Typical    [229.4,553]
## 1996 226.48995   (120,240]       Typical    [175.9,229)
## 1997 268.33558 (240,6e+03]          Long    [229.4,553]
## 1998 254.45499 (240,6e+03]          Long    [229.4,553]
## 1999 170.94098   (120,240]       Typical    [ 71.1,176)
## 2000 136.71162   (120,240]       Typical    [ 71.1,176)
##      quantile_bins_labels
## 1                   Short
## 2                 Typical
## 3                    Long
## 4                   Short
## 5                    Long
## 6                 Typical
## 7                 Typical
## 8                 Typical
## 9                   Short
## 10                  Short
## 11                Typical
## 12                  Short
## 13                  Short
## 14                  Short
## 15                  Short
## 16                Typical
## 17                Typical
```

```
## 18                  Typical
## 19                    Short
## 20                     Long
## 21                    Short
## 22                  Typical
## 23                    Short
## 24                  Typical
## 25                    Short
## 26                  Typical
## 27                  Typical
## 28                  Typical
## 29                    Short
## 30                  Typical
## 31                    Short
## 32                    Short
## 33                    Short
## 34                  Typical
## 35                     Long
## 36                  Typical
## 37                    Short
## 38                     Long
## 39                     Long
## 40                    Short
## 41                  Typical
## 42                  Typical
## 43                     Long
## 44                  Typical
## 45                     Long
## 46                  Typical
## 47                     Long
## 48                     Long
## 49                  Typical
## 50                    Short
## 51                  Typical
## 52                     Long
## 53                     Long
## 54                    Short
## 55                     Long
## 56                    Short
## 57                    Short
## 58                     Long
## 59                     Long
## 60                    Short
## 61                     Long
## 62                     Long
## 63                  Typical
## 64                     Long
## 65                     Long
## 66                  Typical
## 67                  Typical
## 68                  Typical
## 69                     Long
## 70                    Short
## 71                    Short
```

```
## 72                      Long
## 73                      Long
## 74                     Short
## 75                   Typical
## 76                      Long
## 77                     Short
## 78                      Long
## 79                     Short
## 80                      Long
## 81                   Typical
## 82                   Typical
## 83                   Typical
## 84                      Long
## 85                      Long
## 86                     Short
## 87                      Long
## 88                      Long
## 89                   Typical
## 90                   Typical
## 91                      Long
## 92                   Typical
## 93                     Short
## 94                     Short
## 95                   Typical
## 96                   Typical
## 97                   Typical
## 98                   Typical
## 99                      Long
## 100                     Long
## 101                     Long
## 102                     Long
## 103                     Long
## 104                  Typical
## 105                     Long
## 106                  Typical
## 107                    Short
## 108                    Short
## 109                     Long
## 110                  Typical
## 111                  Typical
## 112                     Long
## 113                    Short
## 114                    Short
## 115                  Typical
## 116                  Typical
## 117                     Long
## 118                     Long
## 119                  Typical
## 120                    Short
## 121                  Typical
## 122                  Typical
## 123                     Long
## 124                    Short
## 125                    Short
```

```
## 126              Short
## 127               Long
## 128              Short
## 129              Short
## 130            Typical
## 131            Typical
## 132               Long
## 133               Long
## 134              Short
## 135              Short
## 136              Short
## 137               Long
## 138              Short
## 139               Long
## 140               Long
## 141              Short
## 142              Short
## 143              Short
## 144              Short
## 145               Long
## 146               Long
## 147              Short
## 148              Short
## 149               Long
## 150              Short
## 151              Short
## 152            Typical
## 153            Typical
## 154              Short
## 155               Long
## 156            Typical
## 157            Typical
## 158              Short
## 159            Typical
## 160               Long
## 161            Typical
## 162               Long
## 163              Short
## 164            Typical
## 165              Short
## 166              Short
## 167            Typical
## 168              Short
## 169            Typical
## 170            Typical
## 171               Long
## 172            Typical
## 173               Long
## 174            Typical
## 175              Short
## 176               Long
## 177            Typical
## 178            Typical
## 179            Typical
```

```
## 180              Typical
## 181              Typical
## 182                 Long
## 183              Typical
## 184              Typical
## 185                Short
## 186                Short
## 187                Short
## 188                 Long
## 189              Typical
## 190                Short
## 191              Typical
## 192              Typical
## 193              Typical
## 194                Short
## 195                Short
## 196              Typical
## 197              Typical
## 198              Typical
## 199              Typical
## 200              Typical
## 201                Short
## 202                Short
## 203                Short
## 204              Typical
## 205                Short
## 206                 Long
## 207                Short
## 208                Short
## 209              Typical
## 210                Short
## 211              Typical
## 212                Short
## 213                 Long
## 214                 Long
## 215                 Long
## 216              Typical
## 217              Typical
## 218                Short
## 219                 Long
## 220                 Long
## 221                Short
## 222                 Long
## 223                Short
## 224              Typical
## 225                 Long
## 226                 Long
## 227              Typical
## 228                 Long
## 229                Short
## 230                Short
## 231                Short
## 232              Typical
## 233              Typical
```

```
## 234          Short
## 235           Long
## 236          Short
## 237          Short
## 238        Typical
## 239        Typical
## 240          Short
## 241        Typical
## 242        Typical
## 243           Long
## 244          Short
## 245           Long
## 246           Long
## 247          Short
## 248           Long
## 249        Typical
## 250          Short
## 251        Typical
## 252        Typical
## 253          Short
## 254        Typical
## 255          Short
## 256        Typical
## 257           Long
## 258        Typical
## 259          Short
## 260        Typical
## 261          Short
## 262          Short
## 263        Typical
## 264           Long
## 265        Typical
## 266          Short
## 267          Short
## 268           Long
## 269           Long
## 270          Short
## 271           Long
## 272          Short
## 273           Long
## 274           Long
## 275           Long
## 276        Typical
## 277          Short
## 278          Short
## 279          Short
## 280           Long
## 281           Long
## 282           Long
## 283           Long
## 284        Typical
## 285          Short
## 286        Typical
## 287        Typical
```

```
## 288            Short
## 289             Long
## 290            Short
## 291            Short
## 292          Typical
## 293          Typical
## 294          Typical
## 295             Long
## 296             Long
## 297             Long
## 298            Short
## 299          Typical
## 300             Long
## 301             Long
## 302            Short
## 303             Long
## 304             Long
## 305             Long
## 306          Typical
## 307          Typical
## 308             Long
## 309            Short
## 310          Typical
## 311             Long
## 312             Long
## 313             Long
## 314             Long
## 315             Long
## 316             Long
## 317             Long
## 318             Long
## 319          Typical
## 320            Short
## 321            Short
## 322             Long
## 323            Short
## 324          Typical
## 325             Long
## 326            Short
## 327             Long
## 328             Long
## 329            Short
## 330          Typical
## 331             Long
## 332             Long
## 333             Long
## 334            Short
## 335            Short
## 336            Short
## 337            Short
## 338            Short
## 339          Typical
## 340             Long
## 341            Short
```

```
## 342             Short
## 343             Short
## 344           Typical
## 345             Short
## 346              Long
## 347              Long
## 348             Short
## 349           Typical
## 350              Long
## 351           Typical
## 352              Long
## 353           Typical
## 354              Long
## 355           Typical
## 356              Long
## 357              Long
## 358              Long
## 359             Short
## 360           Typical
## 361             Short
## 362              Long
## 363           Typical
## 364              Long
## 365           Typical
## 366              Long
## 367              Long
## 368              Long
## 369             Short
## 370              Long
## 371           Typical
## 372              Long
## 373              Long
## 374              Long
## 375             Short
## 376              Long
## 377              Long
## 378           Typical
## 379           Typical
## 380              Long
## 381              Long
## 382              Long
## 383              Long
## 384             Short
## 385           Typical
## 386             Short
## 387              Long
## 388             Short
## 389           Typical
## 390              Long
## 391           Typical
## 392              Long
## 393              Long
## 394              Long
## 395              Long
```

```
## 396              Long
## 397           Typical
## 398              Long
## 399              Long
## 400              Long
## 401           Typical
## 402              Long
## 403           Typical
## 404             Short
## 405           Typical
## 406           Typical
## 407           Typical
## 408             Short
## 409             Short
## 410           Typical
## 411             Short
## 412              Long
## 413              Long
## 414             Short
## 415           Typical
## 416             Short
## 417              Long
## 418           Typical
## 419           Typical
## 420           Typical
## 421           Typical
## 422              Long
## 423           Typical
## 424           Typical
## 425           Typical
## 426              Long
## 427              Long
## 428           Typical
## 429           Typical
## 430             Short
## 431             Short
## 432           Typical
## 433           Typical
## 434             Short
## 435             Short
## 436             Short
## 437             Short
## 438              Long
## 439              Long
## 440              Long
## 441           Typical
## 442              Long
## 443              Long
## 444           Typical
## 445           Typical
## 446             Short
## 447             Short
## 448              Long
## 449             Short
```

```
## 450            Long
## 451         Typical
## 452           Short
## 453           Short
## 454            Long
## 455            Long
## 456            Long
## 457           Short
## 458            Long
## 459         Typical
## 460            Long
## 461         Typical
## 462         Typical
## 463         Typical
## 464         Typical
## 465           Short
## 466            Long
## 467           Short
## 468           Short
## 469           Short
## 470           Short
## 471         Typical
## 472         Typical
## 473           Short
## 474           Short
## 475            Long
## 476            Long
## 477         Typical
## 478            Long
## 479            Long
## 480            Long
## 481           Short
## 482            Long
## 483           Short
## 484         Typical
## 485           Short
## 486            Long
## 487            Long
## 488            Long
## 489           Short
## 490           Short
## 491         Typical
## 492         Typical
## 493         Typical
## 494           Short
## 495         Typical
## 496         Typical
## 497            Long
## 498            Long
## 499           Short
## 500           Short
## 501            Long
## 502           Short
## 503            Long
```

```
## 504             Short
## 505              Long
## 506           Typical
## 507              Long
## 508             Short
## 509           Typical
## 510              Long
## 511              Long
## 512           Typical
## 513           Typical
## 514              Long
## 515             Short
## 516              Long
## 517           Typical
## 518             Short
## 519           Typical
## 520             Short
## 521           Typical
## 522           Typical
## 523              Long
## 524             Short
## 525              Long
## 526           Typical
## 527           Typical
## 528           Typical
## 529              Long
## 530           Typical
## 531              Long
## 532              Long
## 533           Typical
## 534           Typical
## 535             Short
## 536              Long
## 537              Long
## 538             Short
## 539           Typical
## 540              Long
## 541              Long
## 542           Typical
## 543             Short
## 544             Short
## 545           Typical
## 546              Long
## 547              Long
## 548             Short
## 549              Long
## 550              Long
## 551             Short
## 552              Long
## 553              Long
## 554           Typical
## 555             Short
## 556           Typical
## 557             Short
```

```
## 558          Short
## 559          Short
## 560          Short
## 561          Short
## 562          Short
## 563          Short
## 564          Short
## 565        Typical
## 566        Typical
## 567        Typical
## 568           Long
## 569        Typical
## 570        Typical
## 571        Typical
## 572        Typical
## 573        Typical
## 574          Short
## 575           Long
## 576           Long
## 577           Long
## 578           Long
## 579        Typical
## 580          Short
## 581        Typical
## 582        Typical
## 583          Short
## 584          Short
## 585        Typical
## 586        Typical
## 587          Short
## 588        Typical
## 589          Short
## 590           Long
## 591        Typical
## 592           Long
## 593          Short
## 594        Typical
## 595           Long
## 596          Short
## 597        Typical
## 598          Short
## 599           Long
## 600          Short
## 601          Short
## 602          Short
## 603           Long
## 604          Short
## 605          Short
## 606           Long
## 607        Typical
## 608           Long
## 609          Short
## 610        Typical
## 611           Long
```

```
## 612              Short
## 613            Typical
## 614              Short
## 615              Short
## 616            Typical
## 617            Typical
## 618            Typical
## 619               Long
## 620              Short
## 621              Short
## 622               Long
## 623               Long
## 624            Typical
## 625              Short
## 626            Typical
## 627               Long
## 628               Long
## 629            Typical
## 630               Long
## 631              Short
## 632               Long
## 633              Short
## 634              Short
## 635            Typical
## 636            Typical
## 637            Typical
## 638               Long
## 639               Long
## 640              Short
## 641            Typical
## 642               Long
## 643              Short
## 644              Short
## 645            Typical
## 646              Short
## 647            Typical
## 648               Long
## 649            Typical
## 650               Long
## 651              Short
## 652            Typical
## 653            Typical
## 654              Short
## 655              Short
## 656            Typical
## 657              Short
## 658               Long
## 659               Long
## 660               Long
## 661               Long
## 662            Typical
## 663              Short
## 664              Short
## 665               Long
```

```
## 666                Typical
## 667                  Short
## 668                Typical
## 669                   Long
## 670                  Short
## 671                Typical
## 672                   Long
## 673                   Long
## 674                  Short
## 675                   Long
## 676                  Short
## 677                  Short
## 678                  Short
## 679                Typical
## 680                  Short
## 681                   Long
## 682                  Short
## 683                Typical
## 684                  Short
## 685                Typical
## 686                   Long
## 687                  Short
## 688                  Short
## 689                   Long
## 690                  Short
## 691                Typical
## 692                   Long
## 693                  Short
## 694                   Long
## 695                Typical
## 696                   Long
## 697                Typical
## 698                  Short
## 699                   Long
## 700                Typical
## 701                  Short
## 702                Typical
## 703                   Long
## 704                Typical
## 705                Typical
## 706                  Short
## 707                   Long
## 708                Typical
## 709                   Long
## 710                Typical
## 711                   Long
## 712                Typical
## 713                  Short
## 714                  Short
## 715                   Long
## 716                Typical
## 717                Typical
## 718                Typical
## 719                Typical
```

```
## 720             Short
## 721             Short
## 722              Long
## 723           Typical
## 724           Typical
## 725             Short
## 726              Long
## 727           Typical
## 728             Short
## 729           Typical
## 730              Long
## 731           Typical
## 732              Long
## 733             Short
## 734              Long
## 735             Short
## 736             Short
## 737              Long
## 738           Typical
## 739              Long
## 740           Typical
## 741              Long
## 742           Typical
## 743           Typical
## 744             Short
## 745             Short
## 746             Short
## 747              Long
## 748             Short
## 749           Typical
## 750              Long
## 751             Short
## 752              Long
## 753           Typical
## 754             Short
## 755              Long
## 756           Typical
## 757           Typical
## 758           Typical
## 759              Long
## 760              Long
## 761             Short
## 762              Long
## 763           Typical
## 764              Long
## 765           Typical
## 766              Long
## 767           Typical
## 768           Typical
## 769              Long
## 770           Typical
## 771              Long
## 772           Typical
## 773             Short
```

```
## 774             Short
## 775              Long
## 776              Long
## 777           Typical
## 778              Long
## 779              Long
## 780           Typical
## 781             Short
## 782             Short
## 783              Long
## 784             Short
## 785             Short
## 786             Short
## 787           Typical
## 788              Long
## 789             Short
## 790              Long
## 791             Short
## 792             Short
## 793              Long
## 794           Typical
## 795           Typical
## 796             Short
## 797           Typical
## 798             Short
## 799           Typical
## 800             Short
## 801              Long
## 802              Long
## 803             Short
## 804             Short
## 805           Typical
## 806           Typical
## 807              Long
## 808              Long
## 809           Typical
## 810              Long
## 811              Long
## 812           Typical
## 813           Typical
## 814              Long
## 815             Short
## 816           Typical
## 817              Long
## 818              Long
## 819             Short
## 820              Long
## 821              Long
## 822           Typical
## 823              Long
## 824           Typical
## 825              Long
## 826           Typical
## 827           Typical
```

```
## 828           Long
## 829        Typical
## 830           Long
## 831           Long
## 832        Typical
## 833        Typical
## 834          Short
## 835           Long
## 836          Short
## 837        Typical
## 838           Long
## 839          Short
## 840        Typical
## 841           Long
## 842          Short
## 843           Long
## 844          Short
## 845           Long
## 846        Typical
## 847          Short
## 848        Typical
## 849          Short
## 850          Short
## 851           Long
## 852        Typical
## 853           Long
## 854          Short
## 855        Typical
## 856        Typical
## 857          Short
## 858           Long
## 859        Typical
## 860           Long
## 861        Typical
## 862        Typical
## 863          Short
## 864           Long
## 865           Long
## 866           Long
## 867          Short
## 868           Long
## 869          Short
## 870          Short
## 871           Long
## 872        Typical
## 873           Long
## 874        Typical
## 875           Long
## 876           Long
## 877          Short
## 878          Short
## 879        Typical
## 880           Long
## 881          Short
```

```
## 882           Typical
## 883              Long
## 884             Short
## 885              Long
## 886              Long
## 887              Long
## 888              Long
## 889             Short
## 890              Long
## 891              Long
## 892           Typical
## 893             Short
## 894             Short
## 895             Short
## 896           Typical
## 897             Short
## 898              Long
## 899             Short
## 900           Typical
## 901              Long
## 902              Long
## 903           Typical
## 904             Short
## 905           Typical
## 906              Long
## 907              Long
## 908           Typical
## 909             Short
## 910             Short
## 911           Typical
## 912             Short
## 913             Short
## 914             Short
## 915           Typical
## 916              Long
## 917           Typical
## 918           Typical
## 919             Short
## 920             Short
## 921             Short
## 922             Short
## 923             Short
## 924              Long
## 925             Short
## 926              Long
## 927           Typical
## 928             Short
## 929             Short
## 930             Short
## 931             Short
## 932           Typical
## 933             Short
## 934             Short
## 935              Long
```

```
## 936                    Long
## 937                 Typical
## 938                   Short
## 939                    Long
## 940                 Typical
## 941                    Long
## 942                   Short
## 943                    Long
## 944                   Short
## 945                 Typical
## 946                   Short
## 947                 Typical
## 948                   Short
## 949                   Short
## 950                 Typical
## 951                    Long
## 952                    Long
## 953                 Typical
## 954                 Typical
## 955                 Typical
## 956                 Typical
## 957                   Short
## 958                    Long
## 959                 Typical
## 960                    Long
## 961                 Typical
## 962                   Short
## 963                   Short
## 964                   Short
## 965                 Typical
## 966                 Typical
## 967                 Typical
## 968                   Short
## 969                    Long
## 970                 Typical
## 971                   Short
## 972                   Short
## 973                 Typical
## 974                   Short
## 975                    Long
## 976                    Long
## 977                   Short
## 978                    Long
## 979                   Short
## 980                 Typical
## 981                   Short
## 982                   Short
## 983                   Short
## 984                    Long
## 985                   Short
## 986                 Typical
## 987                 Typical
## 988                   Short
## 989                   Short
```

```
## 990                   Long
## 991                   Long
## 992                  Short
## 993                Typical
## 994                  Short
## 995                Typical
## 996                Typical
## 997                   Long
## 998                   Long
## 999                   Long
## 1000               Typical
## 1001               Typical
## 1002                  Long
## 1003                  Long
## 1004               Typical
## 1005                 Short
## 1006               Typical
## 1007               Typical
## 1008               Typical
## 1009               Typical
## 1010               Typical
## 1011               Typical
## 1012                  Long
## 1013               Typical
## 1014                  Long
## 1015               Typical
## 1016                  Long
## 1017                  Long
## 1018                  Long
## 1019                 Short
## 1020                 Short
## 1021                 Short
## 1022                 Short
## 1023                  Long
## 1024               Typical
## 1025               Typical
## 1026                  Long
## 1027               Typical
## 1028                  Long
## 1029               Typical
## 1030                 Short
## 1031                 Short
## 1032                  Long
## 1033                  Long
## 1034                  Long
## 1035               Typical
## 1036               Typical
## 1037                  Long
## 1038                  Long
## 1039                 Short
## 1040                 Short
## 1041                 Short
## 1042                  Long
## 1043                  Long
```

```
## 1044                Short
## 1045                Short
## 1046              Typical
## 1047              Typical
## 1048                 Long
## 1049                Short
## 1050                Short
## 1051                Short
## 1052              Typical
## 1053                 Long
## 1054                 Long
## 1055              Typical
## 1056                Short
## 1057                 Long
## 1058              Typical
## 1059              Typical
## 1060                Short
## 1061                Short
## 1062              Typical
## 1063                Short
## 1064                 Long
## 1065                Short
## 1066              Typical
## 1067                 Long
## 1068                Short
## 1069                Short
## 1070              Typical
## 1071                 Long
## 1072              Typical
## 1073                 Long
## 1074                 Long
## 1075                Short
## 1076                 Long
## 1077              Typical
## 1078                Short
## 1079                Short
## 1080                 Long
## 1081                Short
## 1082              Typical
## 1083              Typical
## 1084                Short
## 1085                 Long
## 1086              Typical
## 1087              Typical
## 1088                 Long
## 1089                 Long
## 1090                 Long
## 1091                 Long
## 1092                 Long
## 1093              Typical
## 1094                 Long
## 1095                Short
## 1096                 Long
## 1097                 Long
```

```
## 1098        Short
## 1099        Short
## 1100         Long
## 1101        Short
## 1102      Typical
## 1103         Long
## 1104      Typical
## 1105      Typical
## 1106        Short
## 1107         Long
## 1108         Long
## 1109         Long
## 1110         Long
## 1111        Short
## 1112      Typical
## 1113         Long
## 1114         Long
## 1115      Typical
## 1116        Short
## 1117      Typical
## 1118      Typical
## 1119      Typical
## 1120        Short
## 1121      Typical
## 1122      Typical
## 1123        Short
## 1124         Long
## 1125        Short
## 1126        Short
## 1127        Short
## 1128      Typical
## 1129        Short
## 1130      Typical
## 1131         Long
## 1132        Short
## 1133        Short
## 1134        Short
## 1135      Typical
## 1136        Short
## 1137         Long
## 1138         Long
## 1139         Long
## 1140      Typical
## 1141        Short
## 1142      Typical
## 1143         Long
## 1144      Typical
## 1145      Typical
## 1146      Typical
## 1147         Long
## 1148         Long
## 1149      Typical
## 1150         Long
## 1151         Long
```

```
## 1152                     Long
## 1153                     Long
## 1154                     Long
## 1155                  Typical
## 1156                     Long
## 1157                  Typical
## 1158                    Short
## 1159                    Short
## 1160                     Long
## 1161                     Long
## 1162                     Long
## 1163                    Short
## 1164                     Long
## 1165                    Short
## 1166                     Long
## 1167                    Short
## 1168                  Typical
## 1169                  Typical
## 1170                    Short
## 1171                  Typical
## 1172                  Typical
## 1173                     Long
## 1174                     Long
## 1175                     Long
## 1176                  Typical
## 1177                  Typical
## 1178                     Long
## 1179                     Long
## 1180                  Typical
## 1181                  Typical
## 1182                     Long
## 1183                     Long
## 1184                    Short
## 1185                     Long
## 1186                  Typical
## 1187                     Long
## 1188                     Long
## 1189                    Short
## 1190                    Short
## 1191                  Typical
## 1192                     Long
## 1193                    Short
## 1194                     Long
## 1195                  Typical
## 1196                    Short
## 1197                     Long
## 1198                     Long
## 1199                  Typical
## 1200                  Typical
## 1201                    Short
## 1202                  Typical
## 1203                     Long
## 1204                    Short
## 1205                     Long
```

```
## 1206              Long
## 1207              Long
## 1208           Typical
## 1209              Long
## 1210             Short
## 1211              Long
## 1212              Long
## 1213           Typical
## 1214             Short
## 1215           Typical
## 1216             Short
## 1217             Short
## 1218             Short
## 1219             Short
## 1220             Short
## 1221           Typical
## 1222             Short
## 1223           Typical
## 1224             Short
## 1225           Typical
## 1226           Typical
## 1227              Long
## 1228             Short
## 1229              Long
## 1230           Typical
## 1231           Typical
## 1232           Typical
## 1233             Short
## 1234             Short
## 1235           Typical
## 1236             Short
## 1237           Typical
## 1238             Short
## 1239             Short
## 1240           Typical
## 1241             Short
## 1242              Long
## 1243              Long
## 1244              Long
## 1245              Long
## 1246           Typical
## 1247             Short
## 1248              Long
## 1249             Short
## 1250           Typical
## 1251             Short
## 1252              Long
## 1253           Typical
## 1254           Typical
## 1255              Long
## 1256              Long
## 1257              Long
## 1258           Typical
## 1259              Long
```

```
## 1260            Long
## 1261         Typical
## 1262           Short
## 1263           Short
## 1264         Typical
## 1265         Typical
## 1266         Typical
## 1267            Long
## 1268         Typical
## 1269         Typical
## 1270            Long
## 1271            Long
## 1272            Long
## 1273            Long
## 1274           Short
## 1275         Typical
## 1276         Typical
## 1277         Typical
## 1278         Typical
## 1279            Long
## 1280         Typical
## 1281           Short
## 1282         Typical
## 1283           Short
## 1284         Typical
## 1285            Long
## 1286            Long
## 1287         Typical
## 1288            Long
## 1289         Typical
## 1290           Short
## 1291            Long
## 1292         Typical
## 1293            Long
## 1294         Typical
## 1295         Typical
## 1296         Typical
## 1297           Short
## 1298           Short
## 1299         Typical
## 1300         Typical
## 1301            Long
## 1302         Typical
## 1303            Long
## 1304           Short
## 1305            Long
## 1306            Long
## 1307         Typical
## 1308           Short
## 1309           Short
## 1310           Short
## 1311           Short
## 1312            Long
## 1313            Long
```

```
## 1314           Short
## 1315            Long
## 1316            Long
## 1317           Short
## 1318            Long
## 1319            Long
## 1320           Short
## 1321            Long
## 1322            Long
## 1323            Long
## 1324            Long
## 1325           Short
## 1326           Short
## 1327            Long
## 1328            Long
## 1329         Typical
## 1330            Long
## 1331         Typical
## 1332           Short
## 1333           Short
## 1334            Long
## 1335         Typical
## 1336         Typical
## 1337           Short
## 1338            Long
## 1339            Long
## 1340            Long
## 1341           Short
## 1342           Short
## 1343         Typical
## 1344           Short
## 1345           Short
## 1346            Long
## 1347         Typical
## 1348         Typical
## 1349           Short
## 1350         Typical
## 1351            Long
## 1352         Typical
## 1353         Typical
## 1354         Typical
## 1355            Long
## 1356         Typical
## 1357           Short
## 1358         Typical
## 1359           Short
## 1360         Typical
## 1361           Short
## 1362         Typical
## 1363           Short
## 1364           Short
## 1365            Long
## 1366            Long
## 1367         Typical
```

```
## 1368          Typical
## 1369          Typical
## 1370          Typical
## 1371          Typical
## 1372            Short
## 1373            Short
## 1374          Typical
## 1375          Typical
## 1376          Typical
## 1377          Typical
## 1378             Long
## 1379          Typical
## 1380            Short
## 1381            Short
## 1382            Short
## 1383             Long
## 1384            Short
## 1385            Short
## 1386          Typical
## 1387          Typical
## 1388          Typical
## 1389             Long
## 1390            Short
## 1391             Long
## 1392             Long
## 1393          Typical
## 1394             Long
## 1395             Long
## 1396            Short
## 1397             Long
## 1398             Long
## 1399            Short
## 1400            Short
## 1401            Short
## 1402            Short
## 1403            Short
## 1404            Short
## 1405            Short
## 1406            Short
## 1407          Typical
## 1408            Short
## 1409          Typical
## 1410            Short
## 1411            Short
## 1412             Long
## 1413          Typical
## 1414             Long
## 1415            Short
## 1416            Short
## 1417             Long
## 1418            Short
## 1419          Typical
## 1420          Typical
## 1421            Short
```

```
## 1422           Short
## 1423           Short
## 1424           Short
## 1425         Typical
## 1426            Long
## 1427            Long
## 1428           Short
## 1429         Typical
## 1430         Typical
## 1431           Short
## 1432           Short
## 1433            Long
## 1434           Short
## 1435            Long
## 1436           Short
## 1437         Typical
## 1438           Short
## 1439         Typical
## 1440         Typical
## 1441         Typical
## 1442            Long
## 1443            Long
## 1444           Short
## 1445            Long
## 1446         Typical
## 1447           Short
## 1448         Typical
## 1449         Typical
## 1450            Long
## 1451         Typical
## 1452           Short
## 1453         Typical
## 1454         Typical
## 1455           Short
## 1456           Short
## 1457           Short
## 1458         Typical
## 1459         Typical
## 1460            Long
## 1461            Long
## 1462            Long
## 1463         Typical
## 1464           Short
## 1465           Short
## 1466           Short
## 1467            Long
## 1468         Typical
## 1469         Typical
## 1470            Long
## 1471         Typical
## 1472           Short
## 1473           Short
## 1474            Long
## 1475            Long
```

```
## 1476             Long
## 1477             Long
## 1478          Typical
## 1479          Typical
## 1480            Short
## 1481          Typical
## 1482          Typical
## 1483             Long
## 1484             Long
## 1485            Short
## 1486             Long
## 1487          Typical
## 1488             Long
## 1489            Short
## 1490             Long
## 1491          Typical
## 1492          Typical
## 1493            Short
## 1494             Long
## 1495          Typical
## 1496          Typical
## 1497             Long
## 1498            Short
## 1499             Long
## 1500          Typical
## 1501          Typical
## 1502          Typical
## 1503             Long
## 1504            Short
## 1505             Long
## 1506            Short
## 1507             Long
## 1508             Long
## 1509          Typical
## 1510            Short
## 1511          Typical
## 1512            Short
## 1513            Short
## 1514          Typical
## 1515          Typical
## 1516          Typical
## 1517            Short
## 1518          Typical
## 1519             Long
## 1520             Long
## 1521            Short
## 1522          Typical
## 1523          Typical
## 1524            Short
## 1525            Short
## 1526          Typical
## 1527          Typical
## 1528             Long
## 1529            Short
```

```
## 1530          Short
## 1531          Short
## 1532          Short
## 1533        Typical
## 1534        Typical
## 1535          Short
## 1536           Long
## 1537          Short
## 1538          Short
## 1539        Typical
## 1540           Long
## 1541        Typical
## 1542           Long
## 1543        Typical
## 1544        Typical
## 1545        Typical
## 1546        Typical
## 1547        Typical
## 1548          Short
## 1549          Short
## 1550          Short
## 1551           Long
## 1552        Typical
## 1553        Typical
## 1554          Short
## 1555        Typical
## 1556           Long
## 1557        Typical
## 1558          Short
## 1559           Long
## 1560           Long
## 1561          Short
## 1562        Typical
## 1563          Short
## 1564           Long
## 1565        Typical
## 1566        Typical
## 1567           Long
## 1568           Long
## 1569          Short
## 1570          Short
## 1571        Typical
## 1572        Typical
## 1573        Typical
## 1574        Typical
## 1575           Long
## 1576           Long
## 1577          Short
## 1578           Long
## 1579        Typical
## 1580           Long
## 1581           Long
## 1582           Long
## 1583           Long
```

```
## 1584                    Long
## 1585                 Typical
## 1586                   Short
## 1587                   Short
## 1588                    Long
## 1589                   Short
## 1590                   Short
## 1591                    Long
## 1592                   Short
## 1593                 Typical
## 1594                   Short
## 1595                 Typical
## 1596                    Long
## 1597                 Typical
## 1598                   Short
## 1599                   Short
## 1600                   Short
## 1601                 Typical
## 1602                   Short
## 1603                 Typical
## 1604                   Short
## 1605                    Long
## 1606                   Short
## 1607                 Typical
## 1608                   Short
## 1609                 Typical
## 1610                 Typical
## 1611                 Typical
## 1612                   Short
## 1613                    Long
## 1614                    Long
## 1615                   Short
## 1616                 Typical
## 1617                 Typical
## 1618                 Typical
## 1619                   Short
## 1620                 Typical
## 1621                   Short
## 1622                    Long
## 1623                   Short
## 1624                 Typical
## 1625                 Typical
## 1626                    Long
## 1627                   Short
## 1628                    Long
## 1629                 Typical
## 1630                   Short
## 1631                 Typical
## 1632                 Typical
## 1633                 Typical
## 1634                    Long
## 1635                   Short
## 1636                    Long
## 1637                 Typical
```

```
## 1638               Short
## 1639                Long
## 1640                Long
## 1641               Short
## 1642                Long
## 1643               Short
## 1644                Long
## 1645               Short
## 1646               Short
## 1647             Typical
## 1648               Short
## 1649                Long
## 1650                Long
## 1651             Typical
## 1652                Long
## 1653                Long
## 1654             Typical
## 1655             Typical
## 1656                Long
## 1657               Short
## 1658                Long
## 1659                Long
## 1660               Short
## 1661                Long
## 1662             Typical
## 1663             Typical
## 1664             Typical
## 1665               Short
## 1666                Long
## 1667               Short
## 1668                Long
## 1669                Long
## 1670             Typical
## 1671             Typical
## 1672               Short
## 1673               Short
## 1674               Short
## 1675               Short
## 1676                Long
## 1677                Long
## 1678               Short
## 1679               Short
## 1680                Long
## 1681               Short
## 1682             Typical
## 1683                Long
## 1684               Short
## 1685                Long
## 1686               Short
## 1687             Typical
## 1688                Long
## 1689             Typical
## 1690               Short
## 1691             Typical
```

```
## 1692               Long
## 1693              Short
## 1694            Typical
## 1695              Short
## 1696               Long
## 1697              Short
## 1698              Short
## 1699               Long
## 1700              Short
## 1701              Short
## 1702              Short
## 1703               Long
## 1704               Long
## 1705            Typical
## 1706            Typical
## 1707              Short
## 1708              Short
## 1709               Long
## 1710               Long
## 1711               Long
## 1712              Short
## 1713            Typical
## 1714               Long
## 1715            Typical
## 1716               Long
## 1717               Long
## 1718              Short
## 1719               Long
## 1720               Long
## 1721            Typical
## 1722               Long
## 1723               Long
## 1724            Typical
## 1725            Typical
## 1726              Short
## 1727               Long
## 1728            Typical
## 1729              Short
## 1730               Long
## 1731              Short
## 1732              Short
## 1733              Short
## 1734            Typical
## 1735              Short
## 1736               Long
## 1737               Long
## 1738            Typical
## 1739              Short
## 1740              Short
## 1741            Typical
## 1742              Short
## 1743               Long
## 1744            Typical
## 1745               Long
```

```
## 1746            Typical
## 1747             Short
## 1748              Long
## 1749            Typical
## 1750             Short
## 1751            Typical
## 1752            Typical
## 1753              Long
## 1754             Short
## 1755             Short
## 1756            Typical
## 1757              Long
## 1758            Typical
## 1759             Short
## 1760            Typical
## 1761            Typical
## 1762             Short
## 1763             Short
## 1764             Short
## 1765              Long
## 1766              Long
## 1767              Long
## 1768            Typical
## 1769            Typical
## 1770             Short
## 1771            Typical
## 1772            Typical
## 1773             Short
## 1774            Typical
## 1775            Typical
## 1776            Typical
## 1777            Typical
## 1778             Short
## 1779              Long
## 1780             Short
## 1781             Short
## 1782             Short
## 1783              Long
## 1784              Long
## 1785            Typical
## 1786             Short
## 1787              Long
## 1788            Typical
## 1789              Long
## 1790            Typical
## 1791            Typical
## 1792              Long
## 1793             Short
## 1794             Short
## 1795             Short
## 1796             Short
## 1797              Long
## 1798             Short
## 1799              Long
```

```
## 1800        Typical
## 1801         Short
## 1802         Short
## 1803         Short
## 1804          Long
## 1805         Short
## 1806         Short
## 1807        Typical
## 1808          Long
## 1809        Typical
## 1810        Typical
## 1811          Long
## 1812         Short
## 1813         Short
## 1814          Long
## 1815         Short
## 1816        Typical
## 1817          Long
## 1818        Typical
## 1819         Short
## 1820        Typical
## 1821        Typical
## 1822        Typical
## 1823        Typical
## 1824        Typical
## 1825          Long
## 1826          Long
## 1827          Long
## 1828         Short
## 1829         Short
## 1830         Short
## 1831          Long
## 1832         Short
## 1833          Long
## 1834          Long
## 1835        Typical
## 1836        Typical
## 1837         Short
## 1838         Short
## 1839         Short
## 1840          Long
## 1841          Long
## 1842         Short
## 1843         Short
## 1844          Long
## 1845          Long
## 1846          Long
## 1847         Short
## 1848         Short
## 1849        Typical
## 1850         Short
## 1851        Typical
## 1852         Short
## 1853        Typical
```

```
## 1854             Short
## 1855              Long
## 1856           Typical
## 1857             Short
## 1858           Typical
## 1859              Long
## 1860             Short
## 1861              Long
## 1862             Short
## 1863             Short
## 1864              Long
## 1865           Typical
## 1866             Short
## 1867             Short
## 1868             Short
## 1869           Typical
## 1870             Short
## 1871           Typical
## 1872           Typical
## 1873           Typical
## 1874             Short
## 1875             Short
## 1876              Long
## 1877              Long
## 1878           Typical
## 1879              Long
## 1880           Typical
## 1881             Short
## 1882           Typical
## 1883           Typical
## 1884             Short
## 1885              Long
## 1886             Short
## 1887           Typical
## 1888             Short
## 1889             Short
## 1890           Typical
## 1891             Short
## 1892             Short
## 1893           Typical
## 1894              Long
## 1895              Long
## 1896           Typical
## 1897             Short
## 1898             Short
## 1899              Long
## 1900           Typical
## 1901           Typical
## 1902           Typical
## 1903              Long
## 1904              Long
## 1905              Long
## 1906              Long
## 1907           Typical
```

```
## 1908             Long
## 1909          Typical
## 1910             Long
## 1911          Typical
## 1912          Typical
## 1913             Long
## 1914            Short
## 1915             Long
## 1916          Typical
## 1917            Short
## 1918             Long
## 1919            Short
## 1920            Short
## 1921          Typical
## 1922          Typical
## 1923          Typical
## 1924             Long
## 1925          Typical
## 1926            Short
## 1927            Short
## 1928             Long
## 1929          Typical
## 1930          Typical
## 1931             Long
## 1932            Short
## 1933             Long
## 1934             Long
## 1935          Typical
## 1936            Short
## 1937             Long
## 1938             Long
## 1939            Short
## 1940             Long
## 1941            Short
## 1942          Typical
## 1943             Long
## 1944            Short
## 1945          Typical
## 1946             Long
## 1947            Short
## 1948          Typical
## 1949          Typical
## 1950             Long
## 1951            Short
## 1952            Short
## 1953          Typical
## 1954          Typical
## 1955             Long
## 1956             Long
## 1957             Long
## 1958            Short
## 1959            Short
## 1960          Typical
## 1961            Short
```

```
## 1962                        Long
## 1963                       Short
## 1964                        Long
## 1965                        Long
## 1966                     Typical
## 1967                     Typical
## 1968                       Short
## 1969                       Short
## 1970                        Long
## 1971                        Long
## 1972                        Long
## 1973                     Typical
## 1974                        Long
## 1975                       Short
## 1976                       Short
## 1977                       Short
## 1978                       Short
## 1979                     Typical
## 1980                        Long
## 1981                     Typical
## 1982                     Typical
## 1983                     Typical
## 1984                     Typical
## 1985                     Typical
## 1986                       Short
## 1987                     Typical
## 1988                       Short
## 1989                     Typical
## 1990                        Long
## 1991                       Short
## 1992                     Typical
## 1993                     Typical
## 1994                        Long
## 1995                        Long
## 1996                     Typical
## 1997                        Long
## 1998                        Long
## 1999                       Short
## 2000                       Short
```

With preset bins, the number of observations in each bin can be lopsided. On the other hand, when using quantiles, bins are constructed to balance observations.

```
library(tidyr)
df %>%
  select(duration)%>%
  mutate(preset_bins = cut(df$duration,
                           breaks = c(0,120,240,6000)),
         preset_bins_labels = cut(df$duration,
                           breaks = c(0,120,240,6000),
                           labels =c('Short','Typical','Long')),
         quantile_bins = factor(cut2(duration,
                                     g=3)),
         quantile_bins_labels = factor(cut2(duration,
                                     g=3),
```

```
                               labels = c('Short', 'Typical', 'Long')))%>%
  select(preset_bins_labels, quantile_bins_labels)%>%
  pivot_longer(cols = 1:2, names_to = 'var', values_to = 'values')%>%
  group_by(var, values)%>%
  count()%>%
  ungroup()%>%
  pivot_wider(names_from = 1, values_from = n)
```

```
## # A tibble: 3 x 3
##   values  preset_bins_labels quantile_bins_labels
##   <fct>                <int>                <int>
## 1 Short                   98                  667
## 2 Typical               1347                  667
## 3 Long                   555                  666
```