

Assignment_5.r

muj_m

2022-04-06

```
library(rpart)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
```

```
library(lubridate)
```

```
##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:base':
##
##   date, intersect, setdiff, union
```

```
library(magrittr)

setwd("C:\\Users\\muj_m\\Desktop\\aly_6050")
sam_train <- read.csv("final week\\Sammamish-Training.csv")
sam_test <- read.csv("final week\\Sammamish-Test1.csv")

#preprocessing

#dates
sam_train$List.Date <- mdy(sam_train$List.Date)
sam_test$List.Date <- dmy(sam_test$List.Date)

#correcting the names
colnames(sam_test)[1] <- "ML.Number"
colnames(sam_train)[1] <- "ML.Number"
```

```

#removing row because it has many empty columns
sam_train <- subset(sam_train, ML.Number!=847824)

#deleting columns as they are mostly characters and most of them have empty rows
s_t1 <- sam_train[, -c(1:2,4:5,7,9:11,14,18,20:23,25:26,28:33,35:37,42:44,46:51,53:62,64,66:72,75:83,86)
s_ts1 <- sam_test[, -c(1:2,4:5,7,9:11,14,18,20:23,25:26,28:33,35:37,42:44,46:51,53:62,64,66:72,75:83,86)

#Factors
#converting to factor

coli <- c(4:6,10:13,17:18,22:23,25:31)

s_t1 %<>%
  mutate_each_(funs(factor(.)),coli)

```

```

## Warning: 'mutate_each_()' was deprecated in dplyr 0.7.0.
## Please use 'across()' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was generated.

```

```

## Warning: 'funs()' was deprecated in dplyr 0.8.0.
## Please use a list of either functions or lambdas:
##
##   # Simple named list:
##   list(mean = mean, median = median)
##
##   # Auto named with 'tibble::lst()':
##   tibble::lst(mean, median)
##
##   # Using lambdas
##   list(~ mean(., trim = .2), ~ median(., na.rm = TRUE))
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was generated.

```

```

s_ts1 %<>%
  mutate_each_(funs(factor(.)),coli)

#filling empty values

#categorical missing values
getmode <- function(v){
  v=v[nchar(as.character(v))>0]
  uniqv <- unique(v)
  uniqv[which.max(tabulate(match(v, uniqv)))]
}

# mean for numerical values
#for train
for (cols in colnames(s_t1)) {
  if (cols %in% names(s_t1[,sapply(s_t1, is.numeric)])) {
    s_t1<-s_t1%>%mutate(!!cols := replace(!!rlang::sym(cols), is.na(!!rlang::sym(cols)), mean(!!rlang::sym(cols))))
  }
}

```

```

else {

  s_t1<-s_t1%>%mutate(!!cols := replace(!!rlang::sym(cols), !!rlang::sym(cols)=="", getmode(!!rlang::sym(cols)))

}
}

#for test
for (cols in colnames(s_ts1)) {
  if (cols %in% names(s_ts1[,sapply(s_ts1, is.numeric)])) {
    s_ts1<-s_ts1%>%mutate(!!cols := replace(!!rlang::sym(cols), is.na(!!rlang::sym(cols)), mean(!!rlang::sym(cols))))
  }
  else {

    s_ts1<-s_ts1%>%mutate(!!cols := replace(!!rlang::sym(cols), !!rlang::sym(cols)=="", getmode(!!rlang::sym(cols))))

  }
}

#rounding train
s_t1<- as_tibble(s_t1) %>% mutate_at(vars(DOM,Lot.Size,Lot.Square.Footage), funs(round(., 0)))

#rounding test
s_ts1<- as_tibble(s_ts1) %>% mutate_at(vars(DOM,Lot.Size,Lot.Square.Footage), funs(round(., 0)))

#checking if empty
list_na <- colnames(s_t1)[ apply(s_t1, 2, anyNA) ]
list_na

```

```
## character(0)
```

```
list_na <- colnames(s_t1)[ apply(s_ts1, 2, anyNA) ]
list_na

```

```
## character(0)
```

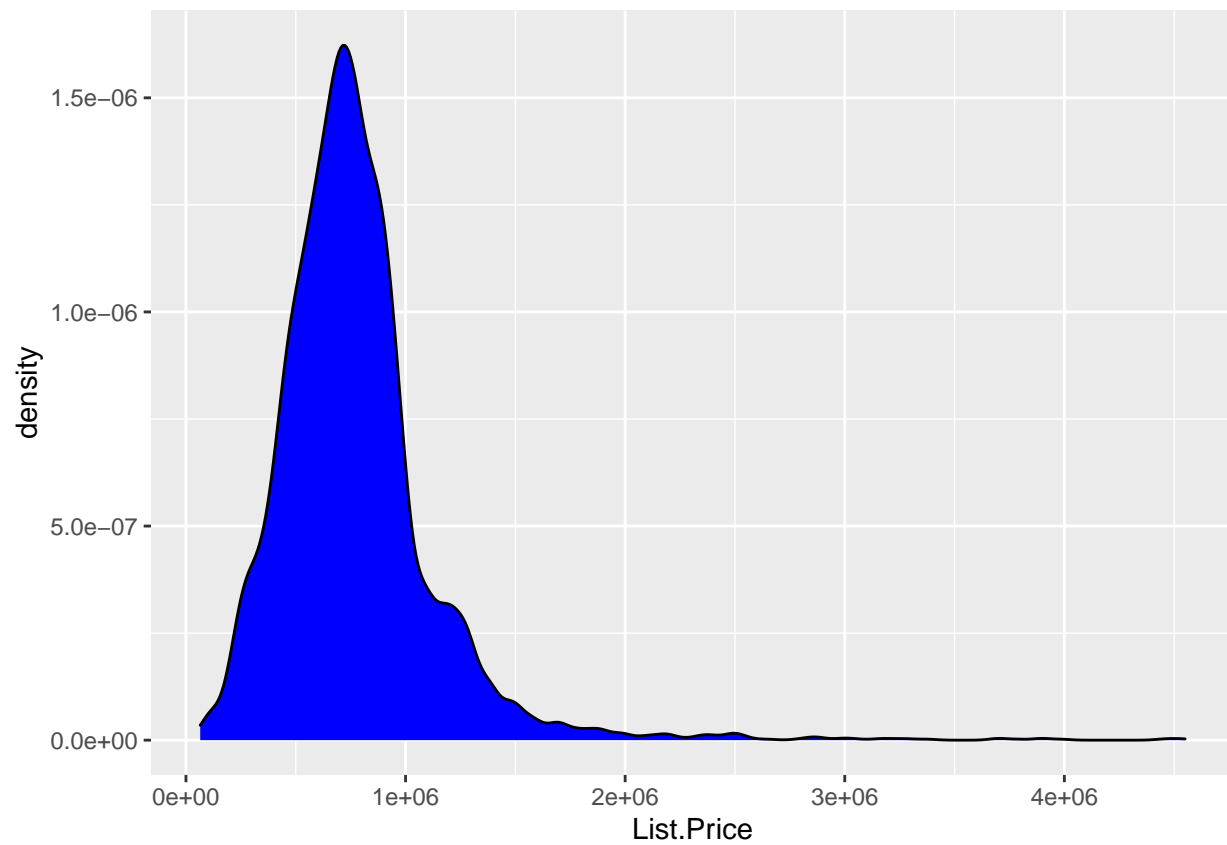
```

#### linear regression ####
library(ggplot2)

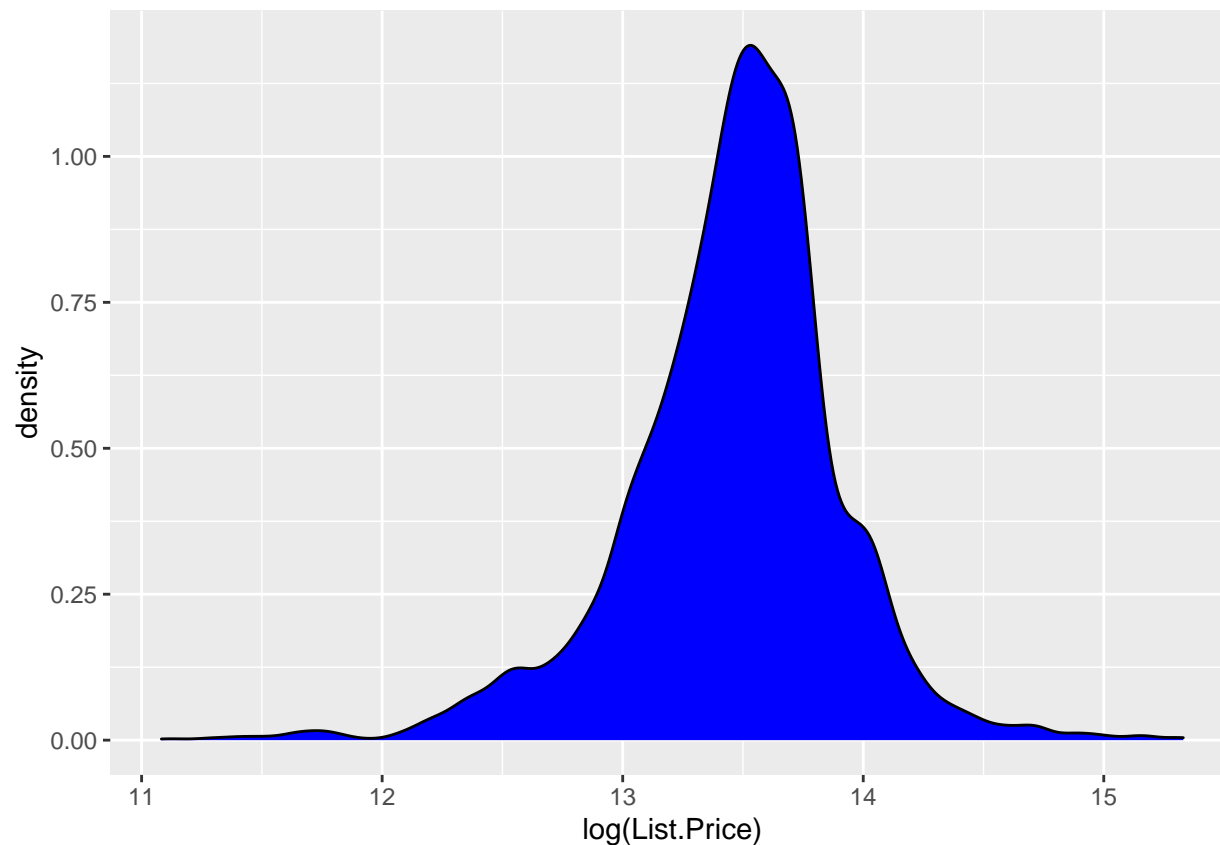
#train data (tr)
tr <- s_t1
#test data (ms)
ms <- s_ts1

#we find that data is normal by applying log
ggplot(tr, aes(List.Price)) + geom_density(fill="blue")

```



```
ggplot(tr, aes(log(List.Price))) + geom_density(fill="blue")
```



```
#Converting the variables to char as there are new rows within test and its causing issue with prediction
tr$Style<- is.character(s_t1$Style)
tr$Exterior <- is.character(s_t1$Exterior)
```

```
ms$Style<- is.character(s_ts1$Style)
ms$Exterior <- is.character(s_ts1$Exterior)
```

```
tr$Energy.Source<- is.character(s_t1$Energy.Source)
ms$Energy.Source <- is.character(s_ts1$Energy.Source)
```

```
#linear regression with training model
model1 <- lm(log(List.Price)~.,data=tr)
summary(model1)
```

```
##
## Call:
## lm(formula = log(List.Price) ~ ., data = tr)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.82039 -0.04625  0.00229  0.04621  0.93466
##
## Coefficients: (4 not defined because of singularities)
##
##              Estimate
## (Intercept)  -3.113e+01
## List.Date    1.595e-04
```

## DOM	7.196e-05
## Zip.Code98027	1.232e-01
## Zip.Code98029	-7.094e-03
## Zip.Code98053	1.207e-02
## Zip.Code98056	6.256e-02
## Zip.Code98074	-2.151e-02
## Zip.Code98075	-2.414e-03
## Zip.Code98704	-5.516e-01
## Area540 - East Of Lake Sam	6.822e-02
## Bedrooms1	-2.184e-01
## Bedrooms2	-4.751e-02
## Bedrooms3	1.742e-02
## Bedrooms4	3.182e-02
## Bedrooms5	1.532e-02
## Bedrooms6	-6.583e-02
## Bedrooms7	-4.966e-02
## Bedrooms9	-5.106e-01
## Bathrooms	2.098e-02
## Sq.Foot	1.307e-04
## Lot.Size	-6.422e-08
## StyleTRUE	NA
## GarageCarport-Attached	-7.891e-02
## GarageCarport-Attached, Carport-Detached, Garage-Attached	-1.224e-02
## GarageCarport-Attached, Carport-Detached, Garage-Detached, Off Street	5.393e-01
## GarageCarport-Attached, Garage-Attached	-8.217e-03
## GarageCarport-Attached, Garage-Attached, Garage-Detached	-1.932e-01
## GarageCarport-Attached, Garage-Attached, Off Street	-1.324e-01
## GarageCarport-Attached, Garage-Detached	-6.554e-01
## GarageCarport-Attached, Garage-Detached, Off Street	2.265e-02
## GarageCarport-Attached, Off Street	-7.692e-02
## GarageCarport-Detached	8.411e-02
## GarageCarport-Detached, Garage-Attached	-1.527e-01
## GarageCarport-Detached, Garage-Attached, Garage-Detached	-1.538e-01
## GarageCarport-Detached, Garage-Attached, Off Street	-7.772e-02
## GarageCarport-Detached, Garage-Detached	5.706e-02
## GarageCarport-Detached, Off Street	-1.385e-01
## GarageCarport, Individual Garage	3.387e-03
## GarageCarport, Off Street	-4.795e-03
## GarageCarport, Uncovered	1.571e-02
## GarageCommon Garage	-2.694e-01
## GarageCommon Garage, Off Street	-6.199e-02
## GarageCommon Garage, Uncovered	-4.404e-03
## GarageGarage-Attached	-5.214e-02
## GarageGarage-Attached, Garage-Detached	-1.073e-01
## GarageGarage-Attached, Garage-Detached, None, Off Street	-2.457e-01
## GarageGarage-Attached, Garage-Detached, Off Street	-9.315e-02
## GarageGarage-Attached, Off Street	-3.932e-02
## GarageGarage-Detached	4.121e-02
## GarageGarage-Detached, None	4.768e-01
## GarageGarage-Detached, Off Street	3.403e-02
## GarageIndividual Garage	2.709e-01
## GarageIndividual Garage, Off Street	2.045e-01
## GarageIndividual Garage, Off Street, Uncovered	1.199e-01
## GarageIndividual Garage, Uncovered	1.733e-01

## GarageNone	-3.974e-02
## GarageNone, Off Street	-3.380e-01
## GarageNone, Uncovered	-3.745e-01
## GarageOff Street	6.869e-02
## GarageOff Street, Uncovered	-2.245e-01
## GarageUncovered	-1.642e-01
## ExteriorTRUE	NA
## Property.TypeManufactured Homes	3.231e-01
## Property.TypeResidential	6.049e-01
## Latitude	-4.228e-02
## Longitude	-3.044e-01
## Taxes.Annual	1.112e-07
## Building.ConditionFair	2.294e-02
## Building.ConditionFixer	-2.834e-02
## Building.ConditionGood	2.310e-02
## Building.ConditionRemodeled	5.784e-02
## Building.ConditionRestored	2.125e-01
## Building.ConditionUnder Construction	7.653e-02
## Building.ConditionVery Good	3.807e-02
## Energy.SourceTRUE	NA
## Lot.Square.Footage	NA
## Parking.Covered.Total	2.642e-02
## Year.Built	2.762e-03
## Bank.Or.Real.Estate.OwnedTRUE	-1.614e-01
## Occupant.TypePresale	3.227e-02
## Occupant.TypeTenant	-3.155e-02
## Occupant.TypeVacant	-8.732e-03
## Original.Price	4.404e-07
## Publish.to.InternetTRUE	6.188e-02
## RoofBuilt-Up, Cedar Shake	-5.039e-01
## RoofBuilt-Up, Composition	-2.466e-01
## RoofBuilt-Up, Composition, Torch Down	2.670e-01
## RoofBuilt-Up, Flat, Torch Down	1.819e-01
## RoofBuilt-Up, Torch Down	1.404e-01
## RoofCedar Shake	-2.757e-01
## RoofCedar Shake, Composition	-3.453e-01
## RoofCedar Shake, Flat	-2.530e-01
## RoofCedar Shake, Flat, See Remarks	-2.577e-01
## RoofCedar Shake, See Remarks	-3.782e-01
## RoofComposition	-2.945e-01
## RoofComposition, Flat	-2.832e-01
## RoofComposition, Flat, Green (Living)	-2.846e-01
## RoofComposition, Metal	-2.284e-01
## RoofComposition, Metal, See Remarks	1.530e-01
## RoofComposition, See Remarks	-2.711e-01
## RoofComposition, Torch Down	-1.292e-01
## RoofFlat	-9.203e-02
## RoofFlat, See Remarks	-4.940e-01
## RoofFlat, Torch Down	-4.074e-02
## RoofGreen (Living)	-2.485e-01
## RoofMetal	-2.254e-01
## RoofMetal, See Remarks	-3.756e-01
## RoofMetal, Tile	-3.833e-01
## RoofSee Remarks	-2.530e-01

## RoofSee Remarks, Tile	-2.474e-01
## RoofTile	-2.750e-01
## RoofTorch Down	-1.273e-01
## School.DistrictFederal Way	2.266e-01
## School.DistrictIssaquah	9.655e-02
## School.DistrictLake Washington	9.107e-02
## School.DistrictSnohomish	1.887e-01
## School.DistrictSnoqualmie Valley	6.167e-02
## Sewer.TypeAvailable, Septic	5.711e-02
## Sewer.TypeAvailable, Sewer Connected	1.694e-02
## Sewer.TypeNone	-2.038e-02
## Sewer.TypeSeptic	1.295e-02
## Sewer.TypeSewer Connected	1.057e-02
## Show.Addresssto.PublicTRUE	1.297e-03
## Show.Map.LinkTRUE	-7.622e-02
## CommunityAldarra	3.296e-02
## CommunityBeaver Lake	5.040e-02
## CommunityEast Lake Sammamish	1.013e-01
## CommunityHeritage Hills	4.010e-02
## CommunityHidden Ridge	1.113e-01
## CommunityInglewood	-2.088e-02
## CommunityIssaquah	1.426e-01
## CommunityIssaquah-Fall City Rd	9.542e-02
## CommunityIssaquah/Sammamish	2.091e-02
## CommunityKlahanie	6.473e-02
## CommunityLake Sammamish	2.121e-01
## CommunityPine Lake	6.251e-02
## CommunityPlateau	5.461e-02
## CommunityProvidence Point	-2.129e-01
## CommunityRedford Ranch	-2.788e-02
## CommunityRedmond	1.159e-01
## CommunitySahalee	8.091e-02
## CommunitySammamish	5.102e-02
## CommunitySouth Lake Sammamish	8.727e-02
## CommunityThompson Hill	2.416e-03
## CommunityTimberline	6.648e-02
## CommunityTrossachs	3.571e-02
## CommunityVintage	1.986e-02
##	Std. Error
## (Intercept)	1.719e+01
## List.Date	4.176e-06
## DOM	3.780e-05
## Zip.Code98027	1.604e-01
## Zip.Code98029	1.268e-01
## Zip.Code98053	1.752e-01
## Zip.Code98056	1.740e-01
## Zip.Code98074	1.260e-01
## Zip.Code98075	1.238e-01
## Zip.Code98704	1.808e-01
## Area540 - East Of Lake Sam	9.203e-02
## Bedrooms1	3.508e-02
## Bedrooms2	3.291e-02
## Bedrooms3	3.218e-02
## Bedrooms4	3.239e-02

## Bedrooms5	3.307e-02
## Bedrooms6	3.658e-02
## Bedrooms7	8.057e-02
## Bedrooms9	1.298e-01
## Bathrooms	4.260e-03
## Sq.Foot	4.048e-06
## Lot.Size	2.087e-08
## StyleTRUE	NA
## GarageCarport-Attached	1.007e-01
## GarageCarport-Attached, Carport-Detached, Garage-Attached	1.574e-01
## GarageCarport-Attached, Carport-Detached, Garage-Detached, Off Street	1.577e-01
## GarageCarport-Attached, Garage-Attached	1.020e-01
## GarageCarport-Attached, Garage-Attached, Garage-Detached	1.323e-01
## GarageCarport-Attached, Garage-Attached, Off Street	1.316e-01
## GarageCarport-Attached, Garage-Detached	1.641e-01
## GarageCarport-Attached, Garage-Detached, Off Street	1.575e-01
## GarageCarport-Attached, Off Street	1.159e-01
## GarageCarport-Detached	1.036e-01
## GarageCarport-Detached, Garage-Attached	1.095e-01
## GarageCarport-Detached, Garage-Attached, Garage-Detached	1.591e-01
## GarageCarport-Detached, Garage-Attached, Off Street	1.580e-01
## GarageCarport-Detached, Garage-Detached	1.163e-01
## GarageCarport-Detached, Off Street	1.327e-01
## GarageCarport, Individual Garage	5.245e-02
## GarageCarport, Off Street	1.269e-01
## GarageCarport, Uncovered	6.149e-02
## GarageCommon Garage	5.098e-02
## GarageCommon Garage, Off Street	9.958e-02
## GarageCommon Garage, Uncovered	4.940e-02
## GarageGarage-Attached	9.880e-02
## GarageGarage-Attached, Garage-Detached	1.031e-01
## GarageGarage-Attached, Garage-Detached, None, Off Street	1.574e-01
## GarageGarage-Attached, Garage-Detached, Off Street	1.141e-01
## GarageGarage-Attached, Off Street	9.947e-02
## GarageGarage-Detached	9.967e-02
## GarageGarage-Detached, None	1.578e-01
## GarageGarage-Detached, Off Street	1.049e-01
## GarageIndividual Garage	3.642e-02
## GarageIndividual Garage, Off Street	4.386e-02
## GarageIndividual Garage, Off Street, Uncovered	7.879e-02
## GarageIndividual Garage, Uncovered	4.159e-02
## GarageNone	1.016e-01
## GarageNone, Off Street	1.574e-01
## GarageNone, Uncovered	1.297e-01
## GarageOff Street	9.571e-02
## GarageOff Street, Uncovered	7.352e-02
## GarageUncovered	4.925e-02
## ExteriorTRUE	NA
## Property.TypeManufactured Homes	1.225e-01
## Property.TypeResidential	9.291e-02
## Latitude	2.072e-01
## Longitude	1.163e-01
## Taxes.Annual	1.175e-07
## Building.ConditionFair	2.792e-02

## Building.ConditionFixer	2.901e-02
## Building.ConditionGood	1.478e-02
## Building.ConditionRemodeled	1.610e-02
## Building.ConditionRestored	1.483e-01
## Building.ConditionUnder Construction	1.689e-02
## Building.ConditionVery Good	1.447e-02
## Energy.SourceTRUE	NA
## Lot.Square.Footage	NA
## Parking.Covered.Total	3.711e-03
## Year.Built	2.166e-04
## Bank.Or.Real.Estate.OwnedTRUE	1.783e-02
## Occupant.TypePresale	9.300e-03
## Occupant.TypeTenant	1.155e-02
## Occupant.TypeVacant	4.042e-03
## Original.Price	8.295e-09
## Publish.to.InternetTRUE	1.955e-02
## RoofBuilt-Up, Cedar Shake	1.529e-01
## RoofBuilt-Up, Composition	9.695e-02
## RoofBuilt-Up, Composition, Torch Down	1.528e-01
## RoofBuilt-Up, Flat, Torch Down	1.505e-01
## RoofBuilt-Up, Torch Down	1.240e-01
## RoofCedar Shake	8.815e-02
## RoofCedar Shake, Composition	1.042e-01
## RoofCedar Shake, Flat	1.237e-01
## RoofCedar Shake, Flat, See Remarks	1.506e-01
## RoofCedar Shake, See Remarks	1.073e-01
## RoofComposition	8.803e-02
## RoofComposition, Flat	9.978e-02
## RoofComposition, Flat, Green (Living)	1.551e-01
## RoofComposition, Metal	9.809e-02
## RoofComposition, Metal, See Remarks	1.506e-01
## RoofComposition, See Remarks	9.353e-02
## RoofComposition, Torch Down	9.654e-02
## RoofFlat	1.040e-01
## RoofFlat, See Remarks	1.507e-01
## RoofFlat, Torch Down	1.075e-01
## RoofGreen (Living)	1.502e-01
## RoofMetal	8.915e-02
## RoofMetal, See Remarks	1.233e-01
## RoofMetal, Tile	1.072e-01
## RoofSee Remarks	9.126e-02
## RoofSee Remarks, Tile	1.231e-01
## RoofTile	8.912e-02
## RoofTorch Down	9.398e-02
## School.DistrictFederal Way	1.769e-01
## School.DistrictIssaquah	1.222e-01
## School.DistrictLake Washington	1.243e-01
## School.DistrictSnohomish	1.438e-01
## School.DistrictSnoqualmie Valley	1.258e-01
## Sewer.TypeAvailable, Septic	2.232e-02
## Sewer.TypeAvailable, Sewer Connected	2.179e-02
## Sewer.TypeNone	3.995e-02
## Sewer.TypeSeptic	1.335e-02
## Sewer.TypeSewer Connected	1.216e-02

## Show.Addresssto.PublicTRUE	8.684e-02
## Show.Map.LinkTRUE	7.507e-02
## CommunityAldarra	9.247e-02
## CommunityBeaver Lake	8.719e-02
## CommunityEast Lake Sammamish	8.669e-02
## CommunityHeritage Hills	8.743e-02
## CommunityHidden Ridge	8.902e-02
## CommunityInglewood	8.674e-02
## CommunityIssaquah	9.958e-02
## CommunityIssaquah-Fall City Rd	1.522e-01
## CommunityIssaquah/Sammamish	8.758e-02
## CommunityKlahanie	9.163e-02
## CommunityLake Sammamish	8.760e-02
## CommunityPine Lake	8.662e-02
## CommunityPlateau	8.657e-02
## CommunityProvidence Point	1.533e-01
## CommunityRedford Ranch	9.974e-02
## CommunityRedmond	1.116e-01
## CommunitySahalee	8.681e-02
## CommunitySammamish	8.637e-02
## CommunitySouth Lake Sammamish	1.627e-01
## CommunityThompson Hill	8.907e-02
## CommunityTimberline	8.676e-02
## CommunityTrossachs	8.721e-02
## CommunityVintage	8.723e-02
##	t value
## (Intercept)	-1.810
## List.Date	38.195
## DOM	1.904
## Zip.Code98027	0.768
## Zip.Code98029	-0.056
## Zip.Code98053	0.069
## Zip.Code98056	0.360
## Zip.Code98074	-0.171
## Zip.Code98075	-0.019
## Zip.Code98704	-3.051
## Area540 - East Of Lake Sam	0.741
## Bedrooms1	-6.226
## Bedrooms2	-1.444
## Bedrooms3	0.541
## Bedrooms4	0.983
## Bedrooms5	0.463
## Bedrooms6	-1.799
## Bedrooms7	-0.616
## Bedrooms9	-3.934
## Bathrooms	4.926
## Sq.Foot	32.296
## Lot.Size	-3.078
## StyleTRUE	NA
## GarageCarport-Attached	-0.784
## GarageCarport-Attached, Carport-Detached, Garage-Attached	-0.078
## GarageCarport-Attached, Carport-Detached, Garage-Detached, Off Street	3.420
## GarageCarport-Attached, Garage-Attached	-0.081
## GarageCarport-Attached, Garage-Attached, Garage-Detached	-1.461

## GarageCarport-Attached, Garage-Attached, Off Street	-1.006
## GarageCarport-Attached, Garage-Detached	-3.993
## GarageCarport-Attached, Garage-Detached, Off Street	0.144
## GarageCarport-Attached, Off Street	-0.664
## GarageCarport-Detached	0.812
## GarageCarport-Detached, Garage-Attached	-1.394
## GarageCarport-Detached, Garage-Attached, Garage-Detached	-0.967
## GarageCarport-Detached, Garage-Attached, Off Street	-0.492
## GarageCarport-Detached, Garage-Detached	0.491
## GarageCarport-Detached, Off Street	-1.044
## GarageCarport, Individual Garage	0.065
## GarageCarport, Off Street	-0.038
## GarageCarport, Uncovered	0.255
## GarageCommon Garage	-5.285
## GarageCommon Garage, Off Street	-0.622
## GarageCommon Garage, Uncovered	-0.089
## GarageGarage-Attached	-0.528
## GarageGarage-Attached, Garage-Detached	-1.041
## GarageGarage-Attached, Garage-Detached, None, Off Street	-1.562
## GarageGarage-Attached, Garage-Detached, Off Street	-0.816
## GarageGarage-Attached, Off Street	-0.395
## GarageGarage-Detached	0.413
## GarageGarage-Detached, None	3.021
## GarageGarage-Detached, Off Street	0.324
## GarageIndividual Garage	7.440
## GarageIndividual Garage, Off Street	4.662
## GarageIndividual Garage, Off Street, Uncovered	1.522
## GarageIndividual Garage, Uncovered	4.166
## GarageNone	-0.391
## GarageNone, Off Street	-2.147
## GarageNone, Uncovered	-2.888
## GarageOff Street	0.718
## GarageOff Street, Uncovered	-3.053
## GarageUncovered	-3.333
## ExteriorTRUE	NA
## Property.TypeManufactured Homes	2.638
## Property.TypeResidential	6.511
## Latitude	-0.204
## Longitude	-2.617
## Taxes.Annual	0.946
## Building.ConditionFair	0.822
## Building.ConditionFixer	-0.977
## Building.ConditionGood	1.563
## Building.ConditionRemodeled	3.593
## Building.ConditionRestored	1.433
## Building.ConditionUnder Construction	4.532
## Building.ConditionVery Good	2.631
## Energy.SourceTRUE	NA
## Lot.Square.Footage	NA
## Parking.Covered.Total	7.119
## Year.Built	12.752
## Bank.Or.Real.Estate.OwnedTRUE	-9.051
## Occupant.TypePresale	3.469
## Occupant.TypeTenant	-2.731

## Occupant.TypeVacant	-2.160
## Original.Price	53.096
## Publish.to.InternetTRUE	3.165
## RoofBuilt-Up, Cedar Shake	-3.296
## RoofBuilt-Up, Composition	-2.544
## RoofBuilt-Up, Composition, Torch Down	1.747
## RoofBuilt-Up, Flat, Torch Down	1.209
## RoofBuilt-Up, Torch Down	1.132
## RoofCedar Shake	-3.128
## RoofCedar Shake, Composition	-3.314
## RoofCedar Shake, Flat	-2.045
## RoofCedar Shake, Flat, See Remarks	-1.712
## RoofCedar Shake, See Remarks	-3.525
## RoofComposition	-3.346
## RoofComposition, Flat	-2.838
## RoofComposition, Flat, Green (Living)	-1.835
## RoofComposition, Metal	-2.328
## RoofComposition, Metal, See Remarks	1.016
## RoofComposition, See Remarks	-2.898
## RoofComposition, Torch Down	-1.338
## RoofFlat	-0.885
## RoofFlat, See Remarks	-3.279
## RoofFlat, Torch Down	-0.379
## RoofGreen (Living)	-1.654
## RoofMetal	-2.528
## RoofMetal, See Remarks	-3.046
## RoofMetal, Tile	-3.574
## RoofSee Remarks	-2.772
## RoofSee Remarks, Tile	-2.010
## RoofTile	-3.086
## RoofTorch Down	-1.355
## School.DistrictFederal Way	1.281
## School.DistrictIssaquah	0.790
## School.DistrictLake Washington	0.732
## School.DistrictSnohomish	1.312
## School.DistrictSnoqualmie Valley	0.490
## Sewer.TypeAvailable, Septic	2.559
## Sewer.TypeAvailable, Sewer Connected	0.778
## Sewer.TypeNone	-0.510
## Sewer.TypeSeptic	0.970
## Sewer.TypeSewer Connected	0.869
## Show.Addresssto.PublicTRUE	0.015
## Show.Map.LinkTRUE	-1.015
## CommunityAldarra	0.356
## CommunityBeaver Lake	0.578
## CommunityEast Lake Sammamish	1.169
## CommunityHeritage Hills	0.459
## CommunityHidden Ridge	1.250
## CommunityInglewood	-0.241
## CommunityIssaquah	1.432
## CommunityIssaquah-Fall City Rd	0.627
## CommunityIssaquah/Sammamish	0.239
## CommunityKlahanie	0.706
## CommunityLake Sammamish	2.422

## CommunityPine Lake	0.722
## CommunityPlateau	0.631
## CommunityProvidence Point	-1.389
## CommunityRedford Ranch	-0.279
## CommunityRedmond	1.038
## CommunitySahalee	0.932
## CommunitySammamish	0.591
## CommunitySouth Lake Sammamish	0.536
## CommunityThompson Hill	0.027
## CommunityTimberline	0.766
## CommunityTrossachs	0.409
## CommunityVintage	0.228
##	Pr(> t)
## (Intercept)	0.070281
## List.Date	< 2e-16
## DOM	0.057011
## Zip.Code98027	0.442472
## Zip.Code98029	0.955391
## Zip.Code98053	0.945068
## Zip.Code98056	0.719148
## Zip.Code98074	0.864432
## Zip.Code98075	0.984445
## Zip.Code98704	0.002295
## Area540 - East Of Lake Sam	0.458571
## Bedrooms1	5.20e-10
## Bedrooms2	0.148877
## Bedrooms3	0.588288
## Bedrooms4	0.325880
## Bedrooms5	0.643065
## Bedrooms6	0.072010
## Bedrooms7	0.537672
## Bedrooms9	8.47e-05
## Bathrooms	8.69e-07
## Sq.Foot	< 2e-16
## Lot.Size	0.002096
## StyleTRUE	NA
## GarageCarport-Attached	0.433099
## GarageCarport-Attached, Carport-Detached, Garage-Attached	0.938016
## GarageCarport-Attached, Carport-Detached, Garage-Detached, Off Street	0.000631
## GarageCarport-Attached, Garage-Attached	0.935783
## GarageCarport-Attached, Garage-Attached, Garage-Detached	0.144093
## GarageCarport-Attached, Garage-Attached, Off Street	0.314386
## GarageCarport-Attached, Garage-Detached	6.62e-05
## GarageCarport-Attached, Garage-Detached, Off Street	0.885687
## GarageCarport-Attached, Off Street	0.507018
## GarageCarport-Detached	0.416810
## GarageCarport-Detached, Garage-Attached	0.163397
## GarageCarport-Detached, Garage-Attached, Garage-Detached	0.333687
## GarageCarport-Detached, Garage-Attached, Off Street	0.622792
## GarageCarport-Detached, Garage-Detached	0.623735
## GarageCarport-Detached, Off Street	0.296560
## GarageCarport, Individual Garage	0.948519
## GarageCarport, Off Street	0.969847
## GarageCarport, Uncovered	0.798363

## GarageCommon Garage	1.31e-07
## GarageCommon Garage, Off Street	0.533655
## GarageCommon Garage, Uncovered	0.928955
## GarageGarage-Attached	0.597699
## GarageGarage-Attached, Garage-Detached	0.298010
## GarageGarage-Attached, Garage-Detached, None, Off Street	0.118455
## GarageGarage-Attached, Garage-Detached, Off Street	0.414274
## GarageGarage-Attached, Off Street	0.692686
## GarageGarage-Detached	0.679267
## GarageGarage-Detached, None	0.002530
## GarageGarage-Detached, Off Street	0.745689
## GarageIndividual Garage	1.19e-13
## GarageIndividual Garage, Off Street	3.22e-06
## GarageIndividual Garage, Off Street, Uncovered	0.128151
## GarageIndividual Garage, Uncovered	3.15e-05
## GarageNone	0.695694
## GarageNone, Off Street	0.031813
## GarageNone, Uncovered	0.003897
## GarageOff Street	0.473010
## GarageOff Street, Uncovered	0.002275
## GarageUncovered	0.000865
## ExteriorTRUE	NA
## Property.TypeManufactured Homes	0.008369
## Property.TypeResidential	8.22e-11
## Latitude	0.838338
## Longitude	0.008903
## Taxes.Annual	0.343989
## Building.ConditionFair	0.411353
## Building.ConditionFixer	0.328656
## Building.ConditionGood	0.118142
## Building.ConditionRemodeled	0.000330
## Building.ConditionRestored	0.152001
## Building.ConditionUnder Construction	5.99e-06
## Building.ConditionVery Good	0.008536
## Energy.SourceTRUE	NA
## Lot.Square.Footage	NA
## Parking.Covered.Total	1.25e-12
## Year.Built	< 2e-16
## Bank.Or.Real.Estate.OwnedTRUE	< 2e-16
## Occupant.TypePresale	0.000526
## Occupant.TypeTenant	0.006333
## Occupant.TypeVacant	0.030788
## Original.Price	< 2e-16
## Publish.to.InternetTRUE	0.001559
## RoofBuilt-Up, Cedar Shake	0.000989
## RoofBuilt-Up, Composition	0.011005
## RoofBuilt-Up, Composition, Torch Down	0.080759
## RoofBuilt-Up, Flat, Torch Down	0.226754
## RoofBuilt-Up, Torch Down	0.257530
## RoofCedar Shake	0.001772
## RoofCedar Shake, Composition	0.000927
## RoofCedar Shake, Flat	0.040900
## RoofCedar Shake, Flat, See Remarks	0.087035
## RoofCedar Shake, See Remarks	0.000428

## RoofComposition	0.000827
## RoofComposition, Flat	0.004556
## RoofComposition, Flat, Green (Living)	0.066540
## RoofComposition, Metal	0.019927
## RoofComposition, Metal, See Remarks	0.309912
## RoofComposition, See Remarks	0.003769
## RoofComposition, Torch Down	0.180853
## RoofFlat	0.376086
## RoofFlat, See Remarks	0.001049
## RoofFlat, Torch Down	0.704645
## RoofGreen (Living)	0.098118
## RoofMetal	0.011508
## RoofMetal, See Remarks	0.002333
## RoofMetal, Tile	0.000356
## RoofSee Remarks	0.005592
## RoofSee Remarks, Tile	0.044536
## RoofTile	0.002040
## RoofTorch Down	0.175489
## School.DistrictFederal Way	0.200361
## School.DistrictIssaquah	0.429715
## School.DistrictLake Washington	0.463912
## School.DistrictSnohomish	0.189703
## School.DistrictSnoqualmie Valley	0.624096
## Sewer.TypeAvailable, Septic	0.010539
## Sewer.TypeAvailable, Sewer Connected	0.436840
## Sewer.TypeNone	0.610073
## Sewer.TypeSeptic	0.332139
## Sewer.TypeSewer Connected	0.384883
## Show.Addresssto.PublicTRUE	0.988084
## Show.Map.LinkTRUE	0.309960
## CommunityAldarra	0.721550
## CommunityBeaver Lake	0.563278
## CommunityEast Lake Sammamish	0.242626
## CommunityHeritage Hills	0.646475
## CommunityHidden Ridge	0.211414
## CommunityInglewood	0.809797
## CommunityIssaquah	0.152224
## CommunityIssaquah-Fall City Rd	0.530685
## CommunityIssaquah/Sammamish	0.811298
## CommunityKlahanie	0.479940
## CommunityLake Sammamish	0.015484
## CommunityPine Lake	0.470511
## CommunityPlateau	0.528227
## CommunityProvidence Point	0.164897
## CommunityRedford Ranch	0.779882
## CommunityRedmond	0.299319
## CommunitySahalee	0.351341
## CommunitySammamish	0.554695
## CommunitySouth Lake Sammamish	0.591752
## CommunityThompson Hill	0.978359
## CommunityTimberline	0.443529
## CommunityTrossachs	0.682245
## CommunityVintage	0.819884
##	


```

## (Intercept) .
## List.Date ***
## DOM .
## Zip.Code98027
## Zip.Code98029
## Zip.Code98053
## Zip.Code98056
## Zip.Code98074
## Zip.Code98075
## Zip.Code98704 **
## Area540 - East Of Lake Sam
## Bedrooms1 ***
## Bedrooms2
## Bedrooms3
## Bedrooms4
## Bedrooms5
## Bedrooms6 .
## Bedrooms7
## Bedrooms9 ***
## Bathrooms ***
## Sq.Foot ***
## Lot.Size **
## StyleTRUE
## GarageCarport-Attached
## GarageCarport-Attached, Carport-Detached, Garage-Attached
## GarageCarport-Attached, Carport-Detached, Garage-Detached, Off Street ***
## GarageCarport-Attached, Garage-Attached
## GarageCarport-Attached, Garage-Attached, Garage-Detached
## GarageCarport-Attached, Garage-Attached, Off Street
## GarageCarport-Attached, Garage-Detached ***
## GarageCarport-Attached, Garage-Detached, Off Street
## GarageCarport-Attached, Off Street
## GarageCarport-Detached
## GarageCarport-Detached, Garage-Attached
## GarageCarport-Detached, Garage-Attached, Garage-Detached
## GarageCarport-Detached, Garage-Attached, Off Street
## GarageCarport-Detached, Garage-Detached
## GarageCarport-Detached, Off Street
## GarageCarport, Individual Garage
## GarageCarport, Off Street
## GarageCarport, Uncovered
## GarageCommon Garage ***
## GarageCommon Garage, Off Street
## GarageCommon Garage, Uncovered
## GarageGarage-Attached
## GarageGarage-Attached, Garage-Detached
## GarageGarage-Attached, Garage-Detached, None, Off Street
## GarageGarage-Attached, Garage-Detached, Off Street
## GarageGarage-Attached, Off Street
## GarageGarage-Detached
## GarageGarage-Detached, None **
## GarageGarage-Detached, Off Street
## GarageIndividual Garage ***
## GarageIndividual Garage, Off Street ***

```

```

## GarageIndividual Garage, Off Street, Uncovered
## GarageIndividual Garage, Uncovered ***
## GarageNone
## GarageNone, Off Street *
## GarageNone, Uncovered **
## GarageOff Street
## GarageOff Street, Uncovered **
## GarageUncovered ***
## ExteriorTRUE
## Property.TypeManufactured Homes **
## Property.TypeResidential ***
## Latitude
## Longitude **
## Taxes.Annual
## Building.ConditionFair
## Building.ConditionFixer
## Building.ConditionGood
## Building.ConditionRemodeled ***
## Building.ConditionRestored
## Building.ConditionUnder Construction ***
## Building.ConditionVery Good **
## Energy.SourceTRUE
## Lot.Square.Footage
## Parking.Covered.Total ***
## Year.Built ***
## Bank.Or.Real.Estate.OwnedTRUE ***
## Occupant.TypePresale ***
## Occupant.TypeTenant **
## Occupant.TypeVacant *
## Original.Price ***
## Publish.to.InternetTRUE **
## RoofBuilt-Up, Cedar Shake ***
## RoofBuilt-Up, Composition *
## RoofBuilt-Up, Composition, Torch Down .
## RoofBuilt-Up, Flat, Torch Down
## RoofBuilt-Up, Torch Down
## RoofCedar Shake **
## RoofCedar Shake, Composition ***
## RoofCedar Shake, Flat *
## RoofCedar Shake, Flat, See Remarks .
## RoofCedar Shake, See Remarks ***
## RoofComposition ***
## RoofComposition, Flat **
## RoofComposition, Flat, Green (Living) .
## RoofComposition, Metal *
## RoofComposition, Metal, See Remarks
## RoofComposition, See Remarks **
## RoofComposition, Torch Down
## RoofFlat
## RoofFlat, See Remarks **
## RoofFlat, Torch Down
## RoofGreen (Living) .
## RoofMetal *
## RoofMetal, See Remarks **

```

```

## RoofMetal, Tile ***
## RoofSee Remarks **
## RoofSee Remarks, Tile *
## RoofTile **
## RoofTorch Down
## School.DistrictFederal Way
## School.DistrictIssaquah
## School.DistrictLake Washington
## School.DistrictSnohomish
## School.DistrictSnoqualmie Valley
## Sewer.TypeAvailable, Septic *
## Sewer.TypeAvailable, Sewer Connected
## Sewer.TypeNone
## Sewer.TypeSeptic
## Sewer.TypeSewer Connected
## Show.Addresssto.PublicTRUE
## Show.Map.LinkTRUE
## CommunityAldarra
## CommunityBeaver Lake
## CommunityEast Lake Sammamish
## CommunityHeritage Hills
## CommunityHidden Ridge
## CommunityInglewood
## CommunityIssaquah
## CommunityIssaquah-Fall City Rd
## CommunityIssaquah/Sammamish
## CommunityKlahanie
## CommunityLake Sammamish *
## CommunityPine Lake
## CommunityPlateau
## CommunityProvidence Point
## CommunityRedford Ranch
## CommunityRedmond
## CommunitySahalee
## CommunitySammamish
## CommunitySouth Lake Sammamish
## CommunityThompson Hill
## CommunityTimberline
## CommunityTrossachs
## CommunityVintage
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1216 on 4786 degrees of freedom
## Multiple R-squared:  0.9284, Adjusted R-squared:  0.9262
## F-statistic: 433.8 on 143 and 4786 DF,  p-value: < 2.2e-16

```

```

#function for getting rmse & r2
eval_results <- function(true, predicted, df) {
  SSE <- sum((predicted - true)^2)
  SST <- sum((true - mean(true))^2)
  R_square <- 1 - SSE / SST
  RMSE = sqrt(SSE/nrow(df))
}

```

```

# Model performance metrics
data.frame(
  RMSE = RMSE,
  Rsquare = R_square
)

}

#prediction with training model
pred_test0<-predict(model1, newdata=tr)

```

```

## Warning in predict.lm(model1, newdata = tr): prediction from a rank-deficient
## fit may be misleading

```

```
exp(pred_test0)
```

##	1	2	3	4	5	6	7
##	4499000.0	5207824.1	2598121.1	3091488.7	2043392.9	2656648.0	2231283.0
##	8	9	10	11	12	13	14
##	2122020.1	2212689.3	1963581.4	1613746.5	1945092.3	1878950.7	1480188.9
##	15	16	17	18	19	20	21
##	1332063.8	1792110.0	1500679.6	1496506.8	1392701.7	667625.4	1452039.1
##	22	23	24	25	26	27	28
##	1378418.4	1513482.4	1195166.1	1569725.7	1087251.5	1422883.6	1499800.0
##	29	30	31	32	33	34	35
##	697698.3	1244499.7	1152037.6	811515.4	1205202.6	921788.7	1138650.7
##	36	37	38	39	40	41	42
##	836979.0	1117117.0	1293960.7	682931.9	998534.3	1135610.4	1091888.1
##	43	44	45	46	47	48	49
##	951732.5	887097.0	1149678.0	1209563.0	752909.7	1079563.5	1085030.6
##	50	51	52	53	54	55	56
##	1123329.4	1224521.3	1024073.3	1148611.0	1071165.7	1060847.3	997100.9
##	57	58	59	60	61	62	63
##	1252834.6	1065352.2	965956.7	942910.4	1039401.7	1351973.1	1784258.4
##	64	65	66	67	68	69	70
##	798900.4	1208185.9	1098000.0	886982.5	1047005.6	1028771.8	910734.5
##	71	72	73	74	75	76	77
##	1206327.2	1067329.9	874928.1	915323.5	1059092.8	1016343.1	529593.7
##	78	79	80	81	82	83	84
##	2574051.8	957029.8	928246.5	1089391.4	973534.5	724753.4	692702.3
##	85	86	87	88	89	90	91
##	1062120.2	930827.5	929150.9	951815.9	767280.1	950851.2	1101212.4
##	92	93	94	95	96	97	98
##	949634.1	851613.6	865615.5	969390.9	865669.5	958222.6	867480.4
##	99	100	101	102	103	104	105
##	1074762.6	857399.2	773933.8	624445.6	925344.3	917825.2	731794.3
##	106	107	108	109	110	111	112
##	949850.5	890798.6	775849.4	793928.5	856624.5	900240.9	882071.6
##	113	114	115	116	117	118	119
##	959432.6	876628.9	583755.5	900237.8	928354.8	882157.3	999392.7
##	120	121	122	123	124	125	126
##	942962.0	706775.4	824731.7	893811.8	839194.7	854957.6	839002.7

##	127	128	129	130	131	132	133
##	887440.3	880577.0	882606.8	879683.4	944262.0	801838.3	794541.0
##	134	135	136	137	138	139	140
##	887417.3	879478.4	840399.7	857579.6	908551.7	857152.6	823220.5
##	141	142	143	144	145	146	147
##	877691.1	765257.0	736601.0	743876.2	789870.9	884298.0	828809.2
##	148	149	150	151	152	153	154
##	819050.3	892650.3	892348.2	809576.1	905190.9	845609.8	829327.3
##	155	156	157	158	159	160	161
##	796860.9	897564.6	862678.5	833891.4	819469.0	869273.9	813498.6
##	162	163	164	165	166	167	168
##	839881.8	750571.3	839143.7	1013721.7	995323.7	848756.8	833270.1
##	169	170	171	172	173	174	175
##	871555.5	838481.0	809149.6	748256.9	759031.7	782005.6	860339.6
##	176	177	178	179	180	181	182
##	843294.5	704468.5	810040.0	1005696.7	912345.4	872263.3	813413.7
##	183	184	185	186	187	188	189
##	786470.1	810977.6	815877.1	924284.0	781983.7	776276.3	798961.1
##	190	191	192	193	194	195	196
##	798812.9	824826.4	734779.4	770662.4	769144.2	782532.5	805937.7
##	197	198	199	200	201	202	203
##	738083.3	807580.1	755757.8	811702.9	873386.8	773786.5	760005.3
##	204	205	206	207	208	209	210
##	810433.1	880035.8	755832.6	758586.7	715874.9	740993.7	745988.8
##	211	212	213	214	215	216	217
##	766626.7	763039.3	787813.6	770482.4	769739.0	703467.4	768562.2
##	218	219	220	221	222	223	224
##	766619.3	693550.7	892806.1	802209.4	748395.9	767298.2	897942.9
##	225	226	227	228	229	230	231
##	715554.7	738398.8	784653.5	716899.0	772945.4	645860.0	762200.2
##	232	233	234	235	236	237	238
##	773384.1	780331.5	790280.6	764070.8	745363.6	772853.1	783715.0
##	239	240	241	242	243	244	245
##	732334.4	814456.1	818442.8	817233.1	774183.0	803372.8	726050.4
##	246	247	248	249	250	251	252
##	742566.1	729469.1	678361.8	750915.5	791374.4	731745.5	788065.1
##	253	254	255	256	257	258	259
##	731282.7	736192.5	746659.5	782868.6	816457.9	708472.2	730853.5
##	260	261	262	263	264	265	266
##	734244.5	819606.6	746409.5	787200.6	730422.5	615142.2	777263.3
##	267	268	269	270	271	272	273
##	553903.0	736391.9	775990.5	728510.8	762428.4	739885.8	744543.3
##	274	275	276	277	278	279	280
##	788330.0	770202.9	754452.5	746093.2	775581.1	841317.2	825934.5
##	281	282	283	284	285	286	287
##	773264.7	719968.8	757578.5	768301.1	714754.2	679284.4	775379.6
##	288	289	290	291	292	293	294
##	780172.7	746683.2	786232.2	735729.4	761571.8	737904.6	759472.7
##	295	296	297	298	299	300	301
##	743444.2	761082.7	691984.5	753472.3	677766.0	689947.4	720100.5
##	302	303	304	305	306	307	308
##	726378.1	745546.4	731468.3	773939.8	754931.1	736768.1	697808.9
##	309	310	311	312	313	314	315
##	825800.5	718112.7	790531.0	765081.9	764085.9	721904.2	737322.7

##	316	317	318	319	320	321	322
##	651872.8	831266.7	816196.7	727881.8	592704.7	742348.9	776104.7
##	323	324	325	326	327	328	329
##	758508.0	657052.0	744077.1	723474.7	754685.4	794838.2	729078.8
##	330	331	332	333	334	335	336
##	738238.5	681766.9	772554.6	725079.2	699631.0	704912.4	720269.6
##	337	338	339	340	341	342	343
##	685201.8	718791.1	705591.4	702442.0	707351.0	741901.0	746616.3
##	344	345	346	347	348	349	350
##	769550.2	743842.5	736645.2	717305.6	719972.5	731219.6	702240.0
##	351	352	353	354	355	356	357
##	748527.2	713025.7	749605.0	643869.9	750393.3	723998.4	695391.9
##	358	359	360	361	362	363	364
##	695632.1	807637.5	714817.7	731011.1	616142.6	700922.7	711825.2
##	365	366	367	368	369	370	371
##	665298.7	678393.2	676108.8	680971.0	714799.5	722456.2	717603.0
##	372	373	374	375	376	377	378
##	705733.7	693104.6	725967.6	719059.5	631593.9	709388.4	700332.5
##	379	380	381	382	383	384	385
##	729090.8	728380.5	720526.0	640425.1	766434.3	687320.8	731543.6
##	386	387	388	389	390	391	392
##	739932.1	687365.4	707411.5	721673.9	685184.8	715241.7	757515.9
##	393	394	395	396	397	398	399
##	698580.0	685000.0	720984.7	706895.8	784077.4	637401.4	744325.3
##	400	401	402	403	404	405	406
##	708384.3	676109.0	688076.1	666146.5	688633.1	714884.2	740340.0
##	407	408	409	410	411	412	413
##	751033.2	791074.4	745332.0	611112.5	772081.2	696669.5	709511.3
##	414	415	416	417	418	419	420
##	698342.8	723874.5	733912.8	593596.7	682574.4	664939.0	629850.3
##	421	422	423	424	425	426	427
##	763664.1	677681.6	694137.0	792735.7	691911.0	685330.7	670225.1
##	428	429	430	431	432	433	434
##	687122.5	691315.1	633104.4	736566.0	676043.4	643011.4	613278.5
##	435	436	437	438	439	440	441
##	628687.8	645551.6	694075.3	700612.1	692539.0	665985.6	677787.4
##	442	443	444	445	446	447	448
##	686102.9	650742.1	687575.9	661849.2	645075.3	656357.8	695917.0
##	449	450	451	452	453	454	455
##	657518.7	643627.8	697254.7	682162.0	628249.3	689112.6	647010.8
##	456	457	458	459	460	461	462
##	611731.3	620690.8	683207.9	648395.5	722062.8	704840.4	628858.4
##	463	464	465	466	467	468	469
##	656373.7	645103.0	671435.9	665004.1	664984.1	577215.7	595255.3
##	470	471	472	473	474	475	476
##	681945.5	704492.1	675605.8	685636.0	673557.9	710920.0	719548.6
##	477	478	479	480	481	482	483
##	651297.6	614323.8	623919.1	645150.9	665035.1	693296.0	668822.7
##	484	485	486	487	488	489	490
##	668197.5	720293.6	656767.3	726685.5	678760.5	767988.1	630810.3
##	491	492	493	494	495	496	497
##	730103.2	679017.8	640677.7	655552.8	687845.0	687854.0	611886.2
##	498	499	500	501	502	503	504
##	617405.3	662543.5	620864.2	609287.5	670659.8	621176.1	639250.9

##	505	506	507	508	509	510	511
##	621734.0	705368.4	650622.6	460562.7	651670.6	651019.3	604739.8
##	512	513	514	515	516	517	518
##	620193.4	697676.8	616761.4	756726.6	617583.2	646601.0	600515.0
##	519	520	521	522	523	524	525
##	604914.2	652124.3	691476.0	630574.0	655633.1	670566.8	632039.1
##	526	527	528	529	530	531	532
##	622178.1	615244.8	643766.1	634357.0	639624.6	611039.4	631149.1
##	533	534	535	536	537	538	539
##	625560.7	776904.7	610357.8	719104.6	587555.5	654442.2	625730.2
##	540	541	542	543	544	545	546
##	6793546.9	669741.6	595161.2	615785.1	611680.9	606010.2	646572.0
##	547	548	549	550	551	552	553
##	634956.3	582482.7	605284.3	717795.5	615178.5	640974.9	590010.1
##	554	555	556	557	558	559	560
##	621999.8	750000.0	665927.4	687271.2	651488.0	570410.4	682065.6
##	561	562	563	564	565	566	567
##	690803.3	635946.8	591279.1	588801.3	609134.1	541824.5	568168.0
##	568	569	570	571	572	573	574
##	600938.7	582852.5	627094.2	604263.3	618000.5	613577.3	623073.1
##	575	576	577	578	579	580	581
##	664537.6	640771.0	674430.0	644548.3	624278.9	578298.2	675210.1
##	582	583	584	585	586	587	588
##	572382.4	602201.4	600428.5	646893.7	588526.0	751236.0	604745.2
##	589	590	591	592	593	594	595
##	631110.2	643264.5	596383.8	642178.5	601049.5	606466.2	623575.1
##	596	597	598	599	600	601	602
##	628780.5	610961.7	584037.8	613296.1	608064.3	612132.9	604857.4
##	603	604	605	606	607	608	609
##	567959.4	632151.7	575481.6	572466.7	709141.0	616323.0	610148.4
##	610	611	612	613	614	615	616
##	587613.5	638012.2	614000.0	574852.0	546600.4	640402.4	589109.9
##	617	618	619	620	621	622	623
##	619135.0	653840.6	545621.2	639613.4	577533.5	616468.0	564191.5
##	624	625	626	627	628	629	630
##	589027.1	528129.9	574110.7	604559.0	611907.4	629898.3	643440.7
##	631	632	633	634	635	636	637
##	566609.6	563462.9	566586.1	658670.1	570213.7	552477.2	569412.5
##	638	639	640	641	642	643	644
##	559459.4	592962.3	644867.5	612279.8	656293.0	542876.7	658426.8
##	645	646	647	648	649	650	651
##	589369.3	616784.6	571947.5	569765.7	576364.1	560597.9	392868.3
##	652	653	654	655	656	657	658
##	513844.7	427054.4	667335.1	580528.6	558638.6	525399.4	647496.7
##	659	660	661	662	663	664	665
##	529221.9	598092.5	630255.8	571632.2	565909.9	451707.2	585773.8
##	666	667	668	669	670	671	672
##	637909.8	603531.9	562127.0	570435.2	612731.6	682984.7	557175.7
##	673	674	675	676	677	678	679
##	526203.3	544926.4	519908.2	549920.3	630306.8	550777.5	542989.6
##	680	681	682	683	684	685	686
##	596911.8	539242.4	644592.8	538190.3	629708.5	581685.1	585595.3
##	687	688	689	690	691	692	693
##	516579.6	615552.7	525944.2	538017.0	566709.2	607070.5	580839.8

##	694	695	696	697	698	699	700
##	488399.2	523755.4	594115.9	648728.7	640326.4	520871.0	552666.4
##	701	702	703	704	705	706	707
##	561485.5	537796.1	607573.5	517725.3	553400.7	576133.1	531379.1
##	708	709	710	711	712	713	714
##	578094.2	458659.7	551256.5	594733.4	529080.0	572965.6	527311.1
##	715	716	717	718	719	720	721
##	573779.5	620002.5	558721.6	606830.2	575467.4	531736.9	545402.9
##	722	723	724	725	726	727	728
##	622960.6	550503.0	568544.6	561235.6	697507.2	636838.0	547707.4
##	729	730	731	732	733	734	735
##	556477.6	552160.3	566887.1	556439.4	575137.0	546246.5	550676.5
##	736	737	738	739	740	741	742
##	531358.9	576714.1	550272.8	538930.3	549831.4	580290.6	582237.5
##	743	744	745	746	747	748	749
##	584414.7	526271.2	599214.6	500595.4	522172.9	556424.4	547691.2
##	750	751	752	753	754	755	756
##	559515.5	553363.4	542230.3	516480.9	540263.7	537071.9	572522.6
##	757	758	759	760	761	762	763
##	578832.4	500341.4	552625.6	520690.2	619881.9	531887.9	543128.8
##	764	765	766	767	768	769	770
##	544269.1	570916.6	494933.8	610829.9	550168.8	516033.7	495617.9
##	771	772	773	774	775	776	777
##	443127.1	444543.2	452340.4	554730.4	525114.3	512034.9	490837.9
##	778	779	780	781	782	783	784
##	500056.5	584908.8	514417.7	524807.9	493202.7	562992.5	548311.7
##	785	786	787	788	789	790	791
##	524452.4	521687.1	552877.9	583084.5	520229.0	583011.1	524751.1
##	792	793	794	795	796	797	798
##	521058.1	489477.2	498690.4	465031.8	586471.5	539234.1	513579.8
##	799	800	801	802	803	804	805
##	507931.3	545934.6	524824.2	535775.3	529560.9	514490.2	541947.3
##	806	807	808	809	810	811	812
##	510086.9	505597.2	505094.2	467173.7	558679.7	499950.0	438194.6
##	813	814	815	816	817	818	819
##	452632.0	430732.0	437775.4	509709.6	555242.5	580890.6	497456.4
##	820	821	822	823	824	825	826
##	548481.5	494077.5	537009.1	503131.6	515646.6	513459.5	508318.9
##	827	828	829	830	831	832	833
##	486575.7	432122.7	495885.7	472488.5	503295.8	462276.8	401634.7
##	834	835	836	837	838	839	840
##	515815.2	469339.4	494894.3	520161.7	551763.1	528005.4	488564.9
##	841	842	843	844	845	846	847
##	504168.3	505148.3	487908.2	490037.0	451608.8	509171.5	593409.9
##	848	849	850	851	852	853	854
##	491220.8	493645.0	511369.1	512813.7	359237.5	436231.7	483998.5
##	855	856	857	858	859	860	861
##	486673.3	507076.3	523552.6	527889.3	473045.3	527238.0	492247.8
##	862	863	864	865	866	867	868
##	561009.8	530698.7	526291.5	505238.3	523798.3	444957.1	473787.7
##	869	870	871	872	873	874	875
##	502387.4	479940.0	378267.8	508441.9	475787.6	463997.3	497011.0
##	876	877	878	879	880	881	882
##	385919.2	463763.6	490894.6	461598.8	389452.0	390011.5	386321.0

##	883	884	885	886	887	888	889
##	464159.1	489819.2	391607.9	486739.3	504086.6	440801.6	509308.2
##	890	891	892	893	894	895	896
##	473661.3	459368.3	452119.1	395152.5	494225.9	527362.4	492051.2
##	897	898	899	900	901	902	903
##	484267.4	421783.5	481347.6	469758.5	498009.5	446729.2	470806.2
##	904	905	906	907	908	909	910
##	521317.0	474874.4	462710.9	440207.4	494518.6	372733.9	379109.1
##	911	912	913	914	915	916	917
##	377157.1	505165.9	448048.2	441647.3	499071.7	462430.5	485353.3
##	918	919	920	921	922	923	924
##	477981.5	494586.4	468149.8	475171.4	532846.4	452951.2	375701.3
##	925	926	927	928	929	930	931
##	379515.0	379241.9	376429.1	486228.7	510279.2	428477.7	550924.4
##	932	933	934	935	936	937	938
##	503623.6	510326.9	371718.8	374456.5	374872.8	511946.6	464479.0
##	939	940	941	942	943	944	945
##	527810.2	489987.1	450818.6	457770.0	372174.4	467721.6	478456.7
##	946	947	948	949	950	951	952
##	489007.6	482650.9	459893.8	522450.8	368935.0	373060.1	494501.8
##	953	954	955	956	957	958	959
##	507201.2	442859.9	491761.3	498239.5	472869.2	455127.9	490025.7
##	960	961	962	963	964	965	966
##	467698.7	453660.5	365268.5	369252.3	371110.8	371753.2	371812.5
##	967	968	969	970	971	972	973
##	521368.5	372816.9	453606.6	480343.0	497756.0	441321.0	446460.5
##	974	975	976	977	978	979	980
##	364589.9	465163.4	381735.7	388770.1	393333.0	434326.8	432808.8
##	981	982	983	984	985	986	987
##	454777.4	487984.5	437647.4	620469.4	448910.0	462369.4	535706.5
##	988	989	990	991	992	993	994
##	488736.1	428694.0	392101.0	439258.0	451357.4	446140.7	409622.1
##	995	996	997	998	999	1000	1001
##	377734.0	507294.7	455460.3	455013.0	374239.5	408808.7	410000.0
##	1002	1003	1004	1005	1006	1007	1008
##	498792.3	390986.2	425136.3	406210.7	441044.1	449733.4	429739.6
##	1009	1010	1011	1012	1013	1014	1015
##	426985.5	456256.0	408472.7	370966.7	447765.6	450139.9	444112.1
##	1016	1017	1018	1019	1020	1021	1022
##	408433.7	533436.7	320715.1	489772.3	431915.0	416164.8	427790.8
##	1023	1024	1025	1026	1027	1028	1029
##	351078.0	427207.5	321227.2	440114.4	480861.9	348399.3	370000.0
##	1030	1031	1032	1033	1034	1035	1036
##	434696.9	388689.5	498291.0	400515.7	328954.1	324980.2	427734.9
##	1037	1038	1039	1040	1041	1042	1043
##	307443.8	315105.9	316585.8	333528.7	441829.2	329359.1	379000.0
##	1044	1045	1046	1047	1048	1049	1050
##	352979.9	349865.1	310159.5	388850.9	413551.5	360684.8	425074.1
##	1051	1052	1053	1054	1055	1056	1057
##	339012.5	521532.9	398859.5	306658.8	308858.6	312550.0	374865.4
##	1058	1059	1060	1061	1062	1063	1064
##	367181.3	316537.1	391170.7	305594.1	391398.9	422351.3	350266.6
##	1065	1066	1067	1068	1069	1070	1071
##	320940.0	319663.1	302751.6	253799.2	333129.2	308620.3	420627.5

##	1072	1073	1074	1075	1076	1077	1078
##	363243.1	385380.7	299470.8	290605.8	327229.6	321381.1	298909.8
##	1079	1080	1081	1082	1083	1084	1085
##	296845.9	317780.7	282353.7	294631.8	388185.0	269000.0	288424.9
##	1086	1087	1088	1089	1090	1091	1092
##	293459.3	285909.6	292722.5	258652.5	321946.2	281064.7	297018.7
##	1093	1094	1095	1096	1097	1098	1099
##	311377.9	287616.0	287698.8	287699.7	310538.7	241285.1	256297.1
##	1100	1101	1102	1103	1104	1105	1106
##	300110.3	237621.0	419013.5	230609.1	295256.9	253132.2	282255.7
##	1107	1108	1109	1110	1111	1112	1113
##	389679.9	403068.0	287523.2	304716.0	202564.2	271134.6	238977.9
##	1114	1115	1116	1117	1118	1119	1120
##	217427.6	209661.6	302527.0	228416.0	101495.7	269477.2	179900.0
##	1121	1122	1123	1124	1125	1126	1127
##	218912.2	204411.4	180159.1	117564.8	218650.5	138806.6	125429.7
##	1128	1129	1130	1131	1132	1133	1134
##	117137.5	122700.6	119717.6	101174.6	130397.0	130677.7	119631.4
##	1135	1136	1137	1138	1139	1140	1141
##	149742.1	4044345.4	5038673.6	4119257.3	1662239.8	2124897.1	3001874.1
##	1142	1143	1144	1145	1146	1147	1148
##	2985022.6	1688537.3	1651665.3	1699154.4	1155067.1	1424727.0	1371659.7
##	1149	1150	1151	1152	1153	1154	1155
##	1793837.3	1024956.9	1307481.7	1376358.7	1807834.1	1446798.5	1371943.0
##	1156	1157	1158	1159	1160	1161	1162
##	1362684.3	1517457.0	1238265.0	1410262.0	1215729.9	1312465.3	1345832.8
##	1163	1164	1165	1166	1167	1168	1169
##	1331234.2	1298353.3	1005413.3	1239819.1	1169132.9	1243513.1	1301477.9
##	1170	1171	1172	1173	1174	1175	1176
##	854995.9	1119272.3	1163049.0	1311957.6	1406684.9	1184776.1	1682767.3
##	1177	1178	1179	1180	1181	1182	1183
##	1115011.4	1169660.1	1140304.1	1382454.4	1105733.2	1291772.0	555050.7
##	1184	1185	1186	1187	1188	1189	1190
##	1146907.1	1139027.7	1142817.1	1022285.2	1168792.7	1017261.3	1277676.9
##	1191	1192	1193	1194	1195	1196	1197
##	1084879.7	1164075.1	1220972.0	1117674.6	1119377.8	1118874.8	1058563.8
##	1198	1199	1200	1201	1202	1203	1204
##	1105986.3	1251432.9	1071886.8	1175691.6	1149030.4	1207970.0	991729.3
##	1205	1206	1207	1208	1209	1210	1211
##	1442806.2	777583.1	1057301.0	1020389.6	1241126.6	955250.8	1092084.4
##	1212	1213	1214	1215	1216	1217	1218
##	1074886.9	1067185.7	831865.1	622364.8	1079254.8	1172140.0	1065405.7
##	1219	1220	1221	1222	1223	1224	1225
##	1055802.7	1049190.0	1015840.9	1037903.6	1005319.8	1003096.2	975320.6
##	1226	1227	1228	1229	1230	1231	1232
##	961641.0	1165067.6	866632.0	1030473.6	1045094.5	1001865.0	992648.7
##	1233	1234	1235	1236	1237	1238	1239
##	948974.5	1061575.2	1020667.8	988792.9	1113777.0	971853.9	997402.3
##	1240	1241	1242	1243	1244	1245	1246
##	974711.4	925115.3	1005004.1	991225.0	939699.6	919996.6	897746.6
##	1247	1248	1249	1250	1251	1252	1253
##	1027448.2	970327.8	983379.8	896865.9	875302.7	993286.5	939883.9
##	1254	1255	1256	1257	1258	1259	1260
##	867287.5	979408.2	873787.3	945767.9	983222.1	969130.9	861834.2

##	1261	1262	1263	1264	1265	1266	1267
##	934069.0	840933.0	945742.2	965837.4	970590.1	853779.9	961021.6
##	1268	1269	1270	1271	1272	1273	1274
##	943435.9	964253.9	961117.9	981163.6	978174.7	974981.8	911802.1
##	1275	1276	1277	1278	1279	1280	1281
##	853291.5	935774.3	952548.1	951020.3	1114227.3	1120696.2	881555.6
##	1282	1283	1284	1285	1286	1287	1288
##	960035.7	837507.2	1555792.8	913985.8	953225.8	1004073.0	980207.4
##	1289	1290	1291	1292	1293	1294	1295
##	900405.2	976464.9	980976.9	941589.3	1036430.1	821541.8	875204.2
##	1296	1297	1298	1299	1300	1301	1302
##	987793.8	869504.6	881317.1	892188.2	916516.5	1008804.1	850815.4
##	1303	1304	1305	1306	1307	1308	1309
##	905019.8	885564.4	873749.1	769075.8	779622.4	891330.4	934207.2
##	1310	1311	1312	1313	1314	1315	1316
##	828354.6	896001.0	804506.8	906032.2	788711.9	951850.3	840509.2
##	1317	1318	1319	1320	1321	1322	1323
##	836378.2	840912.5	622137.7	875065.4	792714.4	878024.9	839180.2
##	1324	1325	1326	1327	1328	1329	1330
##	780107.1	762873.6	893483.4	930447.3	881317.1	772923.2	843836.2
##	1331	1332	1333	1334	1335	1336	1337
##	914458.1	918135.1	876065.3	882141.5	809884.4	805468.6	871947.7
##	1338	1339	1340	1341	1342	1343	1344
##	849355.8	805675.7	800470.2	860103.4	884594.0	939891.7	872869.4
##	1345	1346	1347	1348	1349	1350	1351
##	897019.0	876979.0	861402.6	804998.5	860040.2	909970.4	913005.7
##	1352	1353	1354	1355	1356	1357	1358
##	847655.9	808074.4	948032.4	821231.7	892612.7	988759.9	831635.1
##	1359	1360	1361	1362	1363	1364	1365
##	778132.8	845076.1	837819.6	888590.8	748451.5	825497.1	918959.5
##	1366	1367	1368	1369	1370	1371	1372
##	862200.8	886726.1	662942.7	845479.6	839941.8	864166.0	815533.3
##	1373	1374	1375	1376	1377	1378	1379
##	815630.3	665011.7	837540.8	839267.5	850000.0	879727.7	764652.6
##	1380	1381	1382	1383	1384	1385	1386
##	899208.9	827955.3	848355.1	858513.2	801351.5	855315.3	856877.9
##	1387	1388	1389	1390	1391	1392	1393
##	881342.7	832057.4	798775.1	810170.0	816885.6	1007840.9	776429.2
##	1394	1395	1396	1397	1398	1399	1400
##	776369.6	828726.7	850950.5	797148.6	809299.0	789517.8	766482.2
##	1401	1402	1403	1404	1405	1406	1407
##	654069.8	845208.2	884018.0	798261.1	841139.5	782777.6	865710.5
##	1408	1409	1410	1411	1412	1413	1414
##	794569.2	806971.6	794274.7	859914.1	789380.9	800076.9	815938.8
##	1415	1416	1417	1418	1419	1420	1421
##	839489.8	802458.8	832449.6	869898.6	814248.3	778903.3	793260.5
##	1422	1423	1424	1425	1426	1427	1428
##	816177.3	838187.5	850864.2	804057.4	793788.4	814143.1	758739.9
##	1429	1430	1431	1432	1433	1434	1435
##	888590.7	826451.9	793522.4	795545.9	856074.1	769203.3	795249.1
##	1436	1437	1438	1439	1440	1441	1442
##	784167.8	794672.8	787239.4	869446.2	766189.6	800108.7	779281.4
##	1443	1444	1445	1446	1447	1448	1449
##	765983.7	782702.3	809386.8	828979.7	863792.3	747861.9	723528.0

##	1450	1451	1452	1453	1454	1455	1456
##	809682.3	802393.4	793792.0	765568.8	664877.9	808233.6	871560.5
##	1457	1458	1459	1460	1461	1462	1463
##	806364.9	846448.2	787231.7	731412.1	867781.0	772859.7	880164.7
##	1464	1465	1466	1467	1468	1469	1470
##	869754.7	837242.9	825771.9	789762.0	781372.6	812418.0	831411.7
##	1471	1472	1473	1474	1475	1476	1477
##	806324.8	824088.0	783174.8	770433.6	806954.6	820697.9	794354.2
##	1478	1479	1480	1481	1482	1483	1484
##	714201.6	730105.3	817032.2	736543.1	821982.5	773754.2	853255.3
##	1485	1486	1487	1488	1489	1490	1491
##	831396.9	746088.7	853869.8	748205.2	807551.1	755700.2	757539.3
##	1492	1493	1494	1495	1496	1497	1498
##	858773.1	751642.6	816381.2	807520.8	772917.5	776795.4	763622.2
##	1499	1500	1501	1502	1503	1504	1505
##	795738.6	730968.9	830151.7	743759.9	795826.6	804295.9	786200.5
##	1506	1507	1508	1509	1510	1511	1512
##	790399.8	743232.7	734158.1	704996.3	773962.1	849831.8	732384.5
##	1513	1514	1515	1516	1517	1518	1519
##	786140.8	826052.8	772954.2	731639.8	664486.0	726293.1	728560.9
##	1520	1521	1522	1523	1524	1525	1526
##	754537.4	753150.9	916453.6	819562.9	756262.9	682890.8	753574.6
##	1527	1528	1529	1530	1531	1532	1533
##	772053.3	835231.6	739997.6	739152.4	717532.2	525151.6	753862.0
##	1534	1535	1536	1537	1538	1539	1540
##	748777.2	833346.1	735925.1	811115.3	795702.2	788161.4	759274.4
##	1541	1542	1543	1544	1545	1546	1547
##	762290.1	725458.1	764363.8	749319.7	697021.4	547838.9	694949.5
##	1548	1549	1550	1551	1552	1553	1554
##	773780.3	731531.1	766438.4	742685.6	736421.1	717117.8	509021.8
##	1555	1556	1557	1558	1559	1560	1561
##	710326.7	781160.1	727879.0	780450.5	769925.7	758530.4	682347.1
##	1562	1563	1564	1565	1566	1567	1568
##	741548.3	724293.8	713333.4	712421.6	750513.3	635353.6	729606.4
##	1569	1570	1571	1572	1573	1574	1575
##	755428.8	740986.4	748113.0	776677.2	719051.9	752532.6	549344.3
##	1576	1577	1578	1579	1580	1581	1582
##	1002783.9	656306.6	718960.4	733196.6	766016.1	769098.3	731806.9
##	1583	1584	1585	1586	1587	1588	1589
##	662214.2	748009.2	679055.4	12166300.5	715261.1	692756.6	720755.0
##	1590	1591	1592	1593	1594	1595	1596
##	745691.2	730120.2	692353.4	655758.1	720834.6	732541.4	698223.0
##	1597	1598	1599	1600	1601	1602	1603
##	735325.0	712974.2	746337.7	652650.5	668218.3	691098.2	742734.6
##	1604	1605	1606	1607	1608	1609	1610
##	689947.9	686190.6	651577.8	709184.6	654177.4	749885.4	734137.1
##	1611	1612	1613	1614	1615	1616	1617
##	631799.0	740032.7	727785.7	713173.0	739288.8	697217.4	733689.5
##	1618	1619	1620	1621	1622	1623	1624
##	787160.4	479595.6	701767.3	739621.0	701150.7	552327.7	832722.0
##	1625	1626	1627	1628	1629	1630	1631
##	706754.5	729540.3	730199.6	730412.1	762795.9	670203.4	840968.9
##	1632	1633	1634	1635	1636	1637	1638
##	705605.1	725265.5	724422.2	718363.5	726568.8	653418.0	681216.8

##	1639	1640	1641	1642	1643	1644	1645
##	797327.6	640975.2	703857.8	795868.3	671529.3	683805.2	716491.4
##	1646	1647	1648	1649	1650	1651	1652
##	701668.5	661569.6	609215.6	732574.2	717710.6	701498.1	625922.3
##	1653	1654	1655	1656	1657	1658	1659
##	701806.9	708304.3	666478.1	733972.6	716589.4	705832.5	680358.9
##	1660	1661	1662	1663	1664	1665	1666
##	674600.5	679585.8	705579.7	659017.6	724545.4	754451.0	713988.8
##	1667	1668	1669	1670	1671	1672	1673
##	701922.5	710435.8	779170.3	574532.4	647877.7	667388.8	695850.0
##	1674	1675	1676	1677	1678	1679	1680
##	772549.5	713927.6	623802.1	642233.6	692649.4	693243.4	662275.2
##	1681	1682	1683	1684	1685	1686	1687
##	645032.1	721118.8	752274.9	699172.7	796653.3	692833.8	681716.5
##	1688	1689	1690	1691	1692	1693	1694
##	639843.9	654860.6	678086.2	701604.1	721312.5	623281.3	568500.1
##	1695	1696	1697	1698	1699	1700	1701
##	713619.4	737637.7	672448.1	684281.0	683948.8	699209.6	653637.1
##	1702	1703	1704	1705	1706	1707	1708
##	676494.1	705242.5	691869.8	733894.6	629914.3	667841.0	701398.8
##	1709	1710	1711	1712	1713	1714	1715
##	565805.1	748936.5	633768.5	638211.0	635173.0	671969.4	660330.7
##	1716	1717	1718	1719	1720	1721	1722
##	662289.5	632943.5	595856.6	679543.0	642955.5	602509.1	656839.0
##	1723	1724	1725	1726	1727	1728	1729
##	656555.7	715599.1	674908.2	600627.8	602311.6	665637.7	688000.3
##	1730	1731	1732	1733	1734	1735	1736
##	662354.6	589514.7	668720.4	595732.3	670315.3	675185.4	747187.7
##	1737	1738	1739	1740	1741	1742	1743
##	635931.6	644889.1	579225.4	619712.6	630086.5	705964.2	649655.6
##	1744	1745	1746	1747	1748	1749	1750
##	644520.5	745014.7	695180.1	657409.9	629329.7	636311.7	649637.1
##	1751	1752	1753	1754	1755	1756	1757
##	636779.7	607874.7	675669.8	685284.2	636525.9	690360.6	659307.7
##	1758	1759	1760	1761	1762	1763	1764
##	666610.7	695517.6	593939.5	710949.8	656112.6	626971.3	637125.1
##	1765	1766	1767	1768	1769	1770	1771
##	632080.6	610628.0	682003.4	687141.0	651735.2	667609.3	716090.8
##	1772	1773	1774	1775	1776	1777	1778
##	617246.6	606431.0	627097.1	592378.6	655432.4	638227.1	704953.4
##	1779	1780	1781	1782	1783	1784	1785
##	555219.3	616379.1	600386.1	649023.0	697053.1	641319.2	589390.6
##	1786	1787	1788	1789	1790	1791	1792
##	621309.6	590023.5	640324.0	634539.5	557884.1	596042.6	764014.0
##	1793	1794	1795	1796	1797	1798	1799
##	555397.6	624040.1	651795.6	592083.5	592968.8	578353.4	667640.4
##	1800	1801	1802	1803	1804	1805	1806
##	645128.7	524593.1	732943.7	596544.6	577347.5	580618.6	573855.3
##	1807	1808	1809	1810	1811	1812	1813
##	661064.4	622401.0	622958.0	554868.5	655090.0	670201.0	583483.4
##	1814	1815	1816	1817	1818	1819	1820
##	611777.0	608211.6	648272.2	569828.4	589680.5	640133.4	683142.3
##	1821	1822	1823	1824	1825	1826	1827
##	629960.8	720182.1	581442.5	584744.2	645638.8	567169.0	550846.4

##	1828	1829	1830	1831	1832	1833	1834
##	558356.4	556969.2	564932.7	680971.4	587668.4	620852.5	607289.1
##	1835	1836	1837	1838	1839	1840	1841
##	588197.8	572212.7	534974.3	548414.7	605240.7	628438.2	616746.6
##	1842	1843	1844	1845	1846	1847	1848
##	611028.5	593156.3	618577.9	592549.6	718732.1	538651.1	576858.5
##	1849	1850	1851	1852	1853	1854	1855
##	632346.0	599955.8	593505.0	625491.2	578335.6	610966.7	589731.3
##	1856	1857	1858	1859	1860	1861	1862
##	682658.1	529419.0	586134.6	629865.5	550687.9	562508.1	520261.5
##	1863	1864	1865	1866	1867	1868	1869
##	540691.6	636139.2	573677.8	591803.9	579693.6	597748.5	558374.9
##	1870	1871	1872	1873	1874	1875	1876
##	590641.6	672683.0	610054.3	601924.4	570265.7	676055.4	562943.2
##	1877	1878	1879	1880	1881	1882	1883
##	617823.6	708329.5	581938.8	534789.6	690733.5	556897.7	666410.3
##	1884	1885	1886	1887	1888	1889	1890
##	560036.9	542809.4	582975.6	585960.5	584743.2	567044.3	606766.7
##	1891	1892	1893	1894	1895	1896	1897
##	576806.0	606706.2	564627.3	566462.5	603015.4	546656.3	528876.5
##	1898	1899	1900	1901	1902	1903	1904
##	533691.1	580094.2	576469.0	602023.4	576770.8	548253.8	531001.3
##	1905	1906	1907	1908	1909	1910	1911
##	516637.1	585404.4	560250.2	517096.0	547295.3	565202.4	529684.7
##	1912	1913	1914	1915	1916	1917	1918
##	671282.5	606977.3	593308.0	504104.1	530869.6	597948.6	567534.8
##	1919	1920	1921	1922	1923	1924	1925
##	577042.7	538620.4	539888.5	640860.9	551185.9	608437.0	522669.7
##	1926	1927	1928	1929	1930	1931	1932
##	514477.7	483688.9	551562.9	582757.9	538354.7	544118.1	538371.8
##	1933	1934	1935	1936	1937	1938	1939
##	584029.9	578790.9	581251.0	645396.2	526625.3	533478.6	405397.3
##	1940	1941	1942	1943	1944	1945	1946
##	570491.6	465637.3	612791.5	513894.0	514981.4	526943.7	570769.0
##	1947	1948	1949	1950	1951	1952	1953
##	501977.2	613871.5	538714.1	520257.3	595901.0	586504.5	512820.7
##	1954	1955	1956	1957	1958	1959	1960
##	535155.5	523729.9	561479.1	557092.5	532961.5	532351.2	533114.3
##	1961	1962	1963	1964	1965	1966	1967
##	548328.7	529894.6	528068.8	463218.3	553634.5	568462.8	490003.1
##	1968	1969	1970	1971	1972	1973	1974
##	536941.3	529393.2	584271.6	509549.3	567814.1	478573.3	558509.2
##	1975	1976	1977	1978	1979	1980	1981
##	565809.5	503636.6	598041.6	576443.8	513666.2	535803.0	521080.0
##	1982	1983	1984	1985	1986	1987	1988
##	496447.1	533437.3	567146.8	530273.3	544636.5	537219.2	541998.7
##	1989	1990	1991	1992	1993	1994	1995
##	524264.3	550362.5	509575.8	504953.8	494296.4	558293.3	504153.1
##	1996	1997	1998	1999	2000	2001	2002
##	587434.6	516333.8	485176.3	565526.7	495433.9	550270.3	458655.8
##	2003	2004	2005	2006	2007	2008	2009
##	484767.1	572708.9	534853.3	490231.1	492424.3	542741.8	480923.6
##	2010	2011	2012	2013	2014	2015	2016
##	506968.3	505460.6	526692.0	500648.6	434917.0	551315.0	508159.4

##	2017	2018	2019	2020	2021	2022	2023
##	533585.8	487666.8	536654.9	517493.8	495544.3	417279.4	495424.2
##	2024	2025	2026	2027	2028	2029	2030
##	478609.2	274129.8	528715.1	515767.9	491183.6	483069.1	487792.6
##	2031	2032	2033	2034	2035	2036	2037
##	547308.2	393479.5	477643.7	489290.2	508345.1	403987.2	482866.8
##	2038	2039	2040	2041	2042	2043	2044
##	548289.1	496704.4	490575.1	459142.5	464016.4	532249.6	505159.1
##	2045	2046	2047	2048	2049	2050	2051
##	444422.9	543418.2	525283.2	494251.7	363026.5	410559.0	455351.8
##	2052	2053	2054	2055	2056	2057	2058
##	499811.3	445848.0	395304.3	448205.5	651218.3	501446.7	535448.8
##	2059	2060	2061	2062	2063	2064	2065
##	469778.7	469844.2	437573.1	496315.7	504269.8	533406.3	458819.0
##	2066	2067	2068	2069	2070	2071	2072
##	477131.0	481953.5	500152.7	422469.5	397540.8	456235.2	458104.9
##	2073	2074	2075	2076	2077	2078	2079
##	506127.5	488178.4	404984.3	463628.4	416520.5	378703.8	457568.2
##	2080	2081	2082	2083	2084	2085	2086
##	471039.7	489800.8	505846.1	539918.3	470766.6	439256.1	439804.9
##	2087	2088	2089	2090	2091	2092	2093
##	379862.6	443588.9	432767.4	425265.1	436956.5	438288.0	473105.9
##	2094	2095	2096	2097	2098	2099	2100
##	442329.0	449927.3	435093.0	505221.0	406337.6	471708.4	382690.4
##	2101	2102	2103	2104	2105	2106	2107
##	457186.8	420897.6	361861.1	408414.7	337051.7	400677.4	356725.6
##	2108	2109	2110	2111	2112	2113	2114
##	442134.1	409232.6	343244.0	318775.4	438880.3	328408.8	529656.2
##	2115	2116	2117	2118	2119	2120	2121
##	407790.4	410391.9	417036.3	454704.1	424406.6	388268.4	350640.4
##	2122	2123	2124	2125	2126	2127	2128
##	319979.8	418460.8	388780.9	399397.2	422668.1	345107.4	353149.5
##	2129	2130	2131	2132	2133	2134	2135
##	341187.3	388350.7	338469.8	357676.1	408776.6	377761.0	318302.9
##	2136	2137	2138	2139	2140	2141	2142
##	404169.7	398482.4	315153.5	401378.1	357959.5	326195.5	301769.0
##	2143	2144	2145	2146	2147	2148	2149
##	292811.9	475070.8	329321.9	340626.8	336541.0	434889.0	345881.2
##	2150	2151	2152	2153	2154	2155	2156
##	314583.5	406345.3	315457.8	322503.7	324777.9	300833.2	380916.6
##	2157	2158	2159	2160	2161	2162	2163
##	306009.8	377204.1	310191.2	315592.3	320721.3	285175.9	291394.3
##	2164	2165	2166	2167	2168	2169	2170
##	339451.6	342079.0	321217.4	309811.8	292393.2	359165.4	287472.9
##	2171	2172	2173	2174	2175	2176	2177
##	322891.0	306464.7	307231.9	256533.6	289518.8	296765.0	289375.0
##	2178	2179	2180	2181	2182	2183	2184
##	328172.5	307972.4	245000.0	262787.8	299627.9	315522.8	227344.6
##	2185	2186	2187	2188	2189	2190	2191
##	280468.0	239701.2	226055.7	193407.3	228868.9	259295.4	214129.5
##	2192	2193	2194	2195	2196	2197	2198
##	228348.0	267536.7	223883.5	246551.0	219501.2	308989.2	127500.0
##	2199	2200	2201	2202	2203	2204	2205
##	110966.3	128473.8	226135.1	135528.3	106152.0	135456.1	123213.2

##	2206	2207	2208	2209	2210	2211	2212
##	124145.4	123251.3	99900.0	114163.0	3898827.7	2802037.7	1969447.5
##	2213	2214	2215	2216	2217	2218	2219
##	2635932.0	2337728.9	1454534.8	2006722.9	2040003.3	2618168.4	1503290.2
##	2220	2221	2222	2223	2224	2225	2226
##	1271904.3	2062178.6	1875560.7	1714666.2	1725035.2	1770975.7	2514595.2
##	2227	2228	2229	2230	2231	2232	2233
##	1358552.8	1634275.1	1698658.9	1444321.2	2138335.7	1457430.9	1644830.9
##	2234	2235	2236	2237	2238	2239	2240
##	1500000.0	1364756.5	1481944.5	1426492.6	937479.3	1375094.4	1348367.6
##	2241	2242	2243	2244	2245	2246	2247
##	1089953.7	969535.0	1295935.7	1336399.5	1365402.7	1410247.9	1728014.5
##	2248	2249	2250	2251	2252	2253	2254
##	1705171.3	1118778.0	1278724.8	1211809.0	1328613.4	1273892.2	1404200.5
##	2255	2256	2257	2258	2259	2260	2261
##	1288786.0	1393688.6	1476600.8	1188256.3	1210808.4	1115096.4	1123463.0
##	2262	2263	2264	2265	2266	2267	2268
##	1161671.4	706464.7	831370.3	1221249.5	1242305.5	1297732.7	1106229.3
##	2269	2270	2271	2272	2273	2274	2275
##	1248384.3	1318315.9	1414054.9	1175855.7	1078830.5	1326489.3	1610419.4
##	2276	2277	2278	2279	2280	2281	2282
##	1097152.3	1192666.9	1150576.6	1155439.4	1330764.3	1062237.5	648256.1
##	2283	2284	2285	2286	2287	2288	2289
##	1199594.4	1108949.1	1140899.8	1115298.4	1143821.0	1305075.5	1620060.3
##	2290	2291	2292	2293	2294	2295	2296
##	1063898.6	1205915.3	1040422.4	1138509.5	1059186.5	872408.3	1137085.1
##	2297	2298	2299	2300	2301	2302	2303
##	1162487.9	1142160.8	1053442.8	885084.9	1215755.7	965249.4	1020697.3
##	2304	2305	2306	2307	2308	2309	2310
##	1046872.6	1250151.6	1054060.7	1119419.1	1088209.3	1058528.2	1152551.5
##	2311	2312	2313	2314	2315	2316	2317
##	1012935.6	1188837.3	1146718.1	1081263.6	1036971.8	1368301.7	1205103.7
##	2318	2319	2320	2321	2322	2323	2324
##	979392.6	1075253.7	1086419.7	1111706.7	1044677.0	1087146.1	1039208.7
##	2325	2326	2327	2328	2329	2330	2331
##	1073357.4	1077016.6	1106754.7	743267.5	1066948.0	977134.2	983839.7
##	2332	2333	2334	2335	2336	2337	2338
##	1008706.3	1043429.0	979939.4	923046.2	1092944.4	1253518.0	588846.9
##	2339	2340	2341	2342	2343	2344	2345
##	1227663.6	1166779.8	952490.2	958467.6	993549.5	875077.9	892355.6
##	2346	2347	2348	2349	2350	2351	2352
##	1003936.9	969666.5	1282400.4	1183824.3	968409.0	1053474.2	939005.5
##	2353	2354	2355	2356	2357	2358	2359
##	926891.3	1171190.8	988263.2	1023352.7	1070691.9	1012406.3	1037572.9
##	2360	2361	2362	2363	2364	2365	2366
##	995183.9	1019324.2	1020229.2	975391.9	935583.7	902984.6	917659.2
##	2367	2368	2369	2370	2371	2372	2373
##	930953.7	1027141.5	1014260.4	979927.6	810315.4	952769.9	913207.4
##	2374	2375	2376	2377	2378	2379	2380
##	897621.4	992233.0	961812.6	1017040.0	1021819.3	994718.2	1084377.3
##	2381	2382	2383	2384	2385	2386	2387
##	970377.9	1121124.0	1012130.8	948955.7	1001631.3	1019986.5	887468.7
##	2388	2389	2390	2391	2392	2393	2394
##	931586.9	997040.1	881246.0	921172.4	659631.4	1033278.0	572161.9

##	2395	2396	2397	2398	2399	2400	2401
##	957462.4	951730.6	947836.7	855754.9	933623.3	931643.3	976598.2
##	2402	2403	2404	2405	2406	2407	2408
##	953711.3	1094424.0	1048461.8	951239.7	935024.9	942703.0	893420.5
##	2409	2410	2411	2412	2413	2414	2415
##	948074.1	1001351.6	885381.5	827769.9	915356.5	1100745.5	1026592.9
##	2416	2417	2418	2419	2420	2421	2422
##	1002036.1	897963.2	970770.8	931655.9	973466.5	899551.7	922168.7
##	2423	2424	2425	2426	2427	2428	2429
##	907356.0	902887.7	900431.7	905824.6	906011.6	913202.2	985028.3
##	2430	2431	2432	2433	2434	2435	2436
##	945856.0	888621.8	897807.8	989815.6	1075839.1	844109.7	880537.0
##	2437	2438	2439	2440	2441	2442	2443
##	937363.7	902987.0	923037.5	921165.0	890519.1	918523.4	966970.0
##	2444	2445	2446	2447	2448	2449	2450
##	911313.1	938200.5	933708.4	933961.6	951357.1	904130.1	880892.4
##	2451	2452	2453	2454	2455	2456	2457
##	904117.5	916872.4	887846.2	948808.4	948768.1	914497.8	835312.5
##	2458	2459	2460	2461	2462	2463	2464
##	927248.0	946419.4	924317.0	989158.5	945265.4	916827.3	909545.4
##	2465	2466	2467	2468	2469	2470	2471
##	933330.8	917571.0	920180.4	938572.2	893492.7	847305.6	846600.6
##	2472	2473	2474	2475	2476	2477	2478
##	912264.4	952121.4	902854.3	987129.3	869782.5	946900.8	863105.4
##	2479	2480	2481	2482	2483	2484	2485
##	870336.0	868927.6	1025781.0	857159.8	907073.9	869292.5	948246.5
##	2486	2487	2488	2489	2490	2491	2492
##	904943.3	917629.6	982569.3	880680.6	841933.2	1051890.8	885126.4
##	2493	2494	2495	2496	2497	2498	2499
##	895009.4	932639.2	850037.3	925794.1	820629.9	888513.3	921390.1
##	2500	2501	2502	2503	2504	2505	2506
##	879211.9	944018.5	897090.6	919679.8	894832.4	850242.8	915568.5
##	2507	2508	2509	2510	2511	2512	2513
##	947237.9	1160952.8	950528.4	942664.7	827163.6	683836.6	850000.0
##	2514	2515	2516	2517	2518	2519	2520
##	905174.7	873989.2	875528.5	829745.2	879015.0	893559.8	870694.1
##	2521	2522	2523	2524	2525	2526	2527
##	939065.2	905283.0	876718.5	879191.9	859647.4	899247.8	906237.2
##	2528	2529	2530	2531	2532	2533	2534
##	854597.8	899452.4	866615.4	854703.0	939377.1	876588.3	869607.9
##	2535	2536	2537	2538	2539	2540	2541
##	867391.8	911494.2	946422.7	829655.0	944030.7	874253.4	895318.5
##	2542	2543	2544	2545	2546	2547	2548
##	871967.5	951152.1	930566.2	911122.0	816596.5	924859.2	839021.1
##	2549	2550	2551	2552	2553	2554	2555
##	861847.2	931109.0	872866.5	830543.4	832687.4	933015.7	816658.5
##	2556	2557	2558	2559	2560	2561	2562
##	933693.7	917875.0	808153.1	892044.4	1034344.5	855007.0	944265.1
##	2563	2564	2565	2566	2567	2568	2569
##	859892.3	871037.9	816643.8	901316.2	805704.3	932260.0	861595.8
##	2570	2571	2572	2573	2574	2575	2576
##	884086.6	887165.5	906632.5	934014.9	823818.7	1004575.9	845567.3
##	2577	2578	2579	2580	2581	2582	2583
##	784849.5	847986.3	826042.6	844386.4	828506.6	868094.0	763872.4

##	2584	2585	2586	2587	2588	2589	2590
##	878510.0	946281.2	804276.4	855560.0	823279.6	803436.6	734810.6
##	2591	2592	2593	2594	2595	2596	2597
##	826452.8	817957.6	865521.5	1026633.1	856992.4	871629.7	830578.1
##	2598	2599	2600	2601	2602	2603	2604
##	836363.3	937206.1	834916.5	856345.2	823996.7	892082.9	836144.1
##	2605	2606	2607	2608	2609	2610	2611
##	940921.6	735348.6	848566.7	815220.4	906004.5	802861.2	852697.5
##	2612	2613	2614	2615	2616	2617	2618
##	789134.4	865234.5	866990.3	814296.2	822413.1	841469.8	840967.7
##	2619	2620	2621	2622	2623	2624	2625
##	788124.4	888266.8	803337.0	932922.8	779763.1	829797.0	815543.9
##	2626	2627	2628	2629	2630	2631	2632
##	808849.9	788850.1	896189.9	828956.5	1026394.6	877437.7	800228.3
##	2633	2634	2635	2636	2637	2638	2639
##	860800.8	860066.9	787390.4	844126.6	877011.7	778779.9	777973.0
##	2640	2641	2642	2643	2644	2645	2646
##	761997.8	828284.6	810461.5	727487.5	765552.9	800398.0	885207.7
##	2647	2648	2649	2650	2651	2652	2653
##	877316.1	818215.1	792694.6	729251.2	780250.2	721806.8	799777.3
##	2654	2655	2656	2657	2658	2659	2660
##	818782.8	844928.5	848183.3	821709.0	759291.7	820077.1	764014.0
##	2661	2662	2663	2664	2665	2666	2667
##	782922.8	845779.8	811450.8	866704.0	808622.7	749212.7	856743.3
##	2668	2669	2670	2671	2672	2673	2674
##	789255.6	749593.9	807542.1	779005.4	774696.5	787344.4	838300.3
##	2675	2676	2677	2678	2679	2680	2681
##	740680.8	723504.4	734406.8	871867.4	723798.7	774444.5	817709.1
##	2682	2683	2684	2685	2686	2687	2688
##	770274.1	775246.5	799818.4	787101.8	833030.4	764731.1	758930.3
##	2689	2690	2691	2692	2693	2694	2695
##	742921.0	762783.4	781115.5	781669.2	786756.4	673291.2	825761.3
##	2696	2697	2698	2699	2700	2701	2702
##	815205.2	779791.3	829467.9	774963.5	786214.4	940582.1	777348.8
##	2703	2704	2705	2706	2707	2708	2709
##	787298.3	750500.6	937263.9	857526.2	707843.6	732340.7	784858.3
##	2710	2711	2712	2713	2714	2715	2716
##	751184.6	751406.4	740930.4	818507.2	768865.6	740831.5	851575.9
##	2717	2718	2719	2720	2721	2722	2723
##	794962.6	760924.6	761274.5	894152.0	717789.3	764897.5	748093.1
##	2724	2725	2726	2727	2728	2729	2730
##	742140.0	754155.9	752205.1	759104.7	756688.9	726453.3	779988.2
##	2731	2732	2733	2734	2735	2736	2737
##	747765.7	732802.7	740313.2	784617.0	708350.8	746341.3	748277.0
##	2738	2739	2740	2741	2742	2743	2744
##	675591.2	777158.2	762219.5	740698.2	759203.7	736361.7	729072.8
##	2745	2746	2747	2748	2749	2750	2751
##	790324.3	778201.1	865688.1	723069.8	746967.3	720405.3	728486.3
##	2752	2753	2754	2755	2756	2757	2758
##	794640.9	829115.4	713661.7	796876.9	749496.9	725313.4	764235.6
##	2759	2760	2761	2762	2763	2764	2765
##	716558.6	720109.8	768986.2	733641.3	706031.8	781881.4	813359.2
##	2766	2767	2768	2769	2770	2771	2772
##	786056.9	700645.5	771281.2	686618.6	760434.8	742457.3	731058.0

##	2773	2774	2775	2776	2777	2778	2779
##	708727.8	782857.6	783217.0	767281.2	787924.8	716430.0	713321.7
##	2780	2781	2782	2783	2784	2785	2786
##	707092.6	766208.4	776122.1	716825.2	738475.6	796091.8	695552.1
##	2787	2788	2789	2790	2791	2792	2793
##	670410.1	733701.7	719782.9	754758.0	702751.8	705913.5	795152.1
##	2794	2795	2796	2797	2798	2799	2800
##	738760.2	734789.6	718596.8	724978.3	697929.2	701937.2	754780.5
##	2801	2802	2803	2804	2805	2806	2807
##	718253.6	881918.2	784806.9	715015.0	694816.7	733151.9	696658.3
##	2808	2809	2810	2811	2812	2813	2814
##	790770.8	745844.7	666294.2	713668.6	692306.4	705093.1	700659.6
##	2815	2816	2817	2818	2819	2820	2821
##	658356.7	703463.6	704140.1	770567.1	703342.0	713880.6	660795.5
##	2822	2823	2824	2825	2826	2827	2828
##	720523.0	711701.4	725697.1	757390.0	713476.3	737370.5	721366.6
##	2829	2830	2831	2832	2833	2834	2835
##	671786.8	717767.5	675867.5	678155.9	655109.1	709625.9	723381.7
##	2836	2837	2838	2839	2840	2841	2842
##	712302.3	688595.0	721165.0	680275.0	728175.9	655258.9	620798.4
##	2843	2844	2845	2846	2847	2848	2849
##	752805.8	649649.8	714874.2	774226.8	712559.2	658411.5	674138.1
##	2850	2851	2852	2853	2854	2855	2856
##	647055.1	790095.2	710222.2	794551.0	719011.6	470671.0	653253.5
##	2857	2858	2859	2860	2861	2862	2863
##	694674.6	802448.2	650000.0	834790.9	722399.6	654683.5	693409.2
##	2864	2865	2866	2867	2868	2869	2870
##	728118.5	677729.3	656348.1	720739.5	683590.8	703071.8	716736.7
##	2871	2872	2873	2874	2875	2876	2877
##	681787.3	699883.9	729640.6	685213.3	673231.3	700000.0	656853.5
##	2878	2879	2880	2881	2882	2883	2884
##	689760.7	696882.2	721333.1	736655.3	757767.6	647706.3	673631.6
##	2885	2886	2887	2888	2889	2890	2891
##	709995.5	658267.0	649264.5	634476.7	643811.7	674332.1	704527.7
##	2892	2893	2894	2895	2896	2897	2898
##	753414.8	681456.2	754583.7	710428.1	678034.4	692167.2	687303.2
##	2899	2900	2901	2902	2903	2904	2905
##	737371.7	670444.4	662709.0	664812.7	547464.9	515861.0	686284.5
##	2906	2907	2908	2909	2910	2911	2912
##	638950.9	642014.5	712383.6	556889.2	636957.9	674803.3	686486.6
##	2913	2914	2915	2916	2917	2918	2919
##	673541.2	779795.6	668422.6	671716.6	644008.7	456604.3	777383.3
##	2920	2921	2922	2923	2924	2925	2926
##	649895.8	717278.3	710082.3	661726.7	630257.6	640855.1	670906.3
##	2927	2928	2929	2930	2931	2932	2933
##	570333.6	816317.7	662409.1	696244.5	636344.1	621680.6	678777.0
##	2934	2935	2936	2937	2938	2939	2940
##	711779.6	666252.4	694821.4	642552.5	651029.1	635108.9	622643.0
##	2941	2942	2943	2944	2945	2946	2947
##	556647.8	636391.9	667103.7	594374.3	597921.6	727332.7	651535.8
##	2948	2949	2950	2951	2952	2953	2954
##	691726.1	662723.3	659168.3	622526.5	627455.4	739028.4	675731.4
##	2955	2956	2957	2958	2959	2960	2961
##	586011.1	665869.0	729086.4	619661.7	619580.0	625027.3	620545.5

##	2962	2963	2964	2965	2966	2967	2968
##	614609.6	522998.4	613646.2	604056.3	628135.8	648402.3	648910.4
##	2969	2970	2971	2972	2973	2974	2975
##	624240.5	643196.6	536998.0	669520.8	630017.7	618749.4	587758.4
##	2976	2977	2978	2979	2980	2981	2982
##	685677.1	679912.6	671392.4	551657.4	671569.8	682716.1	718690.8
##	2983	2984	2985	2986	2987	2988	2989
##	599306.4	639270.2	636693.2	610983.2	571422.0	639546.0	575754.9
##	2990	2991	2992	2993	2994	2995	2996
##	647400.1	621758.7	562539.3	655433.7	670679.5	557455.2	604164.3
##	2997	2998	2999	3000	3001	3002	3003
##	636479.8	662128.6	644638.7	600743.8	650757.0	657392.9	720141.9
##	3004	3005	3006	3007	3008	3009	3010
##	630266.6	625618.8	598198.8	572190.1	654663.0	626701.0	623444.2
##	3011	3012	3013	3014	3015	3016	3017
##	639462.2	599796.7	578230.4	571010.6	600602.1	621085.1	626311.0
##	3018	3019	3020	3021	3022	3023	3024
##	590492.3	624746.6	650108.0	587657.7	567869.0	743762.1	581299.3
##	3025	3026	3027	3028	3029	3030	3031
##	598949.2	634278.3	655427.3	585909.4	549460.6	646573.5	670215.1
##	3032	3033	3034	3035	3036	3037	3038
##	674051.3	563140.8	639693.1	596164.7	597035.0	760390.1	610211.9
##	3039	3040	3041	3042	3043	3044	3045
##	598691.9	586465.9	574368.3	628230.2	701565.2	598683.2	658553.4
##	3046	3047	3048	3049	3050	3051	3052
##	628239.7	613708.2	606438.2	779645.7	689232.2	651750.3	631272.4
##	3053	3054	3055	3056	3057	3058	3059
##	598340.0	570549.6	549806.9	545370.3	616626.4	579657.0	628918.1
##	3060	3061	3062	3063	3064	3065	3066
##	550589.1	634802.8	665793.1	613215.8	523752.1	577069.8	575786.7
##	3067	3068	3069	3070	3071	3072	3073
##	519312.1	473643.1	597915.0	597157.2	619889.8	531680.6	583445.2
##	3074	3075	3076	3077	3078	3079	3080
##	549198.1	576121.7	569001.3	598762.0	430306.7	577690.4	598866.1
##	3081	3082	3083	3084	3085	3086	3087
##	621389.7	557045.1	575144.6	515121.7	591558.1	607835.2	598598.5
##	3088	3089	3090	3091	3092	3093	3094
##	522208.3	613540.6	500795.7	631724.4	572911.9	562681.9	577341.3
##	3095	3096	3097	3098	3099	3100	3101
##	530490.5	568451.1	559429.2	551129.4	516135.1	534184.2	579533.5
##	3102	3103	3104	3105	3106	3107	3108
##	568099.2	554618.9	549512.3	528094.4	563298.8	593225.1	542847.8
##	3109	3110	3111	3112	3113	3114	3115
##	540369.4	614147.0	567222.9	589317.9	595686.5	605645.7	553983.8
##	3116	3117	3118	3119	3120	3121	3122
##	540167.9	597455.7	548697.5	627943.2	633888.3	569494.4	477891.6
##	3123	3124	3125	3126	3127	3128	3129
##	504953.7	671498.7	507138.7	541960.1	529824.1	546599.4	545980.0
##	3130	3131	3132	3133	3134	3135	3136
##	438227.0	437128.0	581854.6	594650.0	543185.2	517775.7	548638.5
##	3137	3138	3139	3140	3141	3142	3143
##	565238.9	513182.2	512115.1	562532.7	602516.6	531977.6	426503.8
##	3144	3145	3146	3147	3148	3149	3150
##	618014.7	593332.6	543704.7	476022.8	584689.7	477091.9	563922.3

##	3151	3152	3153	3154	3155	3156	3157
##	636825.1	508432.5	555574.5	434149.6	529098.7	530798.9	425000.0
##	3158	3159	3160	3161	3162	3163	3164
##	545543.6	508802.8	501828.7	510537.6	558142.4	525095.9	516548.5
##	3165	3166	3167	3168	3169	3170	3171
##	579297.4	504241.9	550685.2	488290.7	595560.1	516676.0	534484.1
##	3172	3173	3174	3175	3176	3177	3178
##	520659.0	480339.3	450947.6	519321.5	522298.4	525106.7	475087.7
##	3179	3180	3181	3182	3183	3184	3185
##	509992.0	498007.6	515729.7	423507.4	439225.4	481612.0	574546.2
##	3186	3187	3188	3189	3190	3191	3192
##	621694.2	485539.9	494239.2	438633.4	459977.5	580334.3	407294.7
##	3193	3194	3195	3196	3197	3198	3199
##	541457.7	487176.3	575076.3	555193.3	501094.5	411652.1	478890.2
##	3200	3201	3202	3203	3204	3205	3206
##	440589.8	460385.2	491179.5	506385.7	535061.3	510758.5	436412.7
##	3207	3208	3209	3210	3211	3212	3213
##	437053.4	525698.1	418553.7	406961.0	538001.8	552999.5	396877.3
##	3214	3215	3216	3217	3218	3219	3220
##	574362.8	483347.4	433878.3	437279.4	434532.9	603879.8	485219.7
##	3221	3222	3223	3224	3225	3226	3227
##	393753.0	457925.6	465391.4	441681.7	498732.2	405565.4	458421.7
##	3228	3229	3230	3231	3232	3233	3234
##	475885.4	467229.0	411895.7	426825.7	449867.9	479381.2	533597.1
##	3235	3236	3237	3238	3239	3240	3241
##	445212.9	450259.2	522179.1	485195.3	374339.1	412147.7	381685.1
##	3242	3243	3244	3245	3246	3247	3248
##	449220.9	509366.4	434310.0	439900.7	382212.2	359935.5	438619.8
##	3249	3250	3251	3252	3253	3254	3255
##	476177.9	372663.0	434050.2	402160.9	341838.9	497273.6	432010.3
##	3256	3257	3258	3259	3260	3261	3262
##	391119.6	388110.0	353509.0	393769.4	404798.8	240552.2	432174.1
##	3263	3264	3265	3266	3267	3268	3269
##	443699.8	401144.8	447704.3	372416.7	355740.2	364065.0	384407.9
##	3270	3271	3272	3273	3274	3275	3276
##	330097.2	364283.7	386705.4	339011.2	360335.6	339947.4	328291.2
##	3277	3278	3279	3280	3281	3282	3283
##	335014.3	368093.8	389029.8	350374.9	339307.3	334892.8	350880.0
##	3284	3285	3286	3287	3288	3289	3290
##	338130.6	325533.8	364815.0	338775.1	380219.8	351621.6	356683.6
##	3291	3292	3293	3294	3295	3296	3297
##	398186.2	322183.4	352952.6	354320.0	321875.7	347244.2	372354.0
##	3298	3299	3300	3301	3302	3303	3304
##	312094.4	363573.9	346967.9	336226.6	349272.5	473299.9	348928.5
##	3305	3306	3307	3308	3309	3310	3311
##	363605.5	341428.8	350849.1	319229.5	321294.6	318164.9	318941.1
##	3312	3313	3314	3315	3316	3317	3318
##	318015.2	327916.9	328346.1	316357.8	294542.9	293876.4	273701.6
##	3319	3320	3321	3322	3323	3324	3325
##	297240.8	345513.1	314252.5	286093.8	327057.5	298062.4	324383.4
##	3326	3327	3328	3329	3330	3331	3332
##	314182.3	285223.6	318757.5	332174.3	286434.8	310891.0	233313.3
##	3333	3334	3335	3336	3337	3338	3339
##	246619.3	237500.0	301766.0	277637.6	258232.2	226840.9	232146.6

##	3340	3341	3342	3343	3344	3345	3346
##	254525.4	229303.1	242558.6	288085.5	273272.8	233111.3	237490.8
##	3347	3348	3349	3350	3351	3352	3353
##	151077.5	231309.7	201593.5	295342.6	258334.6	257770.0	300110.2
##	3354	3355	3356	3357	3358	3359	3360
##	212854.3	160674.4	153189.4	127464.0	135031.4	144133.2	140345.4
##	3361	3362	3363	3364	3365	3366	3367
##	92500.0	6252091.8	9604039.9	5048885.8	6312980.4	3498359.3	3112058.7
##	3368	3369	3370	3371	3372	3373	3374
##	3072939.2	3779657.0	2276616.8	2093211.5	3577266.8	1923396.3	2285816.2
##	3375	3376	3377	3378	3379	3380	3381
##	2221635.0	2636470.3	1502181.2	2279734.5	1917249.8	2029921.7	1665563.4
##	3382	3383	3384	3385	3386	3387	3388
##	1571262.1	2285398.7	2005054.6	1160252.6	2186919.1	1818689.5	1722478.4
##	3389	3390	3391	3392	3393	3394	3395
##	1656925.0	1595129.8	1656808.4	1428061.6	1504951.8	1221940.5	1341928.4
##	3396	3397	3398	3399	3400	3401	3402
##	1564073.7	1652618.3	1626337.9	1797163.6	1738915.7	2013723.3	1430013.5
##	3403	3404	3405	3406	3407	3408	3409
##	1424348.4	745343.8	1127675.5	1619424.0	1356649.8	1393415.7	1345690.4
##	3410	3411	3412	3413	3414	3415	3416
##	1224889.8	1207416.2	1794764.5	1391093.6	1251615.9	1282058.3	1521430.2
##	3417	3418	3419	3420	3421	3422	3423
##	1269262.6	1336990.7	1928598.7	1453766.9	1524040.5	1335495.3	1285706.2
##	3424	3425	3426	3427	3428	3429	3430
##	1353245.3	860175.5	1154675.8	1300305.9	1079517.3	1237206.8	1309314.1
##	3431	3432	3433	3434	3435	3436	3437
##	1434763.0	1170588.2	1406876.9	1250811.8	1259212.3	1217487.6	1297362.5
##	3438	3439	3440	3441	3442	3443	3444
##	1182092.3	1151839.7	1242819.4	1062963.9	1405618.6	1079733.6	1198801.3
##	3445	3446	3447	3448	3449	3450	3451
##	1330765.9	1246079.5	1347286.1	1392422.3	1317932.9	1345969.6	1274233.7
##	3452	3453	3454	3455	3456	3457	3458
##	1282281.2	1053338.6	1279994.7	1226553.5	1272886.9	1635906.9	1442977.1
##	3459	3460	3461	3462	3463	3464	3465
##	1287281.5	1319787.8	1308423.7	1174435.4	1160421.0	1269995.1	1269100.3
##	3466	3467	3468	3469	3470	3471	3472
##	1262808.1	1271154.9	1372037.2	1153744.5	1074508.6	792154.7	1466114.3
##	3473	3474	3475	3476	3477	3478	3479
##	1262255.8	1296196.8	1302351.5	1405073.0	1222665.5	1171008.4	1206279.0
##	3480	3481	3482	3483	3484	3485	3486
##	1310112.0	1034111.5	1291948.6	1209202.0	669724.5	1286480.5	1304463.6
##	3487	3488	3489	3490	3491	3492	3493
##	1202883.1	1170223.9	1597555.4	1194213.4	1252616.2	1250032.0	1279801.6
##	3494	3495	3496	3497	3498	3499	3500
##	1192162.7	1273247.5	1256073.1	1225198.5	1201249.0	1196362.3	1246232.7
##	3501	3502	3503	3504	3505	3506	3507
##	1209686.5	1252893.4	1231978.0	1335433.7	1258117.7	1128542.5	1153650.3
##	3508	3509	3510	3511	3512	3513	3514
##	1173460.6	1135877.0	1225118.9	1174264.3	1152326.2	922171.2	1147788.4
##	3515	3516	3517	3518	3519	3520	3521
##	1315203.1	1173961.6	1157559.3	1205633.0	1256470.1	1078763.9	1118973.3
##	3522	3523	3524	3525	3526	3527	3528
##	1195148.5	1156888.0	1166608.2	1174058.6	1591157.3	1156551.4	1122278.6

##	3529	3530	3531	3532	3533	3534	3535
##	978719.5	1075813.5	1177506.1	995453.9	1186838.3	1201398.1	1223260.0
##	3536	3537	3538	3539	3540	3541	3542
##	1135924.3	1115582.3	1127891.8	1128312.4	1128578.2	1150672.0	985725.6
##	3543	3544	3545	3546	3547	3548	3549
##	1242417.4	1039627.0	1179812.9	1247927.8	1075709.1	1126090.9	1250931.9
##	3550	3551	3552	3553	3554	3555	3556
##	1130516.8	1163702.3	1115308.0	1080478.7	1153083.9	1015477.3	986754.8
##	3557	3558	3559	3560	3561	3562	3563
##	1031438.3	1076695.1	1063850.5	1121978.4	1042677.5	1096633.5	1043277.8
##	3564	3565	3566	3567	3568	3569	3570
##	1086402.1	1028040.1	1108506.4	1090000.0	1110516.9	1013571.5	1122579.9
##	3571	3572	3573	3574	3575	3576	3577
##	1127485.6	1112495.0	1079736.9	1075150.3	1058049.5	1053573.6	925250.6
##	3578	3579	3580	3581	3582	3583	3584
##	1074090.5	1086144.4	1138599.6	1074665.6	1017053.8	1053107.7	1021766.2
##	3585	3586	3587	3588	3589	3590	3591
##	1134548.1	1059050.2	934289.7	929370.0	1059689.4	944934.3	1034162.5
##	3592	3593	3594	3595	3596	3597	3598
##	1109181.0	1054187.3	1103585.3	974574.0	986750.7	1065230.5	1073632.3
##	3599	3600	3601	3602	3603	3604	3605
##	1022494.2	1119402.6	1095667.7	1059738.4	1010239.3	1089336.5	1042939.7
##	3606	3607	3608	3609	3610	3611	3612
##	1033090.7	1055776.2	1013909.4	1038017.1	1084942.9	1027148.2	1029799.5
##	3613	3614	3615	3616	3617	3618	3619
##	1065332.0	1070391.6	939254.6	1059356.8	944778.5	993269.9	1067866.3
##	3620	3621	3622	3623	3624	3625	3626
##	1009918.5	1036636.7	1018514.4	1039887.3	977009.8	1064348.4	1016193.6
##	3627	3628	3629	3630	3631	3632	3633
##	1025389.4	1080572.7	878391.9	1003800.5	1029696.2	1080847.7	1010280.5
##	3634	3635	3636	3637	3638	3639	3640
##	937163.2	957729.5	936038.1	986187.2	1085226.2	1070716.9	1058283.4
##	3641	3642	3643	3644	3645	3646	3647
##	1130220.3	1049057.0	1007786.6	1031065.8	1100847.9	1050050.1	901924.8
##	3648	3649	3650	3651	3652	3653	3654
##	977389.2	961001.2	1029306.7	976050.3	937128.6	1018497.1	1149065.5
##	3655	3656	3657	3658	3659	3660	3661
##	1018075.9	928687.0	967808.4	1024013.6	958206.0	945534.8	911699.2
##	3662	3663	3664	3665	3666	3667	3668
##	976959.6	996806.3	964620.8	1046984.6	962828.5	1017288.2	934631.0
##	3669	3670	3671	3672	3673	3674	3675
##	1028840.2	1042722.6	1017308.5	876409.5	968889.8	948588.2	944605.0
##	3676	3677	3678	3679	3680	3681	3682
##	1008568.7	1004885.9	988225.6	1048249.3	975808.4	946652.0	942290.8
##	3683	3684	3685	3686	3687	3688	3689
##	856260.6	962860.1	899235.9	949821.6	908973.7	871926.5	930052.2
##	3690	3691	3692	3693	3694	3695	3696
##	967113.4	959474.1	994083.3	942795.3	962850.2	906483.6	871178.9
##	3697	3698	3699	3700	3701	3702	3703
##	969029.7	933570.2	960349.0	907528.2	1030125.5	965909.9	1048846.4
##	3704	3705	3706	3707	3708	3709	3710
##	1075550.4	976775.1	889487.2	961698.1	1004068.2	1020096.2	815536.1
##	3711	3712	3713	3714	3715	3716	3717
##	927181.3	976413.0	1019017.7	968887.6	991715.2	954882.7	978025.8

##	3718	3719	3720	3721	3722	3723	3724
##	925231.4	987840.2	960228.4	964869.8	930130.8	1047761.5	937115.3
##	3725	3726	3727	3728	3729	3730	3731
##	939563.5	928466.7	943710.4	926298.7	947321.0	892802.6	926585.8
##	3732	3733	3734	3735	3736	3737	3738
##	951255.3	928310.7	899134.2	896035.7	1046768.8	968143.2	912502.0
##	3739	3740	3741	3742	3743	3744	3745
##	784156.2	922242.1	975076.7	939186.7	926371.2	783916.6	924431.5
##	3746	3747	3748	3749	3750	3751	3752
##	926497.6	831231.6	1012620.0	1204000.3	935690.7	916208.3	884659.9
##	3753	3754	3755	3756	3757	3758	3759
##	891993.9	884665.0	958442.3	985489.9	925958.5	1031406.8	777063.9
##	3760	3761	3762	3763	3764	3765	3766
##	914116.1	922551.5	972944.9	919855.2	841521.9	818373.0	901212.2
##	3767	3768	3769	3770	3771	3772	3773
##	948159.6	967350.6	976794.7	876786.6	818013.3	863697.6	929443.2
##	3774	3775	3776	3777	3778	3779	3780
##	907152.4	840169.6	883233.2	898038.1	832663.6	950453.6	932827.9
##	3781	3782	3783	3784	3785	3786	3787
##	973330.4	836793.0	870290.2	923769.9	981000.7	880989.3	844278.3
##	3788	3789	3790	3791	3792	3793	3794
##	951313.0	865210.9	963112.1	980054.7	950898.4	927201.5	883201.5
##	3795	3796	3797	3798	3799	3800	3801
##	862535.7	927175.9	845984.6	900802.1	947710.0	875279.6	722480.6
##	3802	3803	3804	3805	3806	3807	3808
##	913227.1	821974.1	931470.7	908569.1	918412.8	1071987.4	860159.6
##	3809	3810	3811	3812	3813	3814	3815
##	901414.7	764002.2	899468.9	869037.2	849440.7	796817.0	908166.2
##	3816	3817	3818	3819	3820	3821	3822
##	931390.6	832064.2	874254.8	790062.5	817286.3	909815.0	975853.5
##	3823	3824	3825	3826	3827	3828	3829
##	850224.7	816589.5	892346.9	941491.5	878950.0	804990.5	922740.1
##	3830	3831	3832	3833	3834	3835	3836
##	850683.7	918956.5	797057.1	901743.6	913398.4	888324.7	907128.8
##	3837	3838	3839	3840	3841	3842	3843
##	881016.1	788123.6	891139.3	847436.0	842133.1	888814.6	910076.8
##	3844	3845	3846	3847	3848	3849	3850
##	797495.5	791940.4	892394.1	866702.4	930275.7	886046.0	806046.1
##	3851	3852	3853	3854	3855	3856	3857
##	907988.6	912650.8	812193.4	869004.5	793709.4	825939.4	883419.3
##	3858	3859	3860	3861	3862	3863	3864
##	876585.3	958622.8	738505.6	822734.5	919258.0	829364.1	896711.5
##	3865	3866	3867	3868	3869	3870	3871
##	731756.0	907618.6	860879.8	854018.5	816635.4	857315.4	801767.2
##	3872	3873	3874	3875	3876	3877	3878
##	911003.3	813989.0	848565.6	835792.2	839207.3	803472.3	769350.5
##	3879	3880	3881	3882	3883	3884	3885
##	781852.7	882176.2	814509.4	747072.4	810005.6	770847.7	860573.8
##	3886	3887	3888	3889	3890	3891	3892
##	791567.3	861929.9	840496.4	824614.6	882947.4	869303.8	845109.1
##	3893	3894	3895	3896	3897	3898	3899
##	862570.8	854320.6	821471.2	857173.4	753230.9	828459.7	792332.8
##	3900	3901	3902	3903	3904	3905	3906
##	978537.7	935064.7	787589.7	803572.3	823478.3	753413.5	851820.2

##	3907	3908	3909	3910	3911	3912	3913
##	756596.9	949452.9	777677.6	788019.1	822146.0	893714.8	860082.7
##	3914	3915	3916	3917	3918	3919	3920
##	850345.7	827824.4	774566.5	791487.2	1043260.2	795796.8	760264.2
##	3921	3922	3923	3924	3925	3926	3927
##	921407.4	821292.3	803745.8	805656.3	781380.0	791849.3	820856.3
##	3928	3929	3930	3931	3932	3933	3934
##	794532.5	825541.0	893017.7	855102.7	900737.9	840826.8	793382.0
##	3935	3936	3937	3938	3939	3940	3941
##	837624.9	874657.9	843399.6	809241.9	849003.9	752896.1	862462.9
##	3942	3943	3944	3945	3946	3947	3948
##	755500.9	842463.0	788540.3	775641.5	846185.8	814395.3	899496.1
##	3949	3950	3951	3952	3953	3954	3955
##	809401.6	817203.8	732632.9	754616.2	688411.2	745855.1	823848.6
##	3956	3957	3958	3959	3960	3961	3962
##	790567.2	756203.4	838434.6	778589.3	851573.8	859980.0	845695.8
##	3963	3964	3965	3966	3967	3968	3969
##	702831.6	775307.8	784159.3	746649.8	779645.9	879000.0	705968.9
##	3970	3971	3972	3973	3974	3975	3976
##	788055.7	717516.0	822381.6	814964.1	774664.0	735090.2	787173.6
##	3977	3978	3979	3980	3981	3982	3983
##	789743.1	776172.3	787439.4	810497.6	796201.6	879210.4	1011150.8
##	3984	3985	3986	3987	3988	3989	3990
##	762181.8	777519.3	733390.0	780057.7	820664.6	798223.1	806150.2
##	3991	3992	3993	3994	3995	3996	3997
##	960225.8	798950.2	751559.2	885879.7	737578.1	756232.8	856411.5
##	3998	3999	4000	4001	4002	4003	4004
##	842486.5	771310.8	752007.5	736895.1	823441.5	683812.9	855325.0
##	4005	4006	4007	4008	4009	4010	4011
##	794960.2	773153.9	699638.3	767404.0	725139.0	782422.1	840506.2
##	4012	4013	4014	4015	4016	4017	4018
##	684851.7	736333.3	780793.2	694549.1	696211.0	768906.8	745810.0
##	4019	4020	4021	4022	4023	4024	4025
##	750790.4	759595.1	836815.8	774254.6	779322.8	678063.4	905252.1
##	4026	4027	4028	4029	4030	4031	4032
##	829421.7	748149.2	840134.9	722335.3	699638.4	733984.9	721369.1
##	4033	4034	4035	4036	4037	4038	4039
##	789551.5	774487.1	705728.8	750618.1	849646.7	785459.0	805743.9
##	4040	4041	4042	4043	4044	4045	4046
##	979649.2	792922.7	660326.7	710791.5	754361.0	782440.9	739227.8
##	4047	4048	4049	4050	4051	4052	4053
##	752592.0	768243.1	686885.9	1004000.0	669822.5	688877.6	767266.8
##	4054	4055	4056	4057	4058	4059	4060
##	677571.2	794121.1	762200.0	687454.0	700596.7	783859.5	684408.5
##	4061	4062	4063	4064	4065	4066	4067
##	677033.2	738675.7	689764.0	772916.3	746183.4	652595.6	949337.8
##	4068	4069	4070	4071	4072	4073	4074
##	737177.5	783785.7	782731.8	720794.7	710813.0	670557.1	686023.2
##	4075	4076	4077	4078	4079	4080	4081
##	786677.2	662995.0	793581.5	689374.7	732152.7	754257.3	748210.2
##	4082	4083	4084	4085	4086	4087	4088
##	743582.8	667993.9	767192.5	705233.6	652912.3	724045.0	706112.4
##	4089	4090	4091	4092	4093	4094	4095
##	686619.9	604882.0	724854.6	642087.0	664309.4	704285.9	680842.3

##	4096	4097	4098	4099	4100	4101	4102
##	735432.0	646402.5	680252.2	679838.8	668149.6	694536.2	644327.9
##	4103	4104	4105	4106	4107	4108	4109
##	710724.6	705222.9	795268.0	654197.2	687935.0	757282.9	726048.2
##	4110	4111	4112	4113	4114	4115	4116
##	704655.0	740574.4	714354.0	690131.2	662662.7	750966.6	721431.6
##	4117	4118	4119	4120	4121	4122	4123
##	699987.0	777820.4	762119.9	667608.9	783907.9	665525.0	684160.3
##	4124	4125	4126	4127	4128	4129	4130
##	644290.2	755341.2	641804.9	631727.9	702641.7	680198.2	701250.9
##	4131	4132	4133	4134	4135	4136	4137
##	699266.7	718259.1	679476.6	781255.9	739878.2	719447.4	591216.7
##	4138	4139	4140	4141	4142	4143	4144
##	644745.3	741825.3	599855.1	884250.3	643934.1	632575.4	663899.1
##	4145	4146	4147	4148	4149	4150	4151
##	705896.4	691828.5	685277.3	642700.7	696020.4	673228.2	610340.1
##	4152	4153	4154	4155	4156	4157	4158
##	608850.6	689826.3	698873.7	663263.3	605214.0	652462.8	700131.9
##	4159	4160	4161	4162	4163	4164	4165
##	579166.2	724472.3	618221.7	687224.1	674135.6	637903.7	692903.0
##	4166	4167	4168	4169	4170	4171	4172
##	616389.6	678414.8	684352.6	655525.6	792332.6	661347.1	625239.3
##	4173	4174	4175	4176	4177	4178	4179
##	673718.7	649556.5	636020.9	667281.0	655267.0	665654.6	704535.1
##	4180	4181	4182	4183	4184	4185	4186
##	651423.6	651279.6	601487.8	811699.6	627422.8	691845.6	659489.6
##	4187	4188	4189	4190	4191	4192	4193
##	713320.0	621761.8	622565.4	646209.2	598800.0	680457.5	651913.0
##	4194	4195	4196	4197	4198	4199	4200
##	658387.7	718087.5	662392.3	738404.4	617095.0	749868.0	604835.1
##	4201	4202	4203	4204	4205	4206	4207
##	608017.7	636968.6	613362.2	638465.4	634569.1	624784.5	677137.0
##	4208	4209	4210	4211	4212	4213	4214
##	714118.6	647086.9	595632.3	592577.4	707578.3	507138.4	688535.6
##	4215	4216	4217	4218	4219	4220	4221
##	701923.9	686914.3	623027.1	641261.6	590481.2	634646.8	584405.0
##	4222	4223	4224	4225	4226	4227	4228
##	685018.3	569355.6	655074.7	684785.0	631826.2	645850.4	638650.5
##	4229	4230	4231	4232	4233	4234	4235
##	582679.2	585010.8	675178.8	685769.0	622740.0	634095.2	605696.5
##	4236	4237	4238	4239	4240	4241	4242
##	601284.2	611740.8	663885.2	585397.0	754989.7	643462.4	602970.8
##	4243	4244	4245	4246	4247	4248	4249
##	580814.6	540061.6	696416.4	625000.0	644105.0	593393.6	590258.0
##	4250	4251	4252	4253	4254	4255	4256
##	456633.9	586884.2	626057.4	637972.6	692593.6	711696.0	579900.0
##	4257	4258	4259	4260	4261	4262	4263
##	596319.8	620828.2	634832.7	533744.8	543602.1	633618.5	601405.1
##	4264	4265	4266	4267	4268	4269	4270
##	566248.4	587730.4	593196.5	617410.6	652924.5	594969.3	569992.6
##	4271	4272	4273	4274	4275	4276	4277
##	549451.3	729658.4	656907.4	591087.4	651111.7	594772.7	577568.1
##	4278	4279	4280	4281	4282	4283	4284
##	724668.1	626215.8	546815.8	568037.4	636097.5	560626.8	599950.0

##	4285	4286	4287	4288	4289	4290	4291
##	565922.2	592188.8	473162.0	570259.1	459043.1	461209.2	496503.1
##	4292	4293	4294	4295	4296	4297	4298
##	590773.9	611419.5	581927.6	576321.8	624317.4	457017.0	757183.4
##	4299	4300	4301	4302	4303	4304	4305
##	627516.1	578688.2	455403.3	623437.4	606321.2	474966.1	631994.5
##	4306	4307	4308	4309	4310	4311	4312
##	642971.9	453883.0	547460.1	450590.0	494770.6	449537.0	484701.5
##	4313	4314	4315	4316	4317	4318	4319
##	582676.1	605691.1	540241.8	446525.4	448347.3	577901.8	586209.2
##	4320	4321	4322	4323	4324	4325	4326
##	516136.7	495077.2	524013.3	541043.9	405491.1	579571.1	547205.3
##	4327	4328	4329	4330	4331	4332	4333
##	479591.8	586542.9	568387.1	521538.7	562243.5	490010.9	521369.2
##	4334	4335	4336	4337	4338	4339	4340
##	474065.0	538806.6	559159.3	526196.2	438329.0	556275.0	577117.9
##	4341	4342	4343	4344	4345	4346	4347
##	589990.1	565579.5	519526.1	461163.7	464184.2	500741.5	450000.0
##	4348	4349	4350	4351	4352	4353	4354
##	592071.9	559583.2	548875.1	565836.2	539922.8	446019.1	504437.4
##	4355	4356	4357	4358	4359	4360	4361
##	577862.2	418313.9	561305.0	452443.5	414669.1	446404.2	514667.0
##	4362	4363	4364	4365	4366	4367	4368
##	482708.5	542772.4	455035.2	453423.1	441537.3	420934.1	474258.0
##	4369	4370	4371	4372	4373	4374	4375
##	520009.8	492812.8	454884.5	510892.7	534269.2	452881.3	476469.8
##	4376	4377	4378	4379	4380	4381	4382
##	503098.7	453160.4	485996.8	505607.8	527578.9	446999.9	448871.7
##	4383	4384	4385	4386	4387	4388	4389
##	452163.6	489085.9	500554.7	442810.9	513140.1	422628.3	615649.1
##	4390	4391	4392	4393	4394	4395	4396
##	553317.8	447226.2	448728.5	452487.2	449535.1	490680.4	494531.7
##	4397	4398	4399	4400	4401	4402	4403
##	407648.9	562681.4	592285.6	458833.8	460133.3	435400.0	445476.3
##	4404	4405	4406	4407	4408	4409	4410
##	500842.1	416749.8	379462.4	397346.7	407586.5	370128.6	438909.2
##	4411	4412	4413	4414	4415	4416	4417
##	590131.1	503602.6	502882.6	369142.3	406754.5	403107.8	380172.9
##	4418	4419	4420	4421	4422	4423	4424
##	381819.3	432007.3	410979.6	507854.5	456839.1	359037.1	528404.3
##	4425	4426	4427	4428	4429	4430	4431
##	382494.2	380881.2	603607.7	497108.7	418252.9	375820.4	392046.6
##	4432	4433	4434	4435	4436	4437	4438
##	417418.9	361809.8	383451.6	349683.8	449683.0	510215.9	375002.4
##	4439	4440	4441	4442	4443	4444	4445
##	242228.7	371465.7	451366.0	343556.7	351577.2	395913.9	338777.6
##	4446	4447	4448	4449	4450	4451	4452
##	383121.0	374275.0	350994.2	377169.4	372124.2	359424.2	300242.9
##	4453	4454	4455	4456	4457	4458	4459
##	361870.0	244014.0	366660.3	341347.6	366159.6	353940.0	324821.2
##	4460	4461	4462	4463	4464	4465	4466
##	312176.7	338051.1	317119.9	288722.8	260575.2	355085.8	335720.9
##	4467	4468	4469	4470	4471	4472	4473
##	295244.5	375186.7	359673.9	300979.2	380657.3	345522.3	317543.1

##	4474	4475	4476	4477	4478	4479	4480
##	336646.9	446961.2	328525.6	292793.5	306878.5	256397.6	245573.5
##	4481	4482	4483	4484	4485	4486	4487
##	256025.6	292771.9	249826.1	263461.8	304841.9	269544.2	287259.4
##	4488	4489	4490	4491	4492	4493	4494
##	304712.8	237072.2	140734.4	241461.5	332125.1	254870.8	206382.3
##	4495	4496	4497	4498	4499	4500	4501
##	193089.1	185436.7	201387.9	197963.7	174404.9	159834.2	195304.9
##	4502	4503	4504	4505	4506	4507	4508
##	158494.7	186436.1	195609.0	160645.4	202582.2	195375.1	199359.7
##	4509	4510	4511	4512	4513	4514	4515
##	197711.8	242006.2	344351.8	142703.3	5908576.8	10438999.0	3904309.4
##	4516	4517	4518	4519	4520	4521	4522
##	2891701.0	3599814.1	2963585.7	2138722.8	1901345.8	1912029.9	1858272.3
##	4523	4524	4525	4526	4527	4528	4529
##	2058508.4	967140.1	2156092.2	1764657.6	2131228.2	2020558.8	956359.2
##	4530	4531	4532	4533	4534	4535	4536
##	1628775.3	1455883.8	1529680.8	1336222.2	1627606.7	1695691.1	1575000.0
##	4537	4538	4539	4540	4541	4542	4543
##	1640457.5	1031647.7	1449032.3	1690218.7	1583009.5	1470055.1	1382202.4
##	4544	4545	4546	4547	4548	4549	4550
##	1437446.3	1401335.4	1403114.6	1365226.5	1362087.6	1354349.8	1324424.0
##	4551	4552	4553	4554	4555	4556	4557
##	1297503.1	1738735.4	1120778.5	1420401.4	1234233.9	1197551.1	1406448.6
##	4558	4559	4560	4561	4562	4563	4564
##	1428553.2	1344524.6	1276521.5	1308038.6	1417513.4	1418055.9	1172316.9
##	4565	4566	4567	4568	4569	4570	4571
##	1212113.7	1501198.4	1194354.6	1313952.2	1398299.7	1311943.4	1338370.5
##	4572	4573	4574	4575	4576	4577	4578
##	1316285.3	1375261.1	1459179.4	1336208.7	1173395.4	1291778.0	1246830.9
##	4579	4580	4581	4582	4583	4584	4585
##	1249013.3	1224916.6	901710.1	1265913.9	1286316.6	1095947.9	969440.3
##	4586	4587	4588	4589	4590	4591	4592
##	1247375.9	1293446.9	1217474.2	1267360.9	1356121.2	1265848.7	1145772.9
##	4593	4594	4595	4596	4597	4598	4599
##	1274626.5	1158631.6	1299877.1	1233536.9	1176648.3	1089252.0	1220003.7
##	4600	4601	4602	4603	4604	4605	4606
##	1196182.0	1010846.0	1006122.1	1166833.6	1264584.1	1120262.0	1237392.7
##	4607	4608	4609	4610	4611	4612	4613
##	1260510.1	905549.0	1248019.0	1243809.6	1279271.4	1213468.0	1150433.6
##	4614	4615	4616	4617	4618	4619	4620
##	1172056.5	1074426.9	1020833.2	1159377.2	1104844.0	1005112.3	1152854.9
##	4621	4622	4623	4624	4625	4626	4627
##	1181159.7	1101133.9	1297055.7	1192573.2	978260.8	1131569.3	1058719.2
##	4628	4629	4630	4631	4632	4633	4634
##	1113630.7	1113834.0	944464.4	849860.1	1097104.4	905516.0	970464.6
##	4635	4636	4637	4638	4639	4640	4641
##	1170988.4	990145.8	1071798.1	1010850.3	1012904.3	1106090.0	760341.7
##	4642	4643	4644	4645	4646	4647	4648
##	1113115.9	1062403.3	1105782.9	992922.2	962520.0	1085524.7	916513.3
##	4649	4650	4651	4652	4653	4654	4655
##	788764.9	1177872.8	1058539.7	943215.6	853049.8	881883.9	967243.8
##	4656	4657	4658	4659	4660	4661	4662
##	1068726.1	1072487.4	1042946.4	1094657.7	1027133.4	907608.0	975292.1

##	4663	4664	4665	4666	4667	4668	4669
##	1009429.9	977358.3	999613.0	920312.1	983315.6	1069790.4	1032223.8
##	4670	4671	4672	4673	4674	4675	4676
##	1006235.7	1045534.6	1021722.2	1081021.4	857034.3	1025213.9	885152.9
##	4677	4678	4679	4680	4681	4682	4683
##	905817.3	969226.0	1008374.6	992314.8	1070925.2	1103310.1	935633.7
##	4684	4685	4686	4687	4688	4689	4690
##	861477.0	810588.1	938481.6	894976.4	1073166.1	997462.0	1047046.7
##	4691	4692	4693	4694	4695	4696	4697
##	957520.8	914641.7	1016610.8	993342.5	836263.1	968423.8	969027.2
##	4698	4699	4700	4701	4702	4703	4704
##	978753.0	982953.2	943326.0	893072.9	926962.7	1051358.2	828354.1
##	4705	4706	4707	4708	4709	4710	4711
##	884770.9	934890.7	963168.6	954166.5	974756.4	835511.1	929592.2
##	4712	4713	4714	4715	4716	4717	4718
##	963972.8	830246.8	852102.0	900454.3	823784.8	1105466.0	837996.1
##	4719	4720	4721	4722	4723	4724	4725
##	1030108.1	916552.4	814370.8	889346.7	935630.6	932182.6	866465.6
##	4726	4727	4728	4729	4730	4731	4732
##	938226.2	827726.5	936973.8	828875.9	871170.8	935449.0	964245.7
##	4733	4734	4735	4736	4737	4738	4739
##	986111.2	894681.2	850602.3	888754.4	859504.5	881959.8	905371.3
##	4740	4741	4742	4743	4744	4745	4746
##	848539.7	923490.1	867806.5	867548.2	953478.0	888615.7	958953.4
##	4747	4748	4749	4750	4751	4752	4753
##	884537.0	946436.3	840609.9	758342.6	876447.7	862464.6	934527.8
##	4754	4755	4756	4757	4758	4759	4760
##	771592.7	895182.5	814655.6	800854.5	892349.7	947766.6	816072.1
##	4761	4762	4763	4764	4765	4766	4767
##	970597.3	914813.3	738899.4	794476.0	967935.3	939637.0	888443.7
##	4768	4769	4770	4771	4772	4773	4774
##	961171.5	831459.3	820128.9	805218.3	819136.6	818355.3	745935.2
##	4775	4776	4777	4778	4779	4780	4781
##	935738.2	760667.2	794443.6	850954.7	787242.1	833252.1	877297.1
##	4782	4783	4784	4785	4786	4787	4788
##	928381.8	886839.1	836179.5	722786.3	932413.4	906945.9	850124.8
##	4789	4790	4791	4792	4793	4794	4795
##	772785.3	750100.2	854848.6	878437.2	772628.9	821187.8	880087.9
##	4796	4797	4798	4799	4800	4801	4802
##	868489.7	807966.0	763562.4	848147.9	833736.3	735815.0	825721.6
##	4803	4804	4805	4806	4807	4808	4809
##	795509.6	710061.1	822818.7	841653.0	806560.4	862346.0	732228.8
##	4810	4811	4812	4813	4814	4815	4816
##	806548.6	727474.2	837403.8	831704.4	879831.8	696102.4	746266.2
##	4817	4818	4819	4820	4821	4822	4823
##	736884.3	740716.9	712293.9	653375.5	770925.1	859207.0	753074.8
##	4824	4825	4826	4827	4828	4829	4830
##	704601.0	816968.7	818392.1	748394.4	727261.6	856342.3	797589.9
##	4831	4832	4833	4834	4835	4836	4837
##	1033802.2	888327.2	740266.8	753305.2	714486.9	812388.6	752173.7
##	4838	4839	4840	4841	4842	4843	4844
##	788949.2	893486.9	712342.0	734111.1	735778.8	777849.0	782953.6
##	4845	4846	4847	4848	4849	4850	4851
##	731285.3	711183.6	744560.4	720600.1	798554.8	720612.8	826066.2

```
##      4852      4853      4854      4855      4856      4857      4858
## 766194.6 708258.3 861762.9 780930.4 786763.6 774728.9 761050.0
##      4859      4860      4861      4862      4863      4864      4865
## 680311.5 762333.1 789243.1 740379.3 676500.0 712540.4 766439.2
##      4866      4867      4868      4869      4870      4871      4872
## 735411.8 722123.9 693713.9 745581.6 676421.1 722960.7 709126.8
##      4873      4874      4875      4876      4877      4878      4879
## 670512.7 685296.1 652642.9 712163.7 710808.6 729386.1 703819.6
##      4880      4881      4882      4883      4884      4885      4886
## 672187.2 611200.9 737018.5 669148.2 746231.4 680346.9 732038.3
##      4887      4888      4889      4890      4891      4892      4893
## 715641.1 737331.6 687255.3 695850.8 642522.5 675706.0 671332.5
##      4894      4895      4896      4897      4898      4899      4900
## 670333.0 638027.0 650121.5 678525.6 743632.9 741814.8 620507.9
##      4901      4902      4903      4904      4905      4906      4907
## 648729.9 787722.9 633107.5 658020.7 812382.0 763793.3 582856.5
##      4908      4909      4910      4911      4912      4913      4914
## 650289.7 785870.7 786081.4 623968.6 630161.5 766300.5 701250.3
##      4915      4916      4917      4918      4919      4920      4921
## 673149.9 620644.7 710171.6 647445.2 604267.8 627080.8 600032.6
##      4922      4923      4924      4925      4926      4927      4928
## 726956.3 597003.3 636432.1 514030.5 465257.7 448082.1 624862.1
##      4929      4930
## 619050.1 639723.7
```

```
#prediction with testing model
pred_test1<-predict(model1, newdata=ms)
```

```
## Warning in predict.lm(model1, newdata = ms): prediction from a rank-deficient
## fit may be misleading
```

```
exp(pred_test1)
```

```
##      1      2      3      4      5      6      7      8
## 584029.2 470050.2 533561.7 417570.6 457971.2 619141.9 564060.6 751815.8
##      9     10     11     12     13     14     15     16
## 573433.4 602865.2 595650.4 599978.6 599796.6 597595.3 609246.1 461347.0
##     17     18     19     20     21     22     23     24
## 553044.0 645044.9 588444.9 408481.9 527476.3 554759.1 546386.9 591090.7
##     25     26     27     28     29     30     31     32
## 428672.8 478375.8 573030.8 489183.2 548634.3 422855.2 498389.1 440822.0
##     33     34     35     36     37     38     39     40
## 416345.6 439244.7 438030.1 477195.4 411803.7 408100.7 683447.4 486149.7
##     41     42     43     44     45     46     47     48
## 559193.6 418842.4 511603.2 418678.1 413904.3 448418.5 388715.0 422451.1
##     49     50     51     52     53     54     55     56
## 423025.7 388698.2 395295.2 530428.6 457417.4 358484.9 400751.3 483017.3
##     57     58     59     60     61     62     63     64
## 333264.6 379868.4 375492.9 401250.2 343910.4 306748.1 409392.4 363383.1
##     65     66     67     68     69     70     71     72
## 391111.2 342221.1 345870.9 363770.7 402625.1 372141.5 362378.4 346934.0
##     73     74     75     76     77     78     79     80
## 342378.8 365119.0 343981.3 291350.4 339234.0 355130.6 218866.6 262939.2
```

```
##          81          82          83          84          85          86          87          88
## 223398.4 346550.0 300834.3 355573.6 332380.7 347562.6 258457.3 229285.7
##          89          90          91          92          93          94          95          96
## 243126.5 240895.5 254237.5 232968.4 156418.1 233114.0 217023.5 233414.3
##          97          98          99         100
## 216552.0 189107.6 202747.3 206235.4
```

```
#metrics for train prediction
eval_results(tr$List.Price, exp(pred_test0), tr)
```

```
##          RMSE    Rsquare
## 1 247098.9 0.5430595
```

```
#metrics for test prediction
eval_results(ms$List.Price, exp(pred_test1), ms)
```

```
##          RMSE    Rsquare
## 1 59068.47 0.7455219
```

```
##### random forest #####
```

```
library(randomForest)
```

```
## Warning: package 'randomForest' was built under R version 4.1.3
```

```
## randomForest 4.7-1
```

```
## Type rfNews() to see new features/changes/bug fixes.
```

```
##
## Attaching package: 'randomForest'
```

```
## The following object is masked from 'package:ggplot2':
##
##      margin
```

```
## The following object is masked from 'package:dplyr':
##
##      combine
```

```
rf_model = randomForest(log(List.Price) ~ ., data=tr, importance=TRUE, ntree = 50)
summary(rf_model)
```

```
##          Length Class  Mode
## call          5  -none- call
## type           1  -none- character
## predicted     4930 -none- numeric
## mse            50  -none- numeric
## rsq            50  -none- numeric
## oob.times     4930 -none- numeric
```

```
## importance      60  -none- numeric
## importanceSD    30  -none- numeric
## localImportance  0  -none- NULL
## proximity       0  -none- NULL
## ntree           1  -none- numeric
## mtry            1  -none- numeric
## forest          11  -none- list
## coefs           0  -none- NULL
## y               4930 -none- numeric
## test            0  -none- NULL
## inbag           0  -none- NULL
## terms           3   terms  call
```

```
rf_model
```

```
##
## Call:
## randomForest(formula = log(List.Price) ~ ., data = tr, importance = TRUE,      ntree = 50)
##           Type of random forest: regression
##           Number of trees: 50
## No. of variables tried at each split: 10
##
##           Mean of squared residuals: 0.002658623
##           % Var explained: 98.67
```

```
#training values prediction
```

```
pred2 = predict(rf_model,tr)
pred2
```

```
##      1      2      3      4      5      6      7      8
## 15.21009 15.06061 14.87851 14.88539 14.75425 14.70549 14.71638 14.68966
##      9     10     11     12     13     14     15     16
## 14.64014 14.65631 14.54284 14.56817 14.50977 14.41802 14.42003 14.41312
##     17     18     19     20     21     22     23     24
## 14.42153 14.35448 14.40561 14.30158 14.34497 14.23208 14.36196 14.22515
##     25     26     27     28     29     30     31     32
## 14.30259 14.30680 14.21002 14.21043 14.13007 14.14358 14.11054 14.07989
##     33     34     35     36     37     38     39     40
## 14.23123 14.14649 14.07966 14.12981 14.06050 14.13512 13.95263 14.11190
##     41     42     43     44     45     46     47     48
## 14.08241 14.06493 14.17292 14.06162 14.01930 14.06976 14.01167 14.03372
##     49     50     51     52     53     54     55     56
## 14.03586 14.05668 14.07222 14.04333 14.05078 14.01530 14.09941 14.00495
##     57     58     59     60     61     62     63     64
## 13.99563 14.00382 13.97116 14.02567 13.94730 13.96004 14.20387 13.97941
##     65     66     67     68     69     70     71     72
## 13.98644 13.89414 13.90252 13.95756 13.89553 13.95961 13.90213 13.90434
##     73     74     75     76     77     78     79     80
## 13.67571 13.87491 13.98267 13.84994 13.93263 14.62859 13.86336 13.84225
##     81     82     83     84     85     86     87     88
## 13.91507 13.94317 13.88954 13.92537 13.88026 13.79149 13.80323 13.80284
##     89     90     91     92     93     94     95     96
## 13.91712 13.80649 13.84813 13.78059 13.84311 13.79478 13.87245 13.81529
```


##	97	98	99	100	101	102	103	104
##	13.79985	13.79737	13.88591	13.76252	13.69253	13.82254	13.77078	13.75490
##	105	106	107	108	109	110	111	112
##	13.73412	13.74940	13.80121	13.77229	13.67625	13.73635	13.74117	13.73848
##	113	114	115	116	117	118	119	120
##	13.77277	13.74134	13.60506	13.73278	13.72873	13.75093	13.74819	13.73346
##	121	122	123	124	125	126	127	128
##	13.72732	13.67711	13.73808	13.70096	13.69793	13.69636	13.69826	13.67318
##	129	130	131	132	133	134	135	136
##	13.75046	13.68884	13.69747	13.69358	13.69780	13.68992	13.69093	13.69291
##	137	138	139	140	141	142	143	144
##	13.69764	13.69658	13.69216	13.68149	13.69205	13.67322	13.67638	13.71192
##	145	146	147	148	149	150	151	152
##	13.68126	13.67874	13.67198	13.68523	13.73016	13.73171	13.65979	13.67418
##	153	154	155	156	157	158	159	160
##	13.67969	13.64934	13.67378	13.67479	13.69219	13.68736	13.67181	13.67646
##	161	162	163	164	165	166	167	168
##	13.66377	13.67163	13.67762	13.65286	13.85661	13.69084	13.65988	13.66858
##	169	170	171	172	173	174	175	176
##	13.66271	13.71431	13.65436	13.58305	13.64494	13.64940	13.65040	13.63903
##	177	178	179	180	181	182	183	184
##	13.63768	13.64734	13.67208	13.65940	13.64353	13.63993	13.64705	13.64499
##	185	186	187	188	189	190	191	192
##	13.63927	13.63308	13.63627	13.63205	13.65137	13.65249	13.63560	13.58759
##	193	194	195	196	197	198	199	200
##	13.62437	13.63124	13.61403	13.62369	13.58334	13.61458	13.56187	13.62332
##	201	202	203	204	205	206	207	208
##	13.63634	13.61637	13.61068	13.62994	13.60366	13.57941	13.59431	13.56327
##	209	210	211	212	213	214	215	216
##	13.62597	13.61530	13.60510	13.60371	13.60352	13.60343	13.59697	13.53593
##	217	218	219	220	221	222	223	224
##	13.56235	13.64688	13.59252	13.72045	13.62547	13.59087	13.59009	13.58795
##	225	226	227	228	229	230	231	232
##	13.55285	13.59213	13.58140	13.60719	13.60429	13.53088	13.55687	13.58362
##	233	234	235	236	237	238	239	240
##	13.55042	13.53379	13.56415	13.58900	13.57778	13.56426	13.57026	13.56236
##	241	242	243	244	245	246	247	248
##	13.57684	13.57769	13.58148	13.61042	13.57331	13.57180	13.61368	13.54924
##	249	250	251	252	253	254	255	256
##	13.59727	13.56475	13.55694	13.59250	13.53310	13.56527	13.55065	13.55475
##	257	258	259	260	261	262	263	264
##	13.53105	13.55400	13.56381	13.55591	13.57509	13.56152	13.58059	13.61014
##	265	266	267	268	269	270	271	272
##	13.54921	13.56041	13.58842	13.56289	13.55497	13.56117	13.56689	13.55299
##	273	274	275	276	277	278	279	280
##	13.58894	13.55304	13.55728	13.58943	13.53651	13.55382	13.55086	13.55366
##	281	282	283	284	285	286	287	288
##	13.55404	13.51456	13.53755	13.59785	13.53950	13.54555	13.52579	13.54631
##	289	290	291	292	293	294	295	296
##	13.54052	13.58267	13.49067	13.53998	13.48207	13.55977	13.52104	13.55850
##	297	298	299	300	301	302	303	304
##	13.54950	13.54177	13.54612	13.38558	13.57264	13.55167	13.53724	13.50621
##	305	306	307	308	309	310	311	312
##	13.53511	13.54820	13.52596	13.49892	13.53341	13.52599	13.52373	13.52976

##	313	314	315	316	317	318	319	320
##	13.53392	13.52595	13.55179	13.54511	13.55692	13.49270	13.52056	13.54252
##	321	322	323	324	325	326	327	328
##	13.52256	13.52624	13.55444	13.52440	13.52807	13.52742	13.53502	13.53822
##	329	330	331	332	333	334	335	336
##	13.52805	13.52700	13.53943	13.52837	13.48538	13.52994	13.52113	13.51757
##	337	338	339	340	341	342	343	344
##	13.47937	13.52196	13.53081	13.53524	13.53189	13.53675	13.54550	13.53794
##	345	346	347	348	349	350	351	352
##	13.51580	13.53614	13.50244	13.50883	13.50805	13.49718	13.54320	13.52912
##	353	354	355	356	357	358	359	360
##	13.50163	13.48156	13.50599	13.50677	13.50683	13.52075	13.50190	13.46397
##	361	362	363	364	365	366	367	368
##	13.49823	13.42003	13.52706	13.52736	13.45122	13.46751	13.42383	13.50619
##	369	370	371	372	373	374	375	376
##	13.50111	13.51230	13.49865	13.47776	13.51956	13.47846	13.48622	13.47919
##	377	378	379	380	381	382	383	384
##	13.49752	13.52413	13.55071	13.49188	13.47675	13.44933	13.51838	13.48731
##	385	386	387	388	389	390	391	392
##	13.59888	13.49326	13.50795	13.50748	13.48158	13.43285	13.48957	13.49109
##	393	394	395	396	397	398	399	400
##	13.48843	13.43796	13.50427	13.47469	13.48860	13.48281	13.50290	13.48065
##	401	402	403	404	405	406	407	408
##	13.48026	13.50129	13.45772	13.49638	13.49747	13.48847	13.48560	13.48428
##	409	410	411	412	413	414	415	416
##	13.46952	13.41480	13.47672	13.48874	13.49269	13.47074	13.48541	13.47239
##	417	418	419	420	421	422	423	424
##	13.47384	13.44052	13.43781	13.40001	13.50673	13.48478	13.47344	13.52182
##	425	426	427	428	429	430	431	432
##	13.44869	13.46115	13.46603	13.48721	13.46447	13.39143	13.45137	13.41780
##	433	434	435	436	437	438	439	440
##	13.43687	13.44929	13.46976	13.43966	13.47460	13.46015	13.45689	13.45191
##	441	442	443	444	445	446	447	448
##	13.40631	13.42888	13.37088	13.42001	13.44557	13.47462	13.46123	13.47013
##	449	450	451	452	453	454	455	456
##	13.45742	13.45013	13.45978	13.43164	13.40552	13.48700	13.44066	13.38117
##	457	458	459	460	461	462	463	464
##	13.45730	13.45272	13.43721	13.44724	13.48455	13.42746	13.45554	13.45163
##	465	466	467	468	469	470	471	472
##	13.50423	13.43683	13.43737	13.39431	13.38404	13.47272	13.46918	13.42501
##	473	474	475	476	477	478	479	480
##	13.43266	13.40500	13.44282	13.44767	13.44130	13.43555	13.38581	13.43081
##	481	482	483	484	485	486	487	488
##	13.42632	13.42048	13.43311	13.39589	13.53278	13.37997	13.41281	13.42053
##	489	490	491	492	493	494	495	496
##	13.44567	13.34831	13.43186	13.43727	13.38060	13.43847	13.39219	13.40897
##	497	498	499	500	501	502	503	504
##	13.37875	13.36441	13.41541	13.40519	13.31251	13.46950	13.43502	13.40770
##	505	506	507	508	509	510	511	512
##	13.41221	13.41773	13.41406	13.26722	13.38997	13.40888	13.38574	13.34489
##	513	514	515	516	517	518	519	520
##	13.40954	13.38110	13.42991	13.31805	13.33736	13.38432	13.33390	13.41023
##	521	522	523	524	525	526	527	528
##	13.41218	13.39439	13.39200	13.40860	13.34216	13.38042	13.32492	13.38513

##	529	530	531	532	533	534	535	536
##	13.38327	13.38474	13.38782	13.37294	13.38768	13.42366	13.30989	13.43161
##	537	538	539	540	541	542	543	544
##	13.36218	13.41133	13.37142	13.60643	13.37700	13.38284	13.37885	13.32717
##	545	546	547	548	549	550	551	552
##	13.39640	13.38506	13.40165	13.38141	13.31920	13.41874	13.33944	13.38760
##	553	554	555	556	557	558	559	560
##	13.33875	13.38108	13.54015	13.39043	13.41705	13.38321	13.36876	13.39014
##	561	562	563	564	565	566	567	568
##	13.31212	13.33565	13.31216	13.32933	13.37460	13.26471	13.31183	13.33396
##	569	570	571	572	573	574	575	576
##	13.35134	13.37136	13.36785	13.36908	13.37012	13.37522	13.36148	13.33623
##	577	578	579	580	581	582	583	584
##	13.37568	13.38931	13.34486	13.36507	13.44572	13.37517	13.30849	13.34570
##	585	586	587	588	589	590	591	592
##	13.31254	13.34849	13.36710	13.35895	13.38010	13.35135	13.35008	13.33664
##	593	594	595	596	597	598	599	600
##	13.36547	13.37805	13.34323	13.38451	13.35354	13.30558	13.34277	13.34125
##	601	602	603	604	605	606	607	608
##	13.34934	13.37431	13.28511	13.35626	13.34719	13.30514	13.37382	13.38335
##	609	610	611	612	613	614	615	616
##	13.33412	13.33665	13.32924	13.31944	13.29773	13.29325	13.29283	13.31024
##	617	618	619	620	621	622	623	624
##	13.33361	13.34456	13.31438	13.33271	13.32439	13.32103	13.26566	13.34161
##	625	626	627	628	629	630	631	632
##	13.27658	13.32294	13.26394	13.26953	13.30745	13.33660	13.31380	13.28767
##	633	634	635	636	637	638	639	640
##	13.29251	13.33186	13.30701	13.30369	13.30409	13.26269	13.29910	13.36193
##	641	642	643	644	645	646	647	648
##	13.28582	13.34966	13.29998	13.31319	13.30245	13.37770	13.27771	13.26533
##	649	650	651	652	653	654	655	656
##	13.31139	13.21411	13.28394	13.24671	13.17984	13.34163	13.28417	13.27719
##	657	658	659	660	661	662	663	664
##	13.21310	13.31596	13.26535	13.30187	13.32532	13.18032	13.27644	13.22360
##	665	666	667	668	669	670	671	672
##	13.30579	13.32377	13.26231	13.22477	13.27955	13.24811	13.39654	13.27036
##	673	674	675	676	677	678	679	680
##	13.22052	13.28509	13.12524	13.23645	13.25889	13.23725	13.26162	13.25919
##	681	682	683	684	685	686	687	688
##	13.21686	13.26245	13.26590	13.30147	13.26572	13.27839	13.24557	13.26054
##	689	690	691	692	693	694	695	696
##	13.19171	13.20929	13.26182	13.25569	13.24757	13.13648	13.22017	13.21410
##	697	698	699	700	701	702	703	704
##	13.26919	13.23577	13.26246	13.27975	13.27334	13.24234	13.26973	13.19847
##	705	706	707	708	709	710	711	712
##	13.21951	13.18849	13.26059	13.22342	13.23567	13.22613	13.22509	13.21285
##	713	714	715	716	717	718	719	720
##	13.21051	13.19970	13.22275	13.26993	13.21371	13.26642	13.25432	13.25657
##	721	722	723	724	725	726	727	728
##	13.20187	13.13419	13.20221	13.23397	13.20101	13.30141	13.24197	13.22486
##	729	730	731	732	733	734	735	736
##	13.21512	13.21978	13.21911	13.21802	13.21639	13.17111	13.23231	13.19305
##	737	738	739	740	741	742	743	744
##	13.22096	13.22799	13.21547	13.22741	13.19763	13.23149	13.29768	13.19886

##	745	746	747	748	749	750	751	752
##	13.11782	13.11296	13.21208	13.21986	13.18087	13.17132	13.17132	13.15726
##	753	754	755	756	757	758	759	760
##	13.17947	13.19953	13.21882	13.18949	13.19688	13.12060	13.19584	13.18995
##	761	762	763	764	765	766	767	768
##	13.17145	13.18964	13.15925	13.18915	13.19886	13.11826	13.24092	13.13176
##	769	770	771	772	773	774	775	776
##	13.17028	13.19585	13.18559	13.18559	13.18427	13.18240	13.18964	13.18119
##	777	778	779	780	781	782	783	784
##	13.09388	13.19668	13.20755	13.16698	13.16870	13.16406	13.19844	13.12040
##	785	786	787	788	789	790	791	792
##	13.14231	13.19150	13.18239	13.15792	13.16221	13.20226	13.21359	13.10878
##	793	794	795	796	797	798	799	800
##	13.08791	13.12885	13.14483	13.17570	13.16270	13.10309	13.15532	13.16319
##	801	802	803	804	805	806	807	808
##	13.15462	13.19983	13.11954	13.07711	13.18398	13.19080	13.15545	13.17139
##	809	810	811	812	813	814	815	816
##	13.19628	13.16650	13.13030	13.14217	13.14547	13.13647	13.14217	13.14517
##	817	818	819	820	821	822	823	824
##	13.20777	13.15833	13.08618	13.12332	13.08742	13.14243	13.12386	13.11740
##	825	826	827	828	829	830	831	832
##	13.12965	13.04399	13.17512	13.13613	13.10306	13.11774	13.10525	13.09823
##	833	834	835	836	837	838	839	840
##	13.13561	13.07596	13.12675	13.11158	13.11711	13.01923	13.12199	13.07877
##	841	842	843	844	845	846	847	848
##	13.18740	13.10121	13.05328	13.10356	13.02492	13.07533	13.18419	13.05841
##	849	850	851	852	853	854	855	856
##	13.04113	13.11573	13.11498	13.04502	12.99889	13.07932	13.07195	13.11766
##	857	858	859	860	861	862	863	864
##	13.23197	13.11891	13.09801	13.11919	13.10283	13.12879	13.10985	13.07485
##	865	866	867	868	869	870	871	872
##	13.08133	13.10608	13.07803	13.07667	13.09626	13.06921	12.99988	13.08862
##	873	874	875	876	877	878	879	880
##	13.07527	13.07411	13.08786	13.03508	13.06072	13.00423	12.98960	13.04718
##	881	882	883	884	885	886	887	888
##	13.04969	13.06576	13.04266	13.04667	13.05956	13.05209	13.03995	13.01525
##	889	890	891	892	893	894	895	896
##	13.03604	12.98521	13.03633	12.99048	13.02817	12.99883	13.09263	13.04474
##	897	898	899	900	901	902	903	904
##	13.05750	13.01939	13.05331	12.99364	13.07192	12.97115	13.02585	13.01479
##	905	906	907	908	909	910	911	912
##	13.04083	13.01703	12.97777	13.03621	13.01171	13.01400	13.01714	13.01640
##	913	914	915	916	917	918	919	920
##	12.96919	12.89728	13.02116	13.00529	13.02551	13.04950	13.05971	13.01393
##	921	922	923	924	925	926	927	928
##	13.00962	13.02810	13.02944	13.00261	13.00626	13.00328	12.99510	13.00064
##	929	930	931	932	933	934	935	936
##	13.00816	13.00291	12.98790	13.01674	12.91486	12.99533	12.99554	12.99243
##	937	938	939	940	941	942	943	944
##	13.07679	13.00423	13.00098	12.99742	12.99579	12.98464	12.97568	12.94603
##	945	946	947	948	949	950	951	952
##	12.99410	12.98116	12.98673	12.92164	13.01326	12.97406	12.96042	12.95304
##	953	954	955	956	957	958	959	960
##	12.90125	12.94182	13.00880	12.97879	13.01164	12.96822	12.97150	12.93294

##	961	962	963	964	965	966	967	968
##	12.95011	12.95891	12.95621	12.95195	12.95289	12.95289	13.05038	12.95052
##	969	970	971	972	973	974	975	976
##	12.93085	12.96609	12.97235	12.98023	12.92046	12.92970	12.91013	12.84262
##	977	978	979	980	981	982	983	984
##	12.93815	12.97277	12.94483	12.83940	12.96529	12.99043	12.90571	13.02305
##	985	986	987	988	989	990	991	992
##	12.91152	12.93318	12.93373	12.91471	12.86876	12.89903	12.96411	12.95474
##	993	994	995	996	997	998	999	1000
##	12.92282	12.96316	12.94235	12.91442	12.91498	12.90828	12.85714	12.85050
##	1001	1002	1003	1004	1005	1006	1007	1008
##	12.97010	12.98295	12.75958	12.85823	12.91966	12.86440	12.95237	12.87599
##	1009	1010	1011	1012	1013	1014	1015	1016
##	12.84886	12.84857	12.88138	12.86808	12.88896	12.83884	12.88676	12.87273
##	1017	1018	1019	1020	1021	1022	1023	1024
##	12.87719	12.79226	12.92009	12.83535	12.81097	12.78067	12.80808	12.78949
##	1025	1026	1027	1028	1029	1030	1031	1032
##	12.78336	12.83229	12.86722	12.80755	12.86752	12.75444	12.78648	12.88033
##	1033	1034	1035	1036	1037	1038	1039	1040
##	12.76315	12.74710	12.79445	12.77129	12.75438	12.76333	12.76338	12.76692
##	1041	1042	1043	1044	1045	1046	1047	1048
##	12.85113	12.73799	12.90362	12.69998	12.67456	12.64911	12.69848	12.72790
##	1049	1050	1051	1052	1053	1054	1055	1056
##	12.73815	12.91500	12.68722	12.84183	12.65614	12.72635	12.71245	12.72028
##	1057	1058	1059	1060	1061	1062	1063	1064
##	12.73252	12.68451	12.65975	13.07123	12.69036	12.69444	12.60747	12.65283
##	1065	1066	1067	1068	1069	1070	1071	1072
##	12.58635	12.60149	12.58650	12.56747	12.57375	12.56951	12.59775	12.59156
##	1073	1074	1075	1076	1077	1078	1079	1080
##	12.66589	12.51935	12.54074	12.55847	12.57088	12.61250	12.54111	12.55535
##	1081	1082	1083	1084	1085	1086	1087	1088
##	12.50034	12.53156	12.45079	12.49643	12.49623	12.49467	12.46781	12.49410
##	1089	1090	1091	1092	1093	1094	1095	1096
##	12.49399	12.45712	12.49090	12.47118	12.43287	12.44793	12.41604	12.45180
##	1097	1098	1099	1100	1101	1102	1103	1104
##	12.44622	12.40193	12.39246	12.38751	12.39372	12.59066	12.35468	12.38364
##	1105	1106	1107	1108	1109	1110	1111	1112
##	12.37534	12.33067	12.37964	12.46796	12.40824	12.34941	12.27026	12.32556
##	1113	1114	1115	1116	1117	1118	1119	1120
##	12.23799	12.21172	12.19811	12.22817	12.19449	11.37987	12.34055	12.14762
##	1121	1122	1123	1124	1125	1126	1127	1128
##	12.11566	12.13306	11.97444	11.79588	11.85189	11.73083	11.58703	11.66225
##	1129	1130	1131	1132	1133	1134	1135	1136
##	11.71089	11.38762	11.39877	11.48162	11.49107	11.25123	11.41698	15.02372
##	1137	1138	1139	1140	1141	1142	1143	1144
##	14.97493	14.95874	14.67031	14.66109	14.72790	14.66448	14.61698	14.53200
##	1145	1146	1147	1148	1149	1150	1151	1152
##	14.53428	14.41492	14.36083	14.32376	14.38442	14.32776	14.26135	14.23032
##	1153	1154	1155	1156	1157	1158	1159	1160
##	14.26709	14.26983	14.17853	14.21211	14.23063	14.17979	14.24952	14.21157
##	1161	1162	1163	1164	1165	1166	1167	1168
##	14.17684	14.15865	14.14850	14.12732	14.17900	14.14408	14.07475	14.17641
##	1169	1170	1171	1172	1173	1174	1175	1176
##	14.09220	13.94911	14.10714	14.06921	14.12285	14.13567	14.05455	14.23060

##	1177	1178	1179	1180	1181	1182	1183	1184
##	14.04850	14.02006	14.05772	14.07425	14.11115	14.04169	13.95139	14.01665
##	1185	1186	1187	1188	1189	1190	1191	1192
##	14.08224	13.96393	13.98390	14.02818	14.04172	14.05758	14.03117	13.99036
##	1193	1194	1195	1196	1197	1198	1199	1200
##	13.95881	13.97284	13.97050	14.01064	13.98623	13.98384	14.05963	13.98875
##	1201	1202	1203	1204	1205	1206	1207	1208
##	14.06488	13.96660	14.06488	14.04112	14.19504	13.89088	13.94742	13.84020
##	1209	1210	1211	1212	1213	1214	1215	1216
##	14.01273	13.93326	13.94472	13.94940	13.88878	13.75556	13.83792	13.97398
##	1217	1218	1219	1220	1221	1222	1223	1224
##	13.98767	13.90545	13.94026	13.90404	13.89468	13.88707	13.88812	13.89924
##	1225	1226	1227	1228	1229	1230	1231	1232
##	13.88475	13.78640	13.89016	13.63933	13.98349	13.91263	13.90156	13.81875
##	1233	1234	1235	1236	1237	1238	1239	1240
##	13.78425	14.03426	13.90149	13.81380	13.98867	13.84079	13.80131	13.82056
##	1241	1242	1243	1244	1245	1246	1247	1248
##	13.75453	13.83113	13.86237	13.83796	13.95096	13.81227	13.86342	13.80252
##	1249	1250	1251	1252	1253	1254	1255	1256
##	13.80300	13.65419	13.84667	13.80473	13.79525	13.66607	13.82877	13.71197
##	1257	1258	1259	1260	1261	1262	1263	1264
##	13.80409	13.79232	13.79919	13.71052	13.81410	13.73506	13.78720	13.81235
##	1265	1266	1267	1268	1269	1270	1271	1272
##	13.78406	13.60818	13.78834	13.71600	13.78093	13.78401	13.79255	13.78126
##	1273	1274	1275	1276	1277	1278	1279	1280
##	13.78185	13.78716	13.77387	13.77763	13.77570	13.77400	13.87682	13.77516
##	1281	1282	1283	1284	1285	1286	1287	1288
##	13.70793	13.77794	13.76126	13.80549	13.76434	13.76268	13.78284	13.77269
##	1289	1290	1291	1292	1293	1294	1295	1296
##	13.70186	13.78437	13.75982	13.75464	13.75831	13.73071	13.73910	13.77457
##	1297	1298	1299	1300	1301	1302	1303	1304
##	13.73667	13.73923	13.74056	13.73936	13.75882	13.70186	13.74485	13.74326
##	1305	1306	1307	1308	1309	1310	1311	1312
##	13.74443	13.66194	13.65019	13.74400	13.69724	13.76906	13.73012	13.65079
##	1313	1314	1315	1316	1317	1318	1319	1320
##	13.71755	13.68735	13.72663	13.61233	13.69754	13.73494	13.75748	13.74414
##	1321	1322	1323	1324	1325	1326	1327	1328
##	13.70918	13.68846	13.71023	13.67250	13.67205	13.71705	13.75368	13.74162
##	1329	1330	1331	1332	1333	1334	1335	1336
##	13.80688	13.70805	13.76693	13.71274	13.71057	13.70460	13.71537	13.70672
##	1337	1338	1339	1340	1341	1342	1343	1344
##	13.70641	13.70601	13.69298	13.70301	13.68707	13.68550	13.73463	13.69729
##	1345	1346	1347	1348	1349	1350	1351	1352
##	13.68593	13.68945	13.66574	13.67756	13.70529	13.70523	13.68489	13.68570
##	1353	1354	1355	1356	1357	1358	1359	1360
##	13.69748	13.64743	13.68932	13.67965	13.71346	13.69077	13.61948	13.70178
##	1361	1362	1363	1364	1365	1366	1367	1368
##	13.70548	13.67526	13.62451	13.67988	13.68068	13.72113	13.69255	13.69157
##	1369	1370	1371	1372	1373	1374	1375	1376
##	13.70234	13.64165	13.68362	13.66093	13.67331	13.76692	13.66441	13.68187
##	1377	1378	1379	1380	1381	1382	1383	1384
##	13.64902	13.65492	13.68159	13.66786	13.70223	13.67300	13.67950	13.64971
##	1385	1386	1387	1388	1389	1390	1391	1392
##	13.66218	13.68154	13.66198	13.60167	13.69188	13.61944	13.64764	13.68201

##	1393	1394	1395	1396	1397	1398	1399	1400
##	13.68029	13.64543	13.64955	13.67261	13.65398	13.61747	13.65623	13.61726
##	1401	1402	1403	1404	1405	1406	1407	1408
##	13.70918	13.64543	13.67127	13.64915	13.64553	13.57662	13.67338	13.64959
##	1409	1410	1411	1412	1413	1414	1415	1416
##	13.65326	13.58837	13.64222	13.65908	13.66163	13.66013	13.67141	13.63571
##	1417	1418	1419	1420	1421	1422	1423	1424
##	13.63511	13.63889	13.62815	13.60231	13.58643	13.66969	13.63829	13.63631
##	1425	1426	1427	1428	1429	1430	1431	1432
##	13.58200	13.62155	13.58703	13.63225	13.64583	13.60947	13.58759	13.63366
##	1433	1434	1435	1436	1437	1438	1439	1440
##	13.63438	13.63146	13.62696	13.65997	13.63532	13.62622	13.64609	13.57542
##	1441	1442	1443	1444	1445	1446	1447	1448
##	13.62176	13.62623	13.63512	13.57459	13.60921	13.65854	13.65859	13.55367
##	1449	1450	1451	1452	1453	1454	1455	1456
##	13.56790	13.63640	13.62149	13.61772	13.61262	13.64860	13.60711	13.60929
##	1457	1458	1459	1460	1461	1462	1463	1464
##	13.61824	13.61238	13.61383	13.58457	13.61470	13.59168	13.65061	13.60703
##	1465	1466	1467	1468	1469	1470	1471	1472
##	13.60064	13.59530	13.59609	13.58922	13.59168	13.59951	13.66640	13.59116
##	1473	1474	1475	1476	1477	1478	1479	1480
##	13.61890	13.59995	13.59762	13.62496	13.61513	13.55475	13.52547	13.60773
##	1481	1482	1483	1484	1485	1486	1487	1488
##	13.57041	13.58868	13.58747	13.58812	13.59383	13.58096	13.58985	13.59514
##	1489	1490	1491	1492	1493	1494	1495	1496
##	13.59039	13.61949	13.52267	13.63404	13.57446	13.60271	13.58474	13.57351
##	1497	1498	1499	1500	1501	1502	1503	1504
##	13.59830	13.62584	13.57103	13.58061	13.58117	13.57173	13.59848	13.59342
##	1505	1506	1507	1508	1509	1510	1511	1512
##	13.56891	13.60516	13.56013	13.48942	13.52458	13.59730	13.60371	13.57314
##	1513	1514	1515	1516	1517	1518	1519	1520
##	13.59746	13.53949	13.55515	13.58679	13.55998	13.57244	13.57994	13.55745
##	1521	1522	1523	1524	1525	1526	1527	1528
##	13.54053	13.60874	13.60226	13.56527	13.47929	13.57156	13.59822	13.59340
##	1529	1530	1531	1532	1533	1534	1535	1536
##	13.55757	13.53172	13.56046	13.60885	13.52507	13.58912	13.60089	13.55369
##	1537	1538	1539	1540	1541	1542	1543	1544
##	13.56071	13.55433	13.52726	13.55961	13.54756	13.52973	13.56968	13.56384
##	1545	1546	1547	1548	1549	1550	1551	1552
##	13.56649	13.53662	13.54572	13.56340	13.52715	13.54767	13.51481	13.56144
##	1553	1554	1555	1556	1557	1558	1559	1560
##	13.57398	13.44816	13.54010	13.54170	13.54157	13.53788	13.53550	13.53214
##	1561	1562	1563	1564	1565	1566	1567	1568
##	13.48119	13.52378	13.53228	13.53231	13.52683	13.52887	13.54097	13.52451
##	1569	1570	1571	1572	1573	1574	1575	1576
##	13.52761	13.55346	13.53221	13.55395	13.52447	13.52804	13.53291	13.72241
##	1577	1578	1579	1580	1581	1582	1583	1584
##	13.50168	13.52389	13.53495	13.56112	13.53662	13.54829	13.52196	13.52196
##	1585	1586	1587	1588	1589	1590	1591	1592
##	13.52095	13.64844	13.52379	13.50942	13.50860	13.50921	13.50727	13.51389
##	1593	1594	1595	1596	1597	1598	1599	1600
##	13.45153	13.50477	13.50770	13.47722	13.50649	13.53717	13.52582	13.45418
##	1601	1602	1603	1604	1605	1606	1607	1608
##	13.48493	13.48179	13.51032	13.48296	13.50392	13.45288	13.50813	13.41716

##	1609	1610	1611	1612	1613	1614	1615	1616
##	13.51538	13.50041	13.48558	13.51410	13.49513	13.48712	13.48081	13.45670
##	1617	1618	1619	1620	1621	1622	1623	1624
##	13.47805	13.54323	13.42968	13.48959	13.50518	13.49568	13.52206	13.48917
##	1625	1626	1627	1628	1629	1630	1631	1632
##	13.45214	13.51493	13.49269	13.49256	13.50806	13.48359	13.49008	13.50200
##	1633	1634	1635	1636	1637	1638	1639	1640
##	13.48919	13.49211	13.48697	13.47847	13.49197	13.47667	13.47712	13.46803
##	1641	1642	1643	1644	1645	1646	1647	1648
##	13.41791	13.50247	13.49436	13.42878	13.44955	13.45640	13.44075	13.37709
##	1649	1650	1651	1652	1653	1654	1655	1656
##	13.48586	13.45866	13.45629	13.41514	13.42243	13.45752	13.45182	13.45552
##	1657	1658	1659	1660	1661	1662	1663	1664
##	13.46869	13.45776	13.45964	13.46240	13.38791	13.47818	13.45384	13.49376
##	1665	1666	1667	1668	1669	1670	1671	1672
##	13.47770	13.47336	13.45568	13.47219	13.45677	13.43465	13.45361	13.45589
##	1673	1674	1675	1676	1677	1678	1679	1680
##	13.46376	13.51058	13.45938	13.37613	13.43595	13.44843	13.47050	13.45117
##	1681	1682	1683	1684	1685	1686	1687	1688
##	13.45553	13.46138	13.52162	13.44589	13.46040	13.47281	13.44149	13.40638
##	1689	1690	1691	1692	1693	1694	1695	1696
##	13.45446	13.43654	13.45041	13.47136	13.41816	13.33657	13.43281	13.44473
##	1697	1698	1699	1700	1701	1702	1703	1704
##	13.41991	13.43043	13.44202	13.44378	13.40312	13.39750	13.45061	13.44229
##	1705	1706	1707	1708	1709	1710	1711	1712
##	13.44219	13.45316	13.44687	13.42657	13.41369	13.40981	13.40869	13.37958
##	1713	1714	1715	1716	1717	1718	1719	1720
##	13.46588	13.43516	13.45730	13.43122	13.39437	13.31298	13.42199	13.44642
##	1721	1722	1723	1724	1725	1726	1727	1728
##	13.36164	13.33616	13.43159	13.43225	13.42035	13.38507	13.33183	13.39872
##	1729	1730	1731	1732	1733	1734	1735	1736
##	13.43362	13.43492	13.34853	13.44032	13.34349	13.46677	13.41290	13.44557
##	1737	1738	1739	1740	1741	1742	1743	1744
##	13.41748	13.40842	13.34546	13.38541	13.38614	13.42229	13.37687	13.39679
##	1745	1746	1747	1748	1749	1750	1751	1752
##	13.38463	13.40767	13.41194	13.35710	13.38432	13.38141	13.37948	13.34962
##	1753	1754	1755	1756	1757	1758	1759	1760
##	13.45022	13.38519	13.44105	13.40941	13.42873	13.38190	13.40062	13.38174
##	1761	1762	1763	1764	1765	1766	1767	1768
##	13.40865	13.39009	13.38084	13.40235	13.37706	13.34286	13.40175	13.38743
##	1769	1770	1771	1772	1773	1774	1775	1776
##	13.37861	13.39909	13.38069	13.40352	13.39665	13.38022	13.31231	13.34111
##	1777	1778	1779	1780	1781	1782	1783	1784
##	13.37956	13.40678	13.33567	13.36907	13.35119	13.37692	13.39721	13.38239
##	1785	1786	1787	1788	1789	1790	1791	1792
##	13.33263	13.37027	13.35222	13.27474	13.38816	13.41355	13.38689	13.39477
##	1793	1794	1795	1796	1797	1798	1799	1800
##	13.26078	13.34824	13.33945	13.37438	13.34078	13.37896	13.34750	13.35182
##	1801	1802	1803	1804	1805	1806	1807	1808
##	13.36617	13.36963	13.34315	13.34025	13.32905	13.34340	13.36951	13.34950
##	1809	1810	1811	1812	1813	1814	1815	1816
##	13.38011	13.34413	13.34347	13.34324	13.34115	13.34770	13.34713	13.33779
##	1817	1818	1819	1820	1821	1822	1823	1824
##	13.32266	13.34411	13.35283	13.34432	13.37390	13.36714	13.31663	13.31906

##	1825	1826	1827	1828	1829	1830	1831	1832
##	13.34314	13.34558	13.32925	13.24705	13.26889	13.29124	13.38148	13.32286
##	1833	1834	1835	1836	1837	1838	1839	1840
##	13.37739	13.32443	13.31883	13.24971	13.31127	13.27572	13.32360	13.30335
##	1841	1842	1843	1844	1845	1846	1847	1848
##	13.30192	13.32857	13.23388	13.35403	13.31085	13.39751	13.30842	13.29592
##	1849	1850	1851	1852	1853	1854	1855	1856
##	13.30208	13.29896	13.30082	13.30945	13.24410	13.29348	13.29577	13.30681
##	1857	1858	1859	1860	1861	1862	1863	1864
##	13.33889	13.32303	13.32267	13.26134	13.26202	13.25340	13.27592	13.33162
##	1865	1866	1867	1868	1869	1870	1871	1872
##	13.27105	13.31386	13.30476	13.27827	13.27025	13.28611	13.30103	13.26368
##	1873	1874	1875	1876	1877	1878	1879	1880
##	13.27575	13.24765	13.34724	13.28962	13.27071	13.36230	13.24184	13.28337
##	1881	1882	1883	1884	1885	1886	1887	1888
##	13.32577	13.27908	13.26218	13.26739	13.27708	13.27036	13.23050	13.23667
##	1889	1890	1891	1892	1893	1894	1895	1896
##	13.22513	13.27257	13.27741	13.27329	13.24921	13.26552	13.23815	13.26514
##	1897	1898	1899	1900	1901	1902	1903	1904
##	13.19900	13.19417	13.24544	13.30095	13.26166	13.23414	13.17081	13.22173
##	1905	1906	1907	1908	1909	1910	1911	1912
##	13.15358	13.23544	13.24704	13.15813	13.22539	13.25098	13.23279	13.34045
##	1913	1914	1915	1916	1917	1918	1919	1920
##	13.21443	13.26465	13.20573	13.21712	13.25193	13.17887	13.17203	13.21035
##	1921	1922	1923	1924	1925	1926	1927	1928
##	13.25926	13.23737	13.21166	13.22292	13.20618	13.19144	13.29813	13.21021
##	1929	1930	1931	1932	1933	1934	1935	1936
##	13.18664	13.20581	13.19683	13.19926	13.22452	13.25915	13.20891	13.21769
##	1937	1938	1939	1940	1941	1942	1943	1944
##	13.20103	13.12309	13.22560	13.26225	13.18665	13.15930	13.18777	13.20273
##	1945	1946	1947	1948	1949	1950	1951	1952
##	13.20584	13.18953	13.11703	13.21579	13.11529	13.16851	13.27730	13.20636
##	1953	1954	1955	1956	1957	1958	1959	1960
##	13.20477	13.20142	13.11867	13.14708	13.20218	13.16000	13.13793	13.22951
##	1961	1962	1963	1964	1965	1966	1967	1968
##	13.19188	13.14788	13.19217	13.12570	13.18035	13.19067	13.14368	13.16620
##	1969	1970	1971	1972	1973	1974	1975	1976
##	13.19459	13.20413	13.25422	13.18979	13.14205	13.14080	13.12465	13.08392
##	1977	1978	1979	1980	1981	1982	1983	1984
##	13.17569	13.12633	13.15043	13.15845	13.16006	13.15708	13.13076	13.08091
##	1985	1986	1987	1988	1989	1990	1991	1992
##	13.13378	13.11720	13.14163	13.16307	13.07910	13.12196	13.15087	13.00561
##	1993	1994	1995	1996	1997	1998	1999	2000
##	13.12229	13.15319	13.12142	13.17198	13.00779	13.09595	13.15838	13.05180
##	2001	2002	2003	2004	2005	2006	2007	2008
##	13.13749	13.08954	13.06255	13.12343	13.11801	13.09844	13.03384	13.07669
##	2009	2010	2011	2012	2013	2014	2015	2016
##	13.08454	13.04900	13.07200	13.11143	13.07315	13.06788	13.06391	13.09049
##	2017	2018	2019	2020	2021	2022	2023	2024
##	13.03313	13.01966	13.11391	13.08946	13.11334	13.04517	13.02990	13.07060
##	2025	2026	2027	2028	2029	2030	2031	2032
##	13.00140	13.07543	13.10964	13.04833	13.04980	13.07632	13.09464	13.20994
##	2033	2034	2035	2036	2037	2038	2039	2040
##	12.98840	13.07173	13.08623	13.02391	13.01539	13.08277	12.99601	13.03735

##	2041	2042	2043	2044	2045	2046	2047	2048
##	13.05083	12.95191	13.07083	13.02226	13.00441	13.03930	13.04003	13.00183
##	2049	2050	2051	2052	2053	2054	2055	2056
##	12.98450	13.01326	12.99824	13.07605	12.98419	13.04127	13.00872	13.11033
##	2057	2058	2059	2060	2061	2062	2063	2064
##	12.98169	13.07801	12.98250	12.99206	12.94486	13.14159	13.00846	13.04895
##	2065	2066	2067	2068	2069	2070	2071	2072
##	13.02514	12.98283	12.96018	12.99872	12.94256	12.95930	12.96820	12.96717
##	2073	2074	2075	2076	2077	2078	2079	2080
##	13.05420	12.95025	12.89087	12.95481	12.90000	12.88261	13.00070	12.92890
##	2081	2082	2083	2084	2085	2086	2087	2088
##	12.97195	12.89656	12.94519	12.97735	12.94654	12.91375	12.85375	12.91260
##	2089	2090	2091	2092	2093	2094	2095	2096
##	12.88975	12.85987	12.89897	12.90044	12.96926	12.90416	12.94582	12.91582
##	2097	2098	2099	2100	2101	2102	2103	2104
##	12.93983	12.91178	12.92338	12.83900	12.88652	12.84704	12.85957	12.90328
##	2105	2106	2107	2108	2109	2110	2111	2112
##	12.83089	12.85923	12.84020	12.88097	12.84013	12.80709	12.80822	12.87404
##	2113	2114	2115	2116	2117	2118	2119	2120
##	12.80442	12.80834	12.89107	12.79354	12.74188	12.86674	12.91445	12.78946
##	2121	2122	2123	2124	2125	2126	2127	2128
##	12.82102	12.76369	12.74369	12.86173	12.76608	12.76858	12.77501	12.79990
##	2129	2130	2131	2132	2133	2134	2135	2136
##	12.78109	12.79013	12.81052	12.78374	12.70526	12.74436	12.70385	12.70442
##	2137	2138	2139	2140	2141	2142	2143	2144
##	12.69670	12.70696	12.69854	12.69236	12.65268	12.66071	12.56932	12.70799
##	2145	2146	2147	2148	2149	2150	2151	2152
##	12.60532	12.62684	12.56676	12.58836	12.60023	12.59822	12.64998	12.63047
##	2153	2154	2155	2156	2157	2158	2159	2160
##	12.60211	12.57736	12.58769	12.57632	12.58978	12.61180	12.55479	12.49808
##	2161	2162	2163	2164	2165	2166	2167	2168
##	12.57329	12.53138	12.52036	12.54485	12.54551	12.56903	12.57509	12.49549
##	2169	2170	2171	2172	2173	2174	2175	2176
##	12.61668	12.50411	12.48611	12.48582	12.49772	12.49579	12.40898	12.46799
##	2177	2178	2179	2180	2181	2182	2183	2184
##	12.44539	12.48915	12.40163	12.38662	12.51234	12.49229	12.39999	12.34686
##	2185	2186	2187	2188	2189	2190	2191	2192
##	12.35985	12.35194	12.29134	12.31043	12.30766	12.33796	12.29109	12.29082
##	2193	2194	2195	2196	2197	2198	2199	2200
##	12.23611	12.26003	12.23349	12.17608	12.15214	11.69713	11.63638	11.79214
##	2201	2202	2203	2204	2205	2206	2207	2208
##	11.91621	11.80417	11.68746	11.75790	11.69157	11.59161	11.74626	11.63640
##	2209	2210	2211	2212	2213	2214	2215	2216
##	11.43284	14.92663	14.67629	14.63959	14.65768	14.54322	14.48316	14.66988
##	2217	2218	2219	2220	2221	2222	2223	2224
##	14.62598	14.71374	14.45030	14.44365	14.47063	14.35397	14.43055	14.41806
##	2225	2226	2227	2228	2229	2230	2231	2232
##	14.35245	14.49244	14.28078	14.27134	14.24536	14.20652	14.31253	14.23480
##	2233	2234	2235	2236	2237	2238	2239	2240
##	14.26235	14.20854	14.23228	14.22938	14.20595	14.17519	14.18574	14.22048
##	2241	2242	2243	2244	2245	2246	2247	2248
##	14.14646	14.14198	14.23293	14.17604	14.19673	14.13902	14.17923	14.14569
##	2249	2250	2251	2252	2253	2254	2255	2256
##	14.12053	14.20326	13.95474	14.14536	14.12841	14.15149	14.14475	14.09665

##	2257	2258	2259	2260	2261	2262	2263	2264
##	14.11790	14.15476	14.07722	14.08225	13.94076	14.07716	13.84873	13.59982
##	2265	2266	2267	2268	2269	2270	2271	2272
##	14.07789	14.07318	14.12184	13.96382	14.04219	14.04839	14.06235	14.04215
##	2273	2274	2275	2276	2277	2278	2279	2280
##	13.89090	14.01264	14.12120	13.99454	14.02002	14.09741	14.04757	14.07811
##	2281	2282	2283	2284	2285	2286	2287	2288
##	13.98651	14.12919	14.01995	13.98883	13.99127	14.00144	14.00434	14.02223
##	2289	2290	2291	2292	2293	2294	2295	2296
##	14.03532	13.98891	13.96925	13.86584	13.98245	13.95480	13.98927	13.93839
##	2297	2298	2299	2300	2301	2302	2303	2304
##	13.95019	13.95482	13.97531	13.80282	14.01779	13.93539	13.96879	13.94450
##	2305	2306	2307	2308	2309	2310	2311	2312
##	13.96958	13.94873	13.94487	13.93352	13.94315	13.97374	13.94300	13.95928
##	2313	2314	2315	2316	2317	2318	2319	2320
##	13.90799	13.90900	13.95047	14.03166	13.91980	13.74010	13.90406	13.83632
##	2321	2322	2323	2324	2325	2326	2327	2328
##	13.90634	13.90539	13.92582	13.90082	13.90613	13.90018	13.91192	13.87775
##	2329	2330	2331	2332	2333	2334	2335	2336
##	13.90276	13.91072	13.85665	13.90295	13.89135	13.86930	13.74464	13.89594
##	2337	2338	2339	2340	2341	2342	2343	2344
##	13.89162	13.59470	14.20778	13.89221	13.89234	13.80979	13.83781	14.01600
##	2345	2346	2347	2348	2349	2350	2351	2352
##	13.80639	13.84768	13.81283	13.91103	13.88238	13.84027	13.84558	13.81692
##	2353	2354	2355	2356	2357	2358	2359	2360
##	13.80622	13.82249	13.85304	13.80981	13.84330	13.81404	13.82886	13.73836
##	2361	2362	2363	2364	2365	2366	2367	2368
##	13.81511	13.81757	13.79003	13.81084	13.79064	13.78552	13.76017	13.81396
##	2369	2370	2371	2372	2373	2374	2375	2376
##	13.81693	13.80678	13.74789	13.71400	13.79324	13.79968	13.77445	13.77421
##	2377	2378	2379	2380	2381	2382	2383	2384
##	13.78356	13.81356	13.81265	13.81732	13.79029	13.79353	13.77893	13.78088
##	2385	2386	2387	2388	2389	2390	2391	2392
##	13.77608	13.78370	13.77405	13.75764	13.78011	13.77829	13.76393	13.82871
##	2393	2394	2395	2396	2397	2398	2399	2400
##	13.76078	13.78771	13.77966	13.77329	13.76649	13.75212	13.77178	13.68537
##	2401	2402	2403	2404	2405	2406	2407	2408
##	13.76183	13.76295	13.77638	13.79701	13.76662	13.76186	13.76168	13.76060
##	2409	2410	2411	2412	2413	2414	2415	2416
##	13.75702	13.85609	13.75530	13.73391	13.74805	13.74675	13.78902	13.76137
##	2417	2418	2419	2420	2421	2422	2423	2424
##	13.75140	13.75212	13.75365	13.75236	13.74480	13.75507	13.74598	13.69140
##	2425	2426	2427	2428	2429	2430	2431	2432
##	13.72987	13.74979	13.74973	13.74791	13.74964	13.74679	13.74297	13.72478
##	2433	2434	2435	2436	2437	2438	2439	2440
##	13.74002	13.76269	13.75049	13.74523	13.74614	13.74232	13.74516	13.74197
##	2441	2442	2443	2444	2445	2446	2447	2448
##	13.74381	13.74239	13.74363	13.74245	13.74859	13.74032	13.68725	13.73507
##	2449	2450	2451	2452	2453	2454	2455	2456
##	13.73736	13.75398	13.73980	13.73463	13.74396	13.72210	13.74887	13.76450
##	2457	2458	2459	2460	2461	2462	2463	2464
##	13.73168	13.73645	13.75405	13.74410	13.71484	13.75281	13.72495	13.73161
##	2465	2466	2467	2468	2469	2470	2471	2472
##	13.74137	13.73756	13.73724	13.73917	13.73423	13.75168	13.72939	13.72658

##	2473	2474	2475	2476	2477	2478	2479	2480
##	13.72344	13.72769	13.75103	13.72151	13.69373	13.72057	13.71538	13.71511
##	2481	2482	2483	2484	2485	2486	2487	2488
##	13.75213	13.72136	13.72177	13.72235	13.71862	13.68572	13.71510	13.71001
##	2489	2490	2491	2492	2493	2494	2495	2496
##	13.69473	13.59224	13.77936	13.71180	13.66681	13.72123	13.69537	13.72477
##	2497	2498	2499	2500	2501	2502	2503	2504
##	13.70454	13.70952	13.70951	13.69706	13.71034	13.71295	13.68645	13.69406
##	2505	2506	2507	2508	2509	2510	2511	2512
##	13.70223	13.71059	13.80379	13.71148	13.73947	13.70495	13.70314	13.73903
##	2513	2514	2515	2516	2517	2518	2519	2520
##	13.63366	13.70426	13.67140	13.68199	13.70083	13.70238	13.69978	13.67510
##	2521	2522	2523	2524	2525	2526	2527	2528
##	13.65023	13.69471	13.69522	13.69082	13.70720	13.69224	13.71056	13.69764
##	2529	2530	2531	2532	2533	2534	2535	2536
##	13.70335	13.69611	13.68685	13.68691	13.67493	13.69328	13.68640	13.69940
##	2537	2538	2539	2540	2541	2542	2543	2544
##	13.69567	13.68340	13.66983	13.69831	13.68068	13.67487	13.68659	13.69132
##	2545	2546	2547	2548	2549	2550	2551	2552
##	13.68473	13.68025	13.71578	13.68055	13.68339	13.69316	13.68175	13.62264
##	2553	2554	2555	2556	2557	2558	2559	2560
##	13.64831	13.70252	13.66647	13.70179	13.67880	13.61939	13.78280	13.73659
##	2561	2562	2563	2564	2565	2566	2567	2568
##	13.67333	13.69884	13.68917	13.67246	13.67952	13.68277	13.69315	13.68741
##	2569	2570	2571	2572	2573	2574	2575	2576
##	13.63181	13.63939	13.67730	13.68821	13.71262	13.67303	13.70623	13.65091
##	2577	2578	2579	2580	2581	2582	2583	2584
##	13.58908	13.67185	13.66221	13.67501	13.66421	13.65989	13.66961	13.68008
##	2585	2586	2587	2588	2589	2590	2591	2592
##	13.67749	13.65043	13.65216	13.66235	13.55942	13.62328	13.65584	13.71641
##	2593	2594	2595	2596	2597	2598	2599	2600
##	13.67136	13.60123	13.64945	13.64452	13.66006	13.65323	13.66587	13.62332
##	2601	2602	2603	2604	2605	2606	2607	2608
##	13.66742	13.61856	13.68486	13.64641	13.64883	13.65268	13.62276	13.67958
##	2609	2610	2611	2612	2613	2614	2615	2616
##	13.66212	13.66435	13.65146	13.62202	13.63382	13.60867	13.64470	13.62242
##	2617	2618	2619	2620	2621	2622	2623	2624
##	13.63830	13.65466	13.63620	13.67257	13.64647	13.65534	13.61703	13.58641
##	2625	2626	2627	2628	2629	2630	2631	2632
##	13.61456	13.58868	13.63055	13.63360	13.65863	13.67449	13.64275	13.62021
##	2633	2634	2635	2636	2637	2638	2639	2640
##	13.65230	13.64686	13.62413	13.61431	13.65119	13.61420	13.61206	13.60919
##	2641	2642	2643	2644	2645	2646	2647	2648
##	13.62446	13.58610	13.62735	13.62550	13.62330	13.63429	13.63520	13.64246
##	2649	2650	2651	2652	2653	2654	2655	2656
##	13.62380	13.61550	13.61530	13.49927	13.60161	13.60976	13.66019	13.57526
##	2657	2658	2659	2660	2661	2662	2663	2664
##	13.57676	13.57593	13.62678	13.62710	13.52757	13.63389	13.59596	13.62199
##	2665	2666	2667	2668	2669	2670	2671	2672
##	13.58758	13.60397	13.63550	13.59380	13.56273	13.58346	13.60281	13.51111
##	2673	2674	2675	2676	2677	2678	2679	2680
##	13.60103	13.60615	13.56453	13.57275	13.52331	13.62550	13.54875	13.58303
##	2681	2682	2683	2684	2685	2686	2687	2688
##	13.60332	13.58080	13.57516	13.56183	13.58914	13.58764	13.54097	13.57932

##	2689	2690	2691	2692	2693	2694	2695	2696
##	13.58011	13.57018	13.59155	13.56916	13.58762	13.52495	13.53506	13.59373
##	2697	2698	2699	2700	2701	2702	2703	2704
##	13.55907	13.56186	13.60091	13.57043	13.60521	13.57117	13.56228	13.55555
##	2705	2706	2707	2708	2709	2710	2711	2712
##	13.59626	13.55709	13.55400	13.52448	13.62601	13.53206	13.59730	13.54504
##	2713	2714	2715	2716	2717	2718	2719	2720
##	13.57818	13.52683	13.55029	13.56875	13.56795	13.55277	13.52401	13.52782
##	2721	2722	2723	2724	2725	2726	2727	2728
##	13.55704	13.53344	13.55436	13.49822	13.53091	13.53540	13.52436	13.51569
##	2729	2730	2731	2732	2733	2734	2735	2736
##	13.44835	13.52788	13.54900	13.55453	13.54798	13.51266	13.46928	13.51366
##	2737	2738	2739	2740	2741	2742	2743	2744
##	13.49560	13.48589	13.55816	13.50954	13.51130	13.54275	13.48317	13.49626
##	2745	2746	2747	2748	2749	2750	2751	2752
##	13.51048	13.57889	13.58598	13.54116	13.53523	13.49554	13.51021	13.57316
##	2753	2754	2755	2756	2757	2758	2759	2760
##	13.53263	13.45925	13.53989	13.52102	13.52093	13.50488	13.55386	13.47457
##	2761	2762	2763	2764	2765	2766	2767	2768
##	13.52804	13.53413	13.51239	13.52502	13.54010	13.53056	13.50870	13.52801
##	2769	2770	2771	2772	2773	2774	2775	2776
##	13.49176	13.49270	13.53126	13.50937	13.45518	13.52932	13.52902	13.52736
##	2777	2778	2779	2780	2781	2782	2783	2784
##	13.53038	13.48568	13.48147	13.50312	13.52567	13.52095	13.45986	13.52509
##	2785	2786	2787	2788	2789	2790	2791	2792
##	13.51691	13.52743	13.45351	13.44060	13.50026	13.50671	13.49239	13.49886
##	2793	2794	2795	2796	2797	2798	2799	2800
##	13.52323	13.49804	13.50045	13.45370	13.45534	13.49571	13.47695	13.50578
##	2801	2802	2803	2804	2805	2806	2807	2808
##	13.43670	13.53797	13.49101	13.48506	13.49876	13.51178	13.47930	13.51761
##	2809	2810	2811	2812	2813	2814	2815	2816
##	13.50417	13.38974	13.50132	13.46964	13.42063	13.45244	13.48574	13.48462
##	2817	2818	2819	2820	2821	2822	2823	2824
##	13.45035	13.53689	13.48171	13.49845	13.44944	13.45535	13.52431	13.48125
##	2825	2826	2827	2828	2829	2830	2831	2832
##	13.50559	13.43094	13.48327	13.44388	13.50732	13.49752	13.45416	13.45494
##	2833	2834	2835	2836	2837	2838	2839	2840
##	13.45696	13.45187	13.46079	13.45007	13.47155	13.46203	13.47535	13.48751
##	2841	2842	2843	2844	2845	2846	2847	2848
##	13.42631	13.40194	13.49562	13.39864	13.43788	13.48136	13.47907	13.45043
##	2849	2850	2851	2852	2853	2854	2855	2856
##	13.43015	13.42275	13.49709	13.52801	13.49908	13.44556	13.37869	13.42257
##	2857	2858	2859	2860	2861	2862	2863	2864
##	13.49362	13.47278	13.38980	13.46717	13.46580	13.45310	13.45075	13.42782
##	2865	2866	2867	2868	2869	2870	2871	2872
##	13.46694	13.40613	13.46341	13.45251	13.38604	13.44240	13.37513	13.45289
##	2873	2874	2875	2876	2877	2878	2879	2880
##	13.48811	13.47187	13.45305	13.45333	13.43110	13.38134	13.43424	13.40729
##	2881	2882	2883	2884	2885	2886	2887	2888
##	13.46606	13.48261	13.46850	13.37588	13.42867	13.43200	13.44755	13.36953
##	2889	2890	2891	2892	2893	2894	2895	2896
##	13.40169	13.39709	13.43247	13.45831	13.43085	13.42236	13.44324	13.42198
##	2897	2898	2899	2900	2901	2902	2903	2904
##	13.41991	13.45716	13.41193	13.41744	13.42096	13.42654	13.45608	13.44024

##	2905	2906	2907	2908	2909	2910	2911	2912
##	13.43270	13.37404	13.40865	13.40946	13.39903	13.40620	13.41766	13.44301
##	2913	2914	2915	2916	2917	2918	2919	2920
##	13.43925	13.44904	13.40088	13.39799	13.31787	13.38051	13.42411	13.41455
##	2921	2922	2923	2924	2925	2926	2927	2928
##	13.46333	13.41325	13.37200	13.38355	13.34748	13.41242	13.37289	13.41923
##	2929	2930	2931	2932	2933	2934	2935	2936
##	13.41976	13.39532	13.31828	13.40513	13.39263	13.43040	13.40858	13.38373
##	2937	2938	2939	2940	2941	2942	2943	2944
##	13.30077	13.38638	13.38473	13.30136	13.33032	13.32096	13.37358	13.30551
##	2945	2946	2947	2948	2949	2950	2951	2952
##	13.38900	13.42059	13.38689	13.39682	13.38416	13.33433	13.38801	13.37806
##	2953	2954	2955	2956	2957	2958	2959	2960
##	13.37850	13.40011	13.25188	13.33641	13.38986	13.32200	13.28920	13.33162
##	2961	2962	2963	2964	2965	2966	2967	2968
##	13.30574	13.36800	13.40605	13.25221	13.36233	13.33636	13.34417	13.26413
##	2969	2970	2971	2972	2973	2974	2975	2976
##	13.33852	13.30478	13.32323	13.35450	13.31099	13.30077	13.26824	13.42231
##	2977	2978	2979	2980	2981	2982	2983	2984
##	13.38370	13.35954	13.35184	13.37206	13.37262	13.38203	13.35249	13.30041
##	2985	2986	2987	2988	2989	2990	2991	2992
##	13.33571	13.36775	13.37391	13.39281	13.29346	13.32169	13.26758	13.29337
##	2993	2994	2995	2996	2997	2998	2999	3000
##	13.34175	13.33687	13.34517	13.33933	13.34215	13.33677	13.33036	13.31469
##	3001	3002	3003	3004	3005	3006	3007	3008
##	13.34923	13.33772	13.38746	13.37130	13.32515	13.32588	13.28978	13.32563
##	3009	3010	3011	3012	3013	3014	3015	3016
##	13.34439	13.33823	13.32787	13.32372	13.26734	13.23240	13.31895	13.29845
##	3017	3018	3019	3020	3021	3022	3023	3024
##	13.32526	13.30356	13.28251	13.30488	13.26927	13.23222	13.35210	13.30014
##	3025	3026	3027	3028	3029	3030	3031	3032
##	13.25586	13.32954	13.32485	13.32454	13.27180	13.47098	13.32357	13.31221
##	3033	3034	3035	3036	3037	3038	3039	3040
##	13.30194	13.31056	13.29708	13.30279	13.31173	13.27786	13.23294	13.28495
##	3041	3042	3043	3044	3045	3046	3047	3048
##	13.27136	13.29293	13.28416	13.30307	13.29951	13.29060	13.30427	13.26974
##	3049	3050	3051	3052	3053	3054	3055	3056
##	13.32336	13.28049	13.32613	13.30523	13.30445	13.26791	13.26965	13.17968
##	3057	3058	3059	3060	3061	3062	3063	3064
##	13.32814	13.23285	13.27908	13.24730	13.29775	13.30131	13.30026	13.31490
##	3065	3066	3067	3068	3069	3070	3071	3072
##	13.27652	13.26185	13.12240	13.25431	13.27217	13.21537	13.27534	13.19414
##	3073	3074	3075	3076	3077	3078	3079	3080
##	13.25057	13.27104	13.22168	13.24180	13.26985	13.23167	13.21749	13.23399
##	3081	3082	3083	3084	3085	3086	3087	3088
##	13.23455	13.26374	13.24036	13.11943	13.20208	13.32304	13.25728	13.18949
##	3089	3090	3091	3092	3093	3094	3095	3096
##	13.28506	13.20017	13.30423	13.25256	13.34649	13.21385	13.18882	13.19859
##	3097	3098	3099	3100	3101	3102	3103	3104
##	13.19672	13.19427	13.16742	13.12211	13.18656	13.19528	13.22325	13.11623
##	3105	3106	3107	3108	3109	3110	3111	3112
##	13.11546	13.19781	13.21809	13.22748	13.22905	13.28309	13.22191	13.21954
##	3113	3114	3115	3116	3117	3118	3119	3120
##	13.22013	13.22621	13.20449	13.20839	13.27097	13.16932	13.24538	13.23495

##	3121	3122	3123	3124	3125	3126	3127	3128
##	13.21311	13.18755	13.09170	13.14544	13.19334	13.20993	13.12393	13.20082
##	3129	3130	3131	3132	3133	3134	3135	3136
##	13.19018	13.20303	13.18974	13.16088	13.21075	13.20273	13.16827	13.13607
##	3137	3138	3139	3140	3141	3142	3143	3144
##	13.17852	13.09919	13.12229	13.14905	13.17135	13.10534	13.17914	13.15323
##	3145	3146	3147	3148	3149	3150	3151	3152
##	13.22341	13.21661	13.05786	13.18796	13.11226	13.18406	13.17352	13.23420
##	3153	3154	3155	3156	3157	3158	3159	3160
##	13.14101	13.14947	13.11756	13.16856	12.99329	13.13555	13.07540	13.15988
##	3161	3162	3163	3164	3165	3166	3167	3168
##	13.11761	13.21695	13.11244	13.11413	13.15165	13.14458	13.12004	13.01021
##	3169	3170	3171	3172	3173	3174	3175	3176
##	13.14082	13.10632	13.12559	13.09772	13.09684	13.01490	13.11805	13.11424
##	3177	3178	3179	3180	3181	3182	3183	3184
##	13.10565	13.07536	13.07361	13.11777	13.11079	13.05141	13.06295	13.11458
##	3185	3186	3187	3188	3189	3190	3191	3192
##	13.18078	13.13190	13.08717	13.08982	13.07833	13.11891	13.05193	13.05557
##	3193	3194	3195	3196	3197	3198	3199	3200
##	13.00203	13.06857	13.08918	13.06792	13.08702	12.98717	13.07141	13.06293
##	3201	3202	3203	3204	3205	3206	3207	3208
##	13.04494	13.04601	13.04948	13.07400	13.07801	13.03961	13.04465	12.99219
##	3209	3210	3211	3212	3213	3214	3215	3216
##	12.96433	12.98998	13.11013	13.04027	13.02428	13.08930	13.03045	13.02635
##	3217	3218	3219	3220	3221	3222	3223	3224
##	13.04354	13.02525	13.09367	13.01120	12.93744	12.95662	13.00564	13.10544
##	3225	3226	3227	3228	3229	3230	3231	3232
##	12.98944	12.96377	12.98080	12.97616	13.03069	13.01125	12.94935	12.93523
##	3233	3234	3235	3236	3237	3238	3239	3240
##	13.01929	13.02038	12.88629	13.05442	12.95252	12.91954	12.90493	12.87059
##	3241	3242	3243	3244	3245	3246	3247	3248
##	12.91641	12.90059	12.91553	12.90868	12.87433	12.89630	12.90027	12.97441
##	3249	3250	3251	3252	3253	3254	3255	3256
##	12.88872	12.88390	12.89623	12.88004	12.87084	12.93607	12.89313	12.89183
##	3257	3258	3259	3260	3261	3262	3263	3264
##	12.87028	12.86450	12.87409	12.85999	12.91957	12.87275	12.84416	12.88254
##	3265	3266	3267	3268	3269	3270	3271	3272
##	12.80338	12.83099	12.79047	12.81649	12.84816	12.81166	12.76022	12.77771
##	3273	3274	3275	3276	3277	3278	3279	3280
##	12.83183	12.81565	12.76911	12.76262	12.80179	12.75350	12.73166	12.76332
##	3281	3282	3283	3284	3285	3286	3287	3288
##	12.75630	12.76125	12.74980	12.75234	12.69074	12.76167	12.72709	12.72733
##	3289	3290	3291	3292	3293	3294	3295	3296
##	12.69959	12.73877	12.67813	12.70706	12.66989	12.68519	12.68451	12.68673
##	3297	3298	3299	3300	3301	3302	3303	3304
##	12.70990	12.70209	12.66329	12.64651	12.65626	12.64950	12.76270	12.65133
##	3305	3306	3307	3308	3309	3310	3311	3312
##	12.64755	12.59375	12.66650	12.55074	12.57110	12.56049	12.56240	12.56720
##	3313	3314	3315	3316	3317	3318	3319	3320
##	12.55516	12.55627	12.59466	12.54931	12.44320	12.40812	12.49244	12.47274
##	3321	3322	3323	3324	3325	3326	3327	3328
##	12.52545	12.53823	12.50538	12.54778	12.52883	12.51891	12.49759	12.50261
##	3329	3330	3331	3332	3333	3334	3335	3336
##	12.50951	12.49931	12.47668	12.44809	12.46190	12.37989	12.39796	12.40981

##	3337	3338	3339	3340	3341	3342	3343	3344
##	12.39391	12.41001	12.36328	12.39343	12.41250	12.37727	12.37009	12.35761
##	3345	3346	3347	3348	3349	3350	3351	3352
##	12.33820	12.31198	12.29515	12.33920	12.26585	12.22191	12.30636	12.28075
##	3353	3354	3355	3356	3357	3358	3359	3360
##	12.23050	12.25584	12.16799	12.15085	11.67238	11.78851	11.68895	11.58970
##	3361	3362	3363	3364	3365	3366	3367	3368
##	11.54964	15.22940	15.23033	15.01606	15.11267	14.90102	14.88005	14.78618
##	3369	3370	3371	3372	3373	3374	3375	3376
##	14.84568	14.68131	14.67802	14.67145	14.61544	14.66708	14.62675	14.60806
##	3377	3378	3379	3380	3381	3382	3383	3384
##	14.42626	14.56686	14.49914	14.43573	14.39444	14.38623	14.46460	14.44755
##	3385	3386	3387	3388	3389	3390	3391	3392
##	14.39781	14.40424	14.41903	14.39351	14.34482	14.30313	14.31625	14.29315
##	3393	3394	3395	3396	3397	3398	3399	3400
##	14.23970	14.31144	14.29600	14.30971	14.34685	14.26281	14.27903	14.24162
##	3401	3402	3403	3404	3405	3406	3407	3408
##	14.27033	14.12529	14.20653	14.10334	14.20198	14.23315	14.18444	14.18703
##	3409	3410	3411	3412	3413	3414	3415	3416
##	14.18362	14.18072	14.18700	14.24902	14.13917	14.12339	14.16828	14.26140
##	3417	3418	3419	3420	3421	3422	3423	3424
##	14.14720	14.15014	14.24844	14.19858	14.14843	14.13617	14.13746	14.11295
##	3425	3426	3427	3428	3429	3430	3431	3432
##	13.99267	14.02710	14.11183	14.05240	14.08897	14.12021	14.09413	14.06820
##	3433	3434	3435	3436	3437	3438	3439	3440
##	14.09548	14.08934	14.08198	14.01025	14.08583	14.11786	14.06638	14.06836
##	3441	3442	3443	3444	3445	3446	3447	3448
##	13.97125	14.17717	13.96183	14.06872	14.07246	14.07200	14.07796	14.08105
##	3449	3450	3451	3452	3453	3454	3455	3456
##	14.05306	14.06744	14.06035	14.06163	14.03492	14.06327	14.05278	14.07339
##	3457	3458	3459	3460	3461	3462	3463	3464
##	14.10253	14.04734	14.06876	14.04996	14.05209	13.99815	13.97285	14.04934
##	3465	3466	3467	3468	3469	3470	3471	3472
##	14.04639	14.04977	14.04657	14.07496	14.03271	13.94971	13.89890	14.07831
##	3473	3474	3475	3476	3477	3478	3479	3480
##	14.06151	14.04242	14.05025	14.04627	14.04547	14.03418	14.01617	14.04494
##	3481	3482	3483	3484	3485	3486	3487	3488
##	13.97698	14.06085	14.03746	13.92101	14.03413	14.03521	14.02720	14.02586
##	3489	3490	3491	3492	3493	3494	3495	3496
##	14.01935	14.03562	14.02203	14.04354	14.01777	14.01733	14.01925	14.01318
##	3497	3498	3499	3500	3501	3502	3503	3504
##	14.05767	13.99918	14.01314	14.01307	14.01231	14.03605	13.99019	14.03571
##	3505	3506	3507	3508	3509	3510	3511	3512
##	14.03068	13.99817	14.04192	13.99739	13.99379	14.00005	14.00459	14.03492
##	3513	3514	3515	3516	3517	3518	3519	3520
##	13.89399	13.99594	13.99776	13.99311	13.97558	13.97539	14.00983	13.90546
##	3521	3522	3523	3524	3525	3526	3527	3528
##	13.96802	13.94893	13.98661	13.97908	13.97682	14.05550	14.00201	14.00039
##	3529	3530	3531	3532	3533	3534	3535	3536
##	13.80714	13.95198	14.06411	13.80277	13.94929	13.96506	13.98226	14.03657
##	3537	3538	3539	3540	3541	3542	3543	3544
##	14.01432	13.94685	13.95030	13.94177	13.94353	13.91062	14.01327	13.92406
##	3545	3546	3547	3548	3549	3550	3551	3552
##	13.94618	13.97606	13.95881	13.93514	14.02734	13.92809	13.94861	13.92489

##	3553	3554	3555	3556	3557	3558	3559	3560
##	13.96210	13.81627	13.90459	13.80708	13.91183	13.87001	13.89945	13.91264
##	3561	3562	3563	3564	3565	3566	3567	3568
##	13.90208	13.88674	13.91212	13.89738	13.91862	13.90626	13.85772	13.90004
##	3569	3570	3571	3572	3573	3574	3575	3576
##	13.90689	13.95785	13.90284	13.90297	13.89883	13.88197	13.88560	13.86275
##	3577	3578	3579	3580	3581	3582	3583	3584
##	13.90424	13.87393	13.90600	13.90079	13.86996	13.88850	13.86055	13.86982
##	3585	3586	3587	3588	3589	3590	3591	3592
##	13.90019	13.86349	13.81910	13.83460	13.86638	13.80742	13.85292	13.85224
##	3593	3594	3595	3596	3597	3598	3599	3600
##	13.90484	13.85491	13.80957	13.78489	13.85911	13.86713	13.81679	13.86629
##	3601	3602	3603	3604	3605	3606	3607	3608
##	13.85895	13.86071	13.84855	13.85872	13.84664	13.84385	13.85435	13.85762
##	3609	3610	3611	3612	3613	3614	3615	3616
##	13.84406	13.85143	13.85552	13.80602	13.85197	13.84495	13.82896	13.84781
##	3617	3618	3619	3620	3621	3622	3623	3624
##	13.80537	13.81369	13.79914	13.86922	13.84362	13.83584	13.83598	13.80499
##	3625	3626	3627	3628	3629	3630	3631	3632
##	13.88403	13.83653	13.95129	13.76328	13.77915	13.83328	13.83537	13.81881
##	3633	3634	3635	3636	3637	3638	3639	3640
##	13.83785	13.79855	13.80156	13.81828	13.80632	13.80382	13.81463	13.81180
##	3641	3642	3643	3644	3645	3646	3647	3648
##	13.85750	13.83945	13.80988	13.81493	13.84889	13.80248	13.79043	13.81547
##	3649	3650	3651	3652	3653	3654	3655	3656
##	13.81445	13.80265	13.80809	13.80136	13.80753	13.90270	13.82240	13.80092
##	3657	3658	3659	3660	3661	3662	3663	3664
##	13.80232	13.80321	13.79136	13.79069	13.80909	13.79707	13.80726	13.79541
##	3665	3666	3667	3668	3669	3670	3671	3672
##	13.79555	13.79026	13.80457	13.81804	13.77552	13.82265	13.77968	13.74188
##	3673	3674	3675	3676	3677	3678	3679	3680
##	13.79211	13.78109	13.76569	13.76560	13.76039	13.77652	13.79830	13.78561
##	3681	3682	3683	3684	3685	3686	3687	3688
##	13.78363	13.78327	13.67502	13.76956	13.75535	13.77751	13.70415	13.71570
##	3689	3690	3691	3692	3693	3694	3695	3696
##	13.76012	13.78791	13.77956	13.77276	13.77922	13.76855	13.74302	13.67183
##	3697	3698	3699	3700	3701	3702	3703	3704
##	13.77198	13.77457	13.75510	13.77289	13.79258	13.73793	13.78694	13.78978
##	3705	3706	3707	3708	3709	3710	3711	3712
##	13.79143	13.68018	13.77426	13.73967	13.73691	13.64589	13.75960	13.76095
##	3713	3714	3715	3716	3717	3718	3719	3720
##	13.76993	13.76423	13.76519	13.75805	13.76963	13.76224	13.76314	13.76549
##	3721	3722	3723	3724	3725	3726	3727	3728
##	13.76643	13.75871	13.77181	13.77138	13.79528	13.74441	13.77054	13.74924
##	3729	3730	3731	3732	3733	3734	3735	3736
##	13.74724	13.75691	13.74349	13.75738	13.74902	13.74396	13.70599	13.76275
##	3737	3738	3739	3740	3741	3742	3743	3744
##	13.74841	13.74673	13.64534	13.76111	13.78201	13.75019	13.72591	13.57229
##	3745	3746	3747	3748	3749	3750	3751	3752
##	13.73672	13.71113	13.73021	13.75107	13.80558	13.74334	13.73168	13.73834
##	3753	3754	3755	3756	3757	3758	3759	3760
##	13.75985	13.69637	13.72566	13.74485	13.74800	13.74414	13.69715	13.73901
##	3761	3762	3763	3764	3765	3766	3767	3768
##	13.73527	13.72678	13.72972	13.70116	13.68360	13.74378	13.74252	13.71288

##	3769	3770	3771	3772	3773	3774	3775	3776
##	13.72204	13.71345	13.55160	13.73483	13.73540	13.69841	13.68182	13.72564
##	3777	3778	3779	3780	3781	3782	3783	3784
##	13.67679	13.64969	13.72971	13.72357	13.73229	13.71980	13.69857	13.67205
##	3785	3786	3787	3788	3789	3790	3791	3792
##	13.73600	13.74314	13.69145	13.73406	13.72868	13.72258	13.74227	13.71635
##	3793	3794	3795	3796	3797	3798	3799	3800
##	13.71266	13.70590	13.70509	13.74629	13.68384	13.67410	13.64736	13.68135
##	3801	3802	3803	3804	3805	3806	3807	3808
##	13.59488	13.67928	13.74249	13.74961	13.73103	13.69876	13.76965	13.70105
##	3809	3810	3811	3812	3813	3814	3815	3816
##	13.70150	13.71927	13.69893	13.58147	13.67884	13.61231	13.71617	13.70258
##	3817	3818	3819	3820	3821	3822	3823	3824
##	13.70229	13.71123	13.61548	13.63710	13.67993	13.70238	13.68093	13.69881
##	3825	3826	3827	3828	3829	3830	3831	3832
##	13.67665	13.70667	13.64611	13.69770	13.68547	13.60702	13.69995	13.69487
##	3833	3834	3835	3836	3837	3838	3839	3840
##	13.69741	13.71996	13.67541	13.72184	13.69455	13.69982	13.67952	13.68513
##	3841	3842	3843	3844	3845	3846	3847	3848
##	13.69296	13.68460	13.68383	13.67731	13.55766	13.70757	13.67938	13.69871
##	3849	3850	3851	3852	3853	3854	3855	3856
##	13.65851	13.63426	13.69748	13.71440	13.62754	13.60710	13.61764	13.68273
##	3857	3858	3859	3860	3861	3862	3863	3864
##	13.67936	13.66814	13.77752	13.56435	13.54009	13.68201	13.61279	13.67332
##	3865	3866	3867	3868	3869	3870	3871	3872
##	13.55826	13.65572	13.62468	13.67670	13.57759	13.69455	13.63685	13.67098
##	3873	3874	3875	3876	3877	3878	3879	3880
##	13.67063	13.66743	13.58900	13.58137	13.61463	13.66129	13.60027	13.68429
##	3881	3882	3883	3884	3885	3886	3887	3888
##	13.61829	13.53480	13.62845	13.55935	13.59583	13.56463	13.63428	13.62240
##	3889	3890	3891	3892	3893	3894	3895	3896
##	13.64559	13.67701	13.68043	13.58697	13.65862	13.63793	13.65640	13.61750
##	3897	3898	3899	3900	3901	3902	3903	3904
##	13.64791	13.64527	13.66048	13.70012	13.67949	13.65112	13.63922	13.57271
##	3905	3906	3907	3908	3909	3910	3911	3912
##	13.56571	13.63218	13.48574	13.70771	13.61685	13.58690	13.64756	13.64333
##	3913	3914	3915	3916	3917	3918	3919	3920
##	13.63488	13.63392	13.59103	13.60737	13.59809	13.65154	13.54038	13.56010
##	3921	3922	3923	3924	3925	3926	3927	3928
##	13.68973	13.58620	13.58593	13.60939	13.59200	13.59108	13.61463	13.62439
##	3929	3930	3931	3932	3933	3934	3935	3936
##	13.60782	13.62356	13.67390	13.66343	13.62276	13.61557	13.62565	13.64517
##	3937	3938	3939	3940	3941	3942	3943	3944
##	13.62856	13.56352	13.62838	13.64129	13.64846	13.53072	13.58332	13.56713
##	3945	3946	3947	3948	3949	3950	3951	3952
##	13.59036	13.58672	13.55070	13.65449	13.65720	13.56389	13.52053	13.56801
##	3953	3954	3955	3956	3957	3958	3959	3960
##	13.50974	13.55892	13.55946	13.58516	13.55640	13.58250	13.63063	13.59663
##	3961	3962	3963	3964	3965	3966	3967	3968
##	13.62573	13.62966	13.52960	13.61612	13.59651	13.55955	13.59999	13.62865
##	3969	3970	3971	3972	3973	3974	3975	3976
##	13.50921	13.52083	13.45736	13.55649	13.62886	13.54090	13.58856	13.56496
##	3977	3978	3979	3980	3981	3982	3983	3984
##	13.59393	13.57083	13.58630	13.55682	13.61267	13.62586	13.61344	13.58962

##	3985	3986	3987	3988	3989	3990	3991	3992
##	13.56414	13.51323	13.54509	13.60105	13.57634	13.61690	13.67632	13.58953
##	3993	3994	3995	3996	3997	3998	3999	4000
##	13.54586	13.59248	13.58537	13.54756	13.60376	13.57880	13.59065	13.55288
##	4001	4002	4003	4004	4005	4006	4007	4008
##	13.52790	13.53687	13.49256	13.61407	13.59071	13.59651	13.49149	13.57782
##	4009	4010	4011	4012	4013	4014	4015	4016
##	13.57054	13.57400	13.62602	13.48943	13.54683	13.58779	13.52084	13.49044
##	4017	4018	4019	4020	4021	4022	4023	4024
##	13.60923	13.54550	13.57272	13.51840	13.61536	13.50296	13.53110	13.43543
##	4025	4026	4027	4028	4029	4030	4031	4032
##	13.57957	13.59038	13.46671	13.60494	13.50700	13.45357	13.57836	13.54702
##	4033	4034	4035	4036	4037	4038	4039	4040
##	13.54677	13.53167	13.45432	13.54384	13.55616	13.56700	13.52778	13.55289
##	4041	4042	4043	4044	4045	4046	4047	4048
##	13.56320	13.56147	13.49025	13.55040	13.52814	13.54344	13.49816	13.54888
##	4049	4050	4051	4052	4053	4054	4055	4056
##	13.51130	13.55789	13.54641	13.45885	13.49354	13.44957	13.54180	13.51700
##	4057	4058	4059	4060	4061	4062	4063	4064
##	13.43427	13.45617	13.58025	13.45476	13.45339	13.47168	13.45514	13.56298
##	4065	4066	4067	4068	4069	4070	4071	4072
##	13.53052	13.34080	13.56731	13.45626	13.54498	13.52341	13.52474	13.44493
##	4073	4074	4075	4076	4077	4078	4079	4080
##	13.46127	13.45810	13.52588	13.42340	13.52474	13.48146	13.54903	13.49720
##	4081	4082	4083	4084	4085	4086	4087	4088
##	13.50699	13.50025	13.43100	13.50344	13.50563	13.45733	13.50703	13.45031
##	4089	4090	4091	4092	4093	4094	4095	4096
##	13.41491	13.45144	13.42359	13.38286	13.49156	13.46069	13.49708	13.48910
##	4097	4098	4099	4100	4101	4102	4103	4104
##	13.31236	13.44531	13.42893	13.45756	13.45840	13.45379	13.50998	13.48555
##	4105	4106	4107	4108	4109	4110	4111	4112
##	13.48585	13.42162	13.42986	13.53628	13.49264	13.49854	13.49580	13.51212
##	4113	4114	4115	4116	4117	4118	4119	4120
##	13.49867	13.43581	13.44618	13.48308	13.45245	13.53313	13.49568	13.40897
##	4121	4122	4123	4124	4125	4126	4127	4128
##	13.46009	13.45986	13.53886	13.42824	13.45387	13.39740	13.35364	13.45050
##	4129	4130	4131	4132	4133	4134	4135	4136
##	13.42432	13.47916	13.60563	13.46922	13.42105	13.52955	13.46409	13.42454
##	4137	4138	4139	4140	4141	4142	4143	4144
##	13.43729	13.34236	13.41810	13.41135	13.52630	13.42312	13.38883	13.45319
##	4145	4146	4147	4148	4149	4150	4151	4152
##	13.47943	13.43103	13.44960	13.45396	13.44703	13.45294	13.42138	13.38342
##	4153	4154	4155	4156	4157	4158	4159	4160
##	13.46240	13.46221	13.42656	13.34808	13.45720	13.45508	13.29859	13.41770
##	4161	4162	4163	4164	4165	4166	4167	4168
##	13.43603	13.38618	13.41217	13.34339	13.44045	13.41263	13.47185	13.41340
##	4169	4170	4171	4172	4173	4174	4175	4176
##	13.42659	13.43249	13.41747	13.38718	13.45232	13.42928	13.42142	13.42062
##	4177	4178	4179	4180	4181	4182	4183	4184
##	13.41804	13.42029	13.44976	13.41971	13.39112	13.30724	13.45334	13.38408
##	4185	4186	4187	4188	4189	4190	4191	4192
##	13.41908	13.42708	13.45312	13.36688	13.41006	13.38452	13.34131	13.40500
##	4193	4194	4195	4196	4197	4198	4199	4200
##	13.38506	13.38323	13.40032	13.41424	13.45622	13.40688	13.43512	13.37992

##	4201	4202	4203	4204	4205	4206	4207	4208
##	13.40907	13.30174	13.28305	13.34637	13.38622	13.36896	13.38858	13.40157
##	4209	4210	4211	4212	4213	4214	4215	4216
##	13.38372	13.33680	13.29843	13.39526	13.19480	13.40814	13.41129	13.40456
##	4217	4218	4219	4220	4221	4222	4223	4224
##	13.38571	13.37565	13.28946	13.38954	13.29603	13.39760	13.24385	13.40874
##	4225	4226	4227	4228	4229	4230	4231	4232
##	13.40493	13.38521	13.37687	13.39168	13.29705	13.31614	13.33792	13.38863
##	4233	4234	4235	4236	4237	4238	4239	4240
##	13.39132	13.37186	13.37459	13.35967	13.28564	13.35307	13.27744	13.40562
##	4241	4242	4243	4244	4245	4246	4247	4248
##	13.37801	13.29952	13.28792	13.33460	13.29353	13.34515	13.34632	13.33765
##	4249	4250	4251	4252	4253	4254	4255	4256
##	13.26622	13.28554	13.26932	13.34095	13.33746	13.33007	13.34352	13.38730
##	4257	4258	4259	4260	4261	4262	4263	4264
##	13.29270	13.33198	13.28142	13.30187	13.31497	13.30123	13.26776	13.16123
##	4265	4266	4267	4268	4269	4270	4271	4272
##	13.34466	13.27450	13.30286	13.30349	13.30492	13.26902	13.30726	13.37579
##	4273	4274	4275	4276	4277	4278	4279	4280
##	13.27809	13.33097	13.30443	13.31665	13.28864	13.28530	13.28249	13.11956
##	4281	4282	4283	4284	4285	4286	4287	4288
##	13.23057	13.29319	13.26642	13.32615	13.29722	13.21728	13.27532	13.28981
##	4289	4290	4291	4292	4293	4294	4295	4296
##	13.27481	13.27669	13.28609	13.22290	13.16047	13.27036	13.22466	13.27108
##	4297	4298	4299	4300	4301	4302	4303	4304
##	13.26688	13.21244	13.30869	13.28212	13.26099	13.23879	13.28207	13.23133
##	4305	4306	4307	4308	4309	4310	4311	4312
##	13.22968	13.28579	13.25012	13.20764	13.24087	13.23065	13.23650	13.01193
##	4313	4314	4315	4316	4317	4318	4319	4320
##	13.22385	13.17664	13.11916	13.23647	13.23415	13.12281	13.21400	13.08747
##	4321	4322	4323	4324	4325	4326	4327	4328
##	13.15922	13.10735	13.12711	13.23424	13.08751	13.19566	13.19872	13.22981
##	4329	4330	4331	4332	4333	4334	4335	4336
##	13.18330	13.21122	13.17894	13.12677	13.11611	13.17236	13.20134	13.20194
##	4337	4338	4339	4340	4341	4342	4343	4344
##	13.13665	13.10805	13.19740	13.23085	13.17133	13.21108	13.11777	13.16095
##	4345	4346	4347	4348	4349	4350	4351	4352
##	13.16869	13.09250	13.01178	13.12167	13.11025	13.15126	13.17024	13.18555
##	4353	4354	4355	4356	4357	4358	4359	4360
##	13.11286	13.15954	13.17097	13.01061	13.12173	13.11267	12.95502	13.05225
##	4361	4362	4363	4364	4365	4366	4367	4368
##	13.10781	13.14509	13.03143	13.12786	13.11274	12.95734	13.04773	13.15121
##	4369	4370	4371	4372	4373	4374	4375	4376
##	13.08059	13.11440	13.11030	13.07797	13.12454	13.10525	12.97526	13.06292
##	4377	4378	4379	4380	4381	4382	4383	4384
##	13.10477	13.11769	13.07149	13.08099	13.09422	13.08902	13.09780	13.01212
##	4385	4386	4387	4388	4389	4390	4391	4392
##	13.11938	13.07605	13.07050	13.03738	13.07033	13.12337	13.09008	13.08816
##	4393	4394	4395	4396	4397	4398	4399	4400
##	13.05890	12.99055	13.03192	13.04414	13.03669	13.02419	13.08364	13.06399
##	4401	4402	4403	4404	4405	4406	4407	4408
##	13.06293	13.03737	13.09100	13.07223	12.98994	13.04321	12.96612	12.97638
##	4409	4410	4411	4412	4413	4414	4415	4416
##	12.96318	13.02479	13.02111	13.01540	13.00252	12.86233	12.96536	12.92725

##	4417	4418	4419	4420	4421	4422	4423	4424
##	12.96410	12.87257	12.98542	13.03189	12.99772	12.98580	12.98690	13.04417
##	4425	4426	4427	4428	4429	4430	4431	4432
##	12.95440	12.93856	13.05755	13.01595	12.95706	12.85993	12.94521	12.89969
##	4433	4434	4435	4436	4437	4438	4439	4440
##	12.92495	12.88085	12.80207	12.91187	12.96498	12.78850	12.89126	12.84122
##	4441	4442	4443	4444	4445	4446	4447	4448
##	12.97971	12.82951	12.79148	12.86174	12.81144	12.84184	12.80811	12.76457
##	4449	4450	4451	4452	4453	4454	4455	4456
##	12.80215	12.79628	12.72429	12.58013	12.74260	12.61830	12.71599	12.73787
##	4457	4458	4459	4460	4461	4462	4463	4464
##	12.70732	12.66902	12.71054	12.66833	12.67618	12.71212	12.68040	12.51035
##	4465	4466	4467	4468	4469	4470	4471	4472
##	12.68118	12.66677	12.70198	12.67063	12.70753	12.65952	12.66242	12.58116
##	4473	4474	4475	4476	4477	4478	4479	4480
##	12.55388	12.57614	12.58311	12.58640	12.59417	12.52263	12.49265	12.39806
##	4481	4482	4483	4484	4485	4486	4487	4488
##	12.50897	12.50536	12.38279	12.50538	12.53781	12.37358	12.49015	12.46029
##	4489	4490	4491	4492	4493	4494	4495	4496
##	12.42383	12.37983	12.35494	12.39397	12.39376	12.40989	12.34397	12.33161
##	4497	4498	4499	4500	4501	4502	4503	4504
##	12.32147	12.32536	12.29135	12.32553	12.30108	12.31963	12.18972	12.20204
##	4505	4506	4507	4508	4509	4510	4511	4512
##	12.20318	12.17280	12.20148	12.15539	12.13226	12.13841	12.65297	11.70659
##	4513	4514	4515	4516	4517	4518	4519	4520
##	14.92355	15.13839	14.97504	14.77483	14.86726	14.56857	14.56033	14.43470
##	4521	4522	4523	4524	4525	4526	4527	4528
##	14.47454	14.44631	14.29896	14.33752	14.38155	14.31685	14.38191	14.35641
##	4529	4530	4531	4532	4533	4534	4535	4536
##	14.07118	14.30862	14.30141	14.26539	14.17179	14.23483	14.26049	14.21147
##	4537	4538	4539	4540	4541	4542	4543	4544
##	14.23694	14.09154	14.18454	14.19158	14.19931	14.20157	14.16513	14.18266
##	4545	4546	4547	4548	4549	4550	4551	4552
##	14.14895	14.14113	14.13175	14.14005	14.12296	14.10374	14.06255	14.18290
##	4553	4554	4555	4556	4557	4558	4559	4560
##	13.97868	14.10733	14.07885	14.06388	14.09682	14.11196	14.11884	14.09720
##	4561	4562	4563	4564	4565	4566	4567	4568
##	14.03762	14.09456	14.09192	14.05147	13.94979	14.11963	13.93916	14.05846
##	4569	4570	4571	4572	4573	4574	4575	4576
##	14.06152	14.05608	14.06611	14.06809	14.06649	14.04053	14.04960	14.05486
##	4577	4578	4579	4580	4581	4582	4583	4584
##	14.05568	14.05513	14.05218	14.03393	13.79260	14.04744	14.05267	13.94323
##	4585	4586	4587	4588	4589	4590	4591	4592
##	13.91511	13.99583	14.05065	13.95985	14.04945	14.03066	14.00196	14.03974
##	4593	4594	4595	4596	4597	4598	4599	4600
##	14.03328	13.98055	14.01219	14.01527	14.00388	13.97867	14.04758	13.99966
##	4601	4602	4603	4604	4605	4606	4607	4608
##	13.99177	13.88112	13.99293	13.99721	13.95231	13.99685	13.99730	13.76064
##	4609	4610	4611	4612	4613	4614	4615	4616
##	13.97643	14.00940	14.07351	13.94430	13.96530	13.97111	13.81142	13.86311
##	4617	4618	4619	4620	4621	4622	4623	4624
##	13.88977	13.95568	13.85463	13.96695	13.91831	13.95864	13.95057	13.98187
##	4625	4626	4627	4628	4629	4630	4631	4632
##	13.73497	13.94002	13.90713	13.94346	13.94255	13.88448	13.67791	13.91193

##	4633	4634	4635	4636	4637	4638	4639	4640
##	13.80027	13.88694	13.91247	13.88473	13.89909	13.81244	13.92926	13.90468
##	4641	4642	4643	4644	4645	4646	4647	4648
##	13.91893	13.90486	13.92520	13.90543	13.92784	13.80268	13.80527	13.77173
##	4649	4650	4651	4652	4653	4654	4655	4656
##	13.69219	13.85983	13.90187	13.91771	13.76846	13.87465	13.75918	13.80630
##	4657	4658	4659	4660	4661	4662	4663	4664
##	13.89824	13.85110	13.91093	13.79654	13.75426	13.82886	13.85248	13.84879
##	4665	4666	4667	4668	4669	4670	4671	4672
##	13.84478	13.76113	13.73724	13.86133	13.85291	13.84544	13.83978	13.82825
##	4673	4674	4675	4676	4677	4678	4679	4680
##	13.85607	13.67764	13.80959	13.75965	13.70829	13.79091	13.82089	13.81755
##	4681	4682	4683	4684	4685	4686	4687	4688
##	13.84678	13.84603	13.77427	13.75520	13.75737	13.75042	13.67743	13.80821
##	4689	4690	4691	4692	4693	4694	4695	4696
##	13.80993	13.79234	13.76847	13.77699	13.85141	13.75192	13.70788	13.77946
##	4697	4698	4699	4700	4701	4702	4703	4704
##	13.79292	13.79296	13.78476	13.77033	13.72281	13.86042	13.78704	13.68810
##	4705	4706	4707	4708	4709	4710	4711	4712
##	13.79383	13.76596	13.77782	13.75454	13.78122	13.66893	13.76493	13.77703
##	4713	4714	4715	4716	4717	4718	4719	4720
##	13.69418	13.62633	13.69086	13.62971	13.82337	13.68581	13.76572	13.76460
##	4721	4722	4723	4724	4725	4726	4727	4728
##	13.65331	13.73394	13.68585	13.70892	13.70288	13.74519	13.67579	13.76202
##	4729	4730	4731	4732	4733	4734	4735	4736
##	13.67308	13.74177	13.75717	13.76288	13.74729	13.67917	13.72197	13.73862
##	4737	4738	4739	4740	4741	4742	4743	4744
##	13.73694	13.73156	13.74455	13.72665	13.74218	13.73622	13.71318	13.74691
##	4745	4746	4747	4748	4749	4750	4751	4752
##	13.69716	13.79637	13.68600	13.74863	13.67553	13.56866	13.68527	13.72125
##	4753	4754	4755	4756	4757	4758	4759	4760
##	13.73914	13.59836	13.73115	13.62551	13.62877	13.68979	13.73525	13.69381
##	4761	4762	4763	4764	4765	4766	4767	4768
##	13.69853	13.73736	13.58027	13.57507	13.69992	13.74512	13.67960	13.71192
##	4769	4770	4771	4772	4773	4774	4775	4776
##	13.65178	13.61916	13.64129	13.68012	13.62541	13.57710	13.70805	13.64885
##	4777	4778	4779	4780	4781	4782	4783	4784
##	13.67647	13.64024	13.68760	13.71198	13.67658	13.70563	13.71543	13.62344
##	4785	4786	4787	4788	4789	4790	4791	4792
##	13.64877	13.72868	13.68810	13.67842	13.58603	13.58316	13.64532	13.66137
##	4793	4794	4795	4796	4797	4798	4799	4800
##	13.60078	13.62648	13.69107	13.69157	13.58891	13.55854	13.67034	13.67544
##	4801	4802	4803	4804	4805	4806	4807	4808
##	13.49858	13.67072	13.60909	13.54909	13.59381	13.59703	13.63671	13.61698
##	4809	4810	4811	4812	4813	4814	4815	4816
##	13.55772	13.62268	13.61785	13.62399	13.63777	13.62124	13.50869	13.56865
##	4817	4818	4819	4820	4821	4822	4823	4824
##	13.54494	13.57590	13.55334	13.46253	13.57973	13.62234	13.68181	13.49994
##	4825	4826	4827	4828	4829	4830	4831	4832
##	13.64993	13.58439	13.48739	13.55336	13.62707	13.55519	13.61142	13.62509
##	4833	4834	4835	4836	4837	4838	4839	4840
##	13.54845	13.52540	13.49162	13.56580	13.45872	13.61618	13.67478	13.49842
##	4841	4842	4843	4844	4845	4846	4847	4848
##	13.49832	13.45744	13.67944	13.59401	13.52381	13.62605	13.46194	13.55455

```
##      4849      4850      4851      4852      4853      4854      4855      4856
## 13.58594 13.58194 13.58828 13.52987 13.56768 13.59030 13.55648 13.56423
##      4857      4858      4859      4860      4861      4862      4863      4864
## 13.56661 13.58556 13.46751 13.55053 13.55990 13.44213 13.45770 13.51491
##      4865      4866      4867      4868      4869      4870      4871      4872
## 13.50872 13.53614 13.52812 13.45703 13.54768 13.45595 13.53274 13.49411
##      4873      4874      4875      4876      4877      4878      4879      4880
## 13.52307 13.49965 13.44684 13.48280 13.49445 13.46490 13.43399 13.51205
##      4881      4882      4883      4884      4885      4886      4887      4888
## 13.39784 13.46245 13.30573 13.51449 13.38933 13.50723 13.45826 13.50162
##      4889      4890      4891      4892      4893      4894      4895      4896
## 13.42328 13.50319 13.44555 13.43243 13.35070 13.41819 13.37551 13.37613
##      4897      4898      4899      4900      4901      4902      4903      4904
## 13.47899 13.50092 13.50035 13.29180 13.40933 13.52607 13.35526 13.43706
##      4905      4906      4907      4908      4909      4910      4911      4912
## 13.50693 13.46037 13.37617 13.46063 13.44677 13.50021 13.36018 13.29417
##      4913      4914      4915      4916      4917      4918      4919      4920
## 13.45856 13.44995 13.41632 13.34344 13.44180 13.39252 13.29011 13.35094
##      4921      4922      4923      4924      4925      4926      4927      4928
## 13.38071 13.43843 13.30397 13.36628 13.28915 13.27564 13.24682 13.35243
##      4929      4930
## 13.34956 13.31610
```

```
#train metrics
```

```
eval_results(tr$List.Price, exp(pred2), tr)
```

```
##      RMSE      Rsquare
```

```
## 1 29300.02 0.9935753
```

```
###test values prediction
```

```
#was getting error here, so found a solution for that error
```

```
ms <- rbind(tr[1, ], ms)
```

```
ms <- ms[-1,]
```

```
#prediction
```

```
pred3 = predict(rf_model,ms)
```

```
exp(pred3)
```

```
##      1      2      3      4      5      6      7      8
## 570960.1 566934.4 578401.4 566248.1 568054.2 580715.0 620134.0 618051.5
##      9     10     11     12     13     14     15     16
## 614253.2 616815.8 614742.9 543593.1 550911.9 652902.3 607427.6 568033.5
##     17     18     19     20     21     22     23     24
## 545100.0 604023.1 591772.7 499330.7 537062.5 533490.2 556878.9 601698.8
##     25     26     27     28     29     30     31     32
## 478966.5 551880.5 547972.1 510092.0 502118.0 503938.2 483071.6 503768.0
##     33     34     35     36     37     38     39     40
## 500006.6 486995.1 479577.8 513235.7 496821.9 479737.8 525152.4 485545.6
##     41     42     43     44     45     46     47     48
## 483267.4 473035.0 452983.4 418715.5 403499.5 467981.0 470195.6 484355.7
##     49     50     51     52     53     54     55     56
## 448521.2 467353.4 429468.6 465139.5 446992.3 408979.2 389412.2 443187.7
```

```
##      57      58      59      60      61      62      63      64
## 356170.8 431461.6 377957.2 379579.8 401463.3 406179.9 421659.9 361385.5
##      65      66      67      68      69      70      71      72
## 357211.4 382528.0 383627.8 365697.3 405583.6 370347.5 365176.2 372385.6
##      73      74      75      76      77      78      79      80
## 377417.8 335595.4 351973.6 321958.0 364804.2 335771.6 299668.5 301353.1
##      81      82      83      84      85      86      87      88
## 304787.5 305114.1 338984.1 338054.5 284808.3 309744.3 283164.3 297965.9
##      89      90      91      92      93      94      95      96
## 279356.5 269058.4 279428.0 260356.5 238477.2 248355.3 238963.4 245699.8
##      97      98      99     100
## 241525.9 246554.6 241027.7 206748.4
```

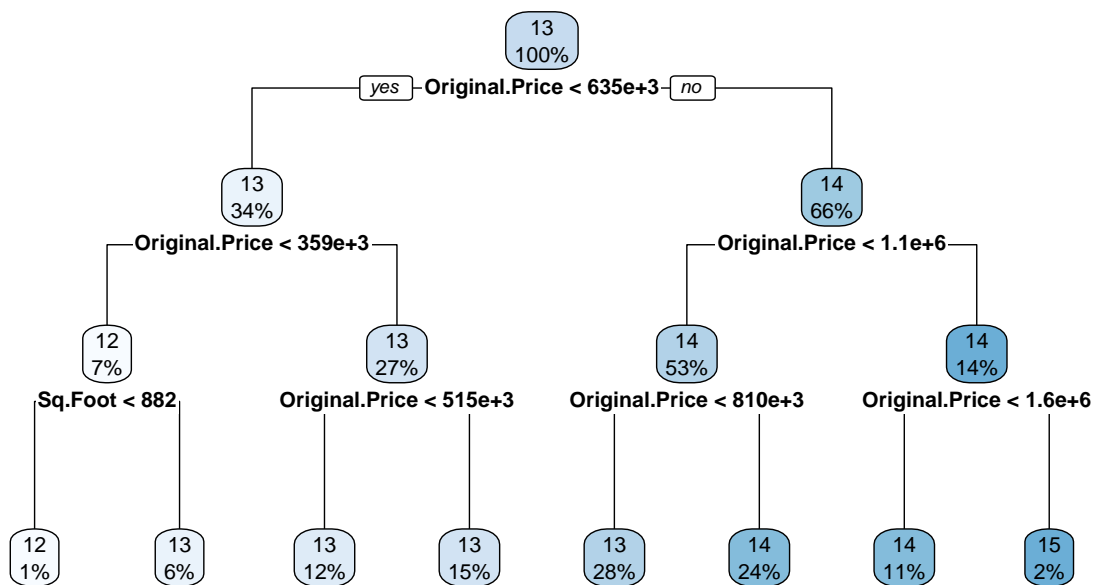
```
#test metrics for rf
eval_results(ms$List.Price, exp(pred3), ms)
```

```
##      RMSE   Rsquare
## 1 14312.61 0.9850591
```

```
###decision tree ###
library(rpart)
library(rpart.plot)
```

```
## Warning: package 'rpart.plot' was built under R version 4.1.3
```

```
#decision tree
fitto <- rpart(log(List.Price)~., data=tr)
rpart.plot(fitto)
```

```
summary(fitto)
```

```
## Call:
## rpart(formula = log(List.Price) ~ ., data = tr)
##   n= 4930
##
##           CP nsplit  rel error    xerror    xstd
## 1 0.54432256      0 1.00000000 1.00101119 0.030192752
## 2 0.15258714      1 0.45567744 0.45753361 0.016879534
## 3 0.12813786      2 0.30309030 0.30205021 0.013846056
## 4 0.03485823      3 0.17495245 0.17787664 0.008615523
## 5 0.02886946      4 0.14009422 0.13839220 0.008610070
## 6 0.02143740      5 0.11122476 0.11274192 0.007579343
## 7 0.02100700      6 0.08978736 0.10094837 0.006846365
## 8 0.01000000      7 0.06878035 0.07457356 0.005706426
##
## Variable importance
## Original.Price      Sq.Foot  Taxes.Annual    Bedrooms    Bathrooms
##           34           20           14           12           10
##      Garage  Property.Type
##           8             1
##
## Node number 1: 4930 observations,    complexity param=0.5443226
##   mean=13.46138, MSE=0.2004497
##   left son=2 (1670 obs) right son=3 (3260 obs)
```

```

## Primary splits:
##   Original.Price < 634925   to the left,  improve=0.5443226, (0 missing)
##   Sq.Foot         < 2385    to the left,  improve=0.4394602, (0 missing)
##   Property.Type   splits as LRR, improve=0.3532758, (0 missing)
##   Garage          splits as LRRRRRRRRRRRRRRLLLLRRRLRRRRLLLLRLL, improve=0.3502459, (0 miss
##   Bedrooms       splits as LLLRRRRL, improve=0.3062413, (0 missing)
## Surrogate splits:
##   Sq.Foot         < 2385    to the left,  agree=0.881, adj=0.650, (0 split)
##   Bedrooms       splits as LLLRRRRR, agree=0.799, adj=0.407, (0 split)
##   Bathrooms      < 2.375    to the left,  agree=0.787, adj=0.371, (0 split)
##   Taxes.Anual    < 5737.5   to the left,  agree=0.780, adj=0.349, (0 split)
##   Garage         splits as LRRRRRRRRLRLRRRLLLLLRLRRRLLLLRLLLLL, agree=0.758, adj=0.287, (0 sp
##
## Node number 2: 1670 observations,    complexity param=0.1281379
##   mean=12.99987, MSE=0.1227512
##   left son=4 (342 obs) right son=5 (1328 obs)
## Primary splits:
##   Original.Price < 359450   to the left,  improve=0.6177145, (0 missing)
##   Sq.Foot        < 1405.5   to the left,  improve=0.5318930, (0 missing)
##   Taxes.Anual    < 3570.5   to the left,  improve=0.4677640, (0 missing)
##   Property.Type  splits as L-R,            improve=0.4217771, (0 missing)
##   Bedrooms       splits as LLLRRRR--,      improve=0.4206013, (0 missing)
## Surrogate splits:
##   Sq.Foot        < 1386.5   to the left,  agree=0.914, adj=0.582, (0 split)
##   Taxes.Anual    < 3266.5   to the left,  agree=0.904, adj=0.532, (0 split)
##   Bedrooms       splits as LLLRRRR--,      agree=0.884, adj=0.436, (0 split)
##   Garage         splits as LR--RR---RRR---RLLLLLRRRRRR--RLLLLRRLLL, agree=0.861, adj=0.322, (0
##   Property.Type  splits as L-R, agree=0.859, adj=0.313, (0 split)
##
## Node number 3: 3260 observations,    complexity param=0.1525871
##   mean=13.6978, MSE=0.07524965
##   left son=6 (2589 obs) right son=7 (671 obs)
## Primary splits:
##   Original.Price < 1050995   to the left,  improve=0.61467890, (0 missing)
##   Taxes.Anual    < 11040.5   to the left,  improve=0.37648690, (0 missing)
##   Sq.Foot        < 3901      to the left,  improve=0.34546740, (0 missing)
##   Bathrooms      < 3.875     to the left,  improve=0.22995970, (0 missing)
##   Bedrooms       splits as RLRLRRRL,      improve=0.09147183, (0 missing)
## Surrogate splits:
##   Sq.Foot        < 4144      to the left,  agree=0.878, adj=0.405, (0 split)
##   Taxes.Anual    < 10038.5   to the left,  agree=0.869, adj=0.364, (0 split)
##   Bathrooms      < 3.875     to the left,  agree=0.847, adj=0.255, (0 split)
##   Roof           splits as R-LRLLLLL-RLL-RRLRR-L-LLRLLRL, agree=0.804, adj=0.049, (0 split)
##   Community      splits as LLLLLLLL-LRLL-LLLL-LLLL, agree=0.804, adj=0.049, (0 split)
##
## Node number 4: 342 observations,    complexity param=0.021007
##   mean=12.45726, MSE=0.1376089
##   left son=8 (65 obs) right son=9 (277 obs)
## Primary splits:
##   Sq.Foot        < 882       to the left,  improve=0.4411070, (0 missing)
##   Bedrooms       splits as LLRRRR---, improve=0.4384072, (0 missing)
##   Garage         splits as RR-----R-----RRLLRR---RR-RRRRRR-LRLL, improve=0.4222435, (0 miss
##   Original.Price < 239392.5 to the left,  improve=0.3250613, (0 missing)
##   Bathrooms      < 1.25      to the left,  improve=0.3017365, (0 missing)

```

```

## Surrogate splits:
## Bedrooms splits as LLRRRR---, agree=0.985, adj=0.923, (0 split)
## Garage splits as RR-----R-----RRLLLLR---RR-RRRRRR-LRLL, agree=0.924, adj=0.600, (0 split)
## Bathrooms < 1.25 to the left, agree=0.906, adj=0.508, (0 split)
## Taxes.Annual < 1588 to the left, agree=0.898, adj=0.462, (0 split)
## Original.Price < 217000 to the left, agree=0.883, adj=0.385, (0 split)
##
## Node number 5: 1328 observations, complexity param=0.0214374
## mean=13.13961, MSE=0.02357242
## left son=10 (611 obs) right son=11 (717 obs)
## Primary splits:
## Original.Price < 515229.5 to the left, improve=0.6767409, (0 missing)
## Taxes.Annual < 4635.5 to the left, improve=0.3962640, (0 missing)
## Sq.Foot < 1967.5 to the left, improve=0.2569013, (0 missing)
## Bedrooms splits as LLLLLRRR--, improve=0.1344971, (0 missing)
## Garage splits as -L--RR---RLL---L---L--RRLRRR-RLL-LLL-R--, improve=0.1299031, (0 missing)
## Surrogate splits:
## Taxes.Annual < 4832.5 to the left, agree=0.803, adj=0.571, (0 split)
## Sq.Foot < 1967.5 to the left, agree=0.748, adj=0.453, (0 split)
## Bedrooms splits as LLLLLRRR--, agree=0.664, adj=0.270, (0 split)
## Garage splits as -L--LR---RLL---L---L--RRLRRR-RLL-LLL-R--, agree=0.636, adj=0.209, (0 split)
## Bathrooms < 2.375 to the left, agree=0.633, adj=0.203, (0 split)
##
## Node number 6: 2589 observations, complexity param=0.03485823
## mean=13.58831, MSE=0.01870611
## left son=12 (1384 obs) right son=13 (1205 obs)
## Primary splits:
## Original.Price < 809992.5 to the left, improve=0.7112826, (0 missing)
## Sq.Foot < 3223 to the left, improve=0.2521956, (0 missing)
## Taxes.Annual < 7939 to the left, improve=0.2370125, (0 missing)
## Year.Built < 2013.5 to the left, improve=0.1501808, (0 missing)
## Bathrooms < 3.125 to the left, improve=0.1327820, (0 missing)
## Surrogate splits:
## Sq.Foot < 3309.5 to the left, agree=0.739, adj=0.438, (0 split)
## Taxes.Annual < 7924 to the left, agree=0.713, adj=0.383, (0 split)
## Bathrooms < 2.875 to the left, agree=0.670, adj=0.291, (0 split)
## Year.Built < 2005.5 to the left, agree=0.656, adj=0.261, (0 split)
## Bedrooms splits as LLLLLRRRR, agree=0.622, adj=0.188, (0 split)
##
## Node number 7: 671 observations, complexity param=0.02886946
## mean=14.12026, MSE=0.06869522
## left son=14 (556 obs) right son=15 (115 obs)
## Primary splits:
## Original.Price < 1637500 to the left, improve=0.6189307, (0 missing)
## Taxes.Annual < 13993 to the left, improve=0.5059421, (0 missing)
## Sq.Foot < 5329 to the left, improve=0.1760057, (0 missing)
## Community splits as -LLR-LLL-L-RLL--LLL-LLLL, improve=0.1701549, (0 missing)
## Bathrooms < 4.625 to the left, improve=0.1383226, (0 missing)
## Surrogate splits:
## Taxes.Annual < 13993 to the left, agree=0.923, adj=0.548, (0 split)
## Sq.Foot < 5712 to the left, agree=0.851, adj=0.130, (0 split)
## Community splits as -LLL-LLL-L-RLL--LLL-LLLL, agree=0.846, adj=0.104, (0 split)
## Bathrooms < 5.625 to the left, agree=0.841, adj=0.070, (0 split)
## Parking.Covered.Total < 5.5 to the left, agree=0.841, adj=0.070, (0 split)

```

```
##
## Node number 8: 65 observations
##   mean=11.94866, MSE=0.1424323
##
## Node number 9: 277 observations
##   mean=12.57661, MSE=0.06153307
##
## Node number 10: 611 observations
##   mean=13.00279, MSE=0.0107327
##
## Node number 11: 717 observations
##   mean=13.25621, MSE=0.004967475
##
## Node number 12: 1384 observations
##   mean=13.48068, MSE=0.005534088
##
## Node number 13: 1205 observations
##   mean=13.71193, MSE=0.005247668
##
## Node number 14: 556 observations
##   mean=14.02648, MSE=0.01206767
##
## Node number 15: 115 observations
##   mean=14.57365, MSE=0.09439627
```

```
#prediction on train data
```

```
modelv<- predict(fitto,tr)
exp(modelv)
```

```
##      1      2      3      4      5      6      7      8
## 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1
##      9     10     11     12     13     14     15     16
## 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1
##     17     18     19     20     21     22     23     24
## 2134300.1 2134300.1 2134300.1 2134300.1 2134300.1 1234876.6 2134300.1 1234876.6
##     25     26     27     28     29     30     31     32
## 2134300.1 2134300.1 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     33     34     35     36     37     38     39     40
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     41     42     43     44     45     46     47     48
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     49     50     51     52     53     54     55     56
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     57     58     59     60     61     62     63     64
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     65     66     67     68     69     70     71     72
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6
##     73     74     75     76     77     78     79     80
## 901606.2 1234876.6 1234876.6 901606.2 1234876.6 2134300.1 901606.2 1234876.6
##     81     82     83     84     85     86     87     88
## 1234876.6 1234876.6 1234876.6 1234876.6 1234876.6 901606.2 901606.2 901606.2
##     89     90     91     92     93     94     95     96
## 1234876.6 901606.2 901606.2 901606.2 1234876.6 901606.2 1234876.6 901606.2
##     97     98     99    100    101    102    103    104
```

##	901606.2	901606.2	1234876.6	901606.2	901606.2	1234876.6	901606.2	901606.2
##	105	106	107	108	109	110	111	112
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	113	114	115	116	117	118	119	120
##	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2
##	121	122	123	124	125	126	127	128
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	129	130	131	132	133	134	135	136
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	137	138	139	140	141	142	143	144
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	145	146	147	148	149	150	151	152
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	153	154	155	156	157	158	159	160
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	161	162	163	164	165	166	167	168
##	901606.2	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2
##	169	170	171	172	173	174	175	176
##	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2
##	177	178	179	180	181	182	183	184
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	185	186	187	188	189	190	191	192
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	193	194	195	196	197	198	199	200
##	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	715460.9	901606.2
##	201	202	203	204	205	206	207	208
##	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	715460.9
##	209	210	211	212	213	214	215	216
##	901606.2	901606.2	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9
##	217	218	219	220	221	222	223	224
##	715460.9	901606.2	715460.9	901606.2	901606.2	715460.9	715460.9	715460.9
##	225	226	227	228	229	230	231	232
##	715460.9	715460.9	715460.9	901606.2	901606.2	715460.9	715460.9	715460.9
##	233	234	235	236	237	238	239	240
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	241	242	243	244	245	246	247	248
##	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	901606.2	715460.9
##	249	250	251	252	253	254	255	256
##	901606.2	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9
##	257	258	259	260	261	262	263	264
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2	901606.2
##	265	266	267	268	269	270	271	272
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	273	274	275	276	277	278	279	280
##	901606.2	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	281	282	283	284	285	286	287	288
##	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9
##	289	290	291	292	293	294	295	296
##	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	297	298	299	300	301	302	303	304
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	305	306	307	308	309	310	311	312
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	313	314	315	316	317	318	319	320

##	715460.9	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9
##	321	322	323	324	325	326	327	328
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	329	330	331	332	333	334	335	336
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	337	338	339	340	341	342	343	344
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	345	346	347	348	349	350	351	352
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	353	354	355	356	357	358	359	360
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	361	362	363	364	365	366	367	368
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	369	370	371	372	373	374	375	376
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	377	378	379	380	381	382	383	384
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	385	386	387	388	389	390	391	392
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	393	394	395	396	397	398	399	400
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	401	402	403	404	405	406	407	408
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	409	410	411	412	413	414	415	416
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	417	418	419	420	421	422	423	424
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	425	426	427	428	429	430	431	432
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	433	434	435	436	437	438	439	440
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	441	442	443	444	445	446	447	448
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	449	450	451	452	453	454	455	456
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	457	458	459	460	461	462	463	464
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	465	466	467	468	469	470	471	472
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	473	474	475	476	477	478	479	480
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	481	482	483	484	485	486	487	488
##	715460.9	715460.9	715460.9	571607.6	901606.2	715460.9	715460.9	715460.9
##	489	490	491	492	493	494	495	496
##	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	497	498	499	500	501	502	503	504
##	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9
##	505	506	507	508	509	510	511	512
##	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	571607.6
##	513	514	515	516	517	518	519	520
##	715460.9	715460.9	715460.9	571607.6	571607.6	715460.9	571607.6	715460.9
##	521	522	523	524	525	526	527	528
##	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	571607.6	715460.9
##	529	530	531	532	533	534	535	536

##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9
##	537	538	539	540	541	542	543	544
##	715460.9	715460.9	715460.9	2134300.1	715460.9	715460.9	715460.9	571607.6
##	545	546	547	548	549	550	551	552
##	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	571607.6	715460.9
##	553	554	555	556	557	558	559	560
##	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	561	562	563	564	565	566	567	568
##	571607.6	571607.6	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6
##	569	570	571	572	573	574	575	576
##	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6
##	577	578	579	580	581	582	583	584
##	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	571607.6	571607.6
##	585	586	587	588	589	590	591	592
##	571607.6	571607.6	715460.9	715460.9	715460.9	571607.6	571607.6	571607.6
##	593	594	595	596	597	598	599	600
##	715460.9	715460.9	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6
##	601	602	603	604	605	606	607	608
##	571607.6	715460.9	571607.6	715460.9	715460.9	571607.6	715460.9	715460.9
##	609	610	611	612	613	614	615	616
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	617	618	619	620	621	622	623	624
##	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	625	626	627	628	629	630	631	632
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	633	634	635	636	637	638	639	640
##	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9
##	641	642	643	644	645	646	647	648
##	571607.6	715460.9	571607.6	571607.6	571607.6	715460.9	571607.6	571607.6
##	649	650	651	652	653	654	655	656
##	571607.6	571607.6	571607.6	571607.6	289701.3	571607.6	571607.6	571607.6
##	657	658	659	660	661	662	663	664
##	571607.6	571607.6	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6
##	665	666	667	668	669	670	671	672
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9	571607.6
##	673	674	675	676	677	678	679	680
##	571607.6	571607.6	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6
##	681	682	683	684	685	686	687	688
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	689	690	691	692	693	694	695	696
##	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1	571607.6	571607.6
##	697	698	699	700	701	702	703	704
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	705	706	707	708	709	710	711	712
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	713	714	715	716	717	718	719	720
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	721	722	723	724	725	726	727	728
##	571607.6	443651.1	571607.6	571607.6	571607.6	715460.9	571607.6	571607.6
##	729	730	731	732	733	734	735	736
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	737	738	739	740	741	742	743	744
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	745	746	747	748	749	750	751	752

##	443651.1	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	753	754	755	756	757	758	759	760
##	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1	571607.6	571607.6
##	761	762	763	764	765	766	767	768
##	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1	715460.9	443651.1
##	769	770	771	772	773	774	775	776
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	777	778	779	780	781	782	783	784
##	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	785	786	787	788	789	790	791	792
##	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	793	794	795	796	797	798	799	800
##	443651.1	443651.1	443651.1	571607.6	571607.6	443651.1	571607.6	571607.6
##	801	802	803	804	805	806	807	808
##	571607.6	571607.6	443651.1	443651.1	571607.6	571607.6	571607.6	571607.6
##	809	810	811	812	813	814	815	816
##	571607.6	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6
##	817	818	819	820	821	822	823	824
##	571607.6	571607.6	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1
##	825	826	827	828	829	830	831	832
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	833	834	835	836	837	838	839	840
##	289701.3	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	841	842	843	844	845	846	847	848
##	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6	443651.1
##	849	850	851	852	853	854	855	856
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6
##	857	858	859	860	861	862	863	864
##	715460.9	443651.1	571607.6	443651.1	443651.1	571607.6	443651.1	443651.1
##	865	866	867	868	869	870	871	872
##	443651.1	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1	443651.1
##	873	874	875	876	877	878	879	880
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	881	882	883	884	885	886	887	888
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	889	890	891	892	893	894	895	896
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	897	898	899	900	901	902	903	904
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	905	906	907	908	909	910	911	912
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	913	914	915	916	917	918	919	920
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	921	922	923	924	925	926	927	928
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	929	930	931	932	933	934	935	936
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	937	938	939	940	941	942	943	944
##	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	945	946	947	948	949	950	951	952
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	953	954	955	956	957	958	959	960
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	961	962	963	964	965	966	967	968

##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6	443651.1
##	969	970	971	972	973	974	975	976
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	977	978	979	980	981	982	983	984
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6
##	985	986	987	988	989	990	991	992
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	993	994	995	996	997	998	999	1000
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	1001	1002	1003	1004	1005	1006	1007	1008
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	1009	1010	1011	1012	1013	1014	1015	1016
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	1017	1018	1019	1020	1021	1022	1023	1024
##	443651.1	443651.1	443651.1	443651.1	289701.3	289701.3	443651.1	289701.3
##	1025	1026	1027	1028	1029	1030	1031	1032
##	443651.1	443651.1	443651.1	443651.1	443651.1	289701.3	289701.3	443651.1
##	1033	1034	1035	1036	1037	1038	1039	1040
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1041	1042	1043	1044	1045	1046	1047	1048
##	443651.1	289701.3	443651.1	289701.3	289701.3	289701.3	289701.3	289701.3
##	1049	1050	1051	1052	1053	1054	1055	1056
##	443651.1	443651.1	289701.3	443651.1	289701.3	289701.3	289701.3	289701.3
##	1057	1058	1059	1060	1061	1062	1063	1064
##	289701.3	289701.3	289701.3	571607.6	289701.3	289701.3	289701.3	289701.3
##	1065	1066	1067	1068	1069	1070	1071	1072
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1073	1074	1075	1076	1077	1078	1079	1080
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1081	1082	1083	1084	1085	1086	1087	1088
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1089	1090	1091	1092	1093	1094	1095	1096
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1097	1098	1099	1100	1101	1102	1103	1104
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1105	1106	1107	1108	1109	1110	1111	1112
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	1113	1114	1115	1116	1117	1118	1119	1120
##	289701.3	289701.3	154609.2	289701.3	154609.2	154609.2	289701.3	289701.3
##	1121	1122	1123	1124	1125	1126	1127	1128
##	289701.3	289701.3	289701.3	154609.2	154609.2	154609.2	154609.2	154609.2
##	1129	1130	1131	1132	1133	1134	1135	1136
##	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	2134300.1
##	1137	1138	1139	1140	1141	1142	1143	1144
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	1145	1146	1147	1148	1149	1150	1151	1152
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	1234876.6	1234876.6
##	1153	1154	1155	1156	1157	1158	1159	1160
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1161	1162	1163	1164	1165	1166	1167	1168
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1169	1170	1171	1172	1173	1174	1175	1176
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1177	1178	1179	1180	1181	1182	1183	1184

##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1185	1186	1187	1188	1189	1190	1191	1192
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1193	1194	1195	1196	1197	1198	1199	1200
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1201	1202	1203	1204	1205	1206	1207	1208
##	1234876.6	1234876.6	1234876.6	1234876.6	2134300.1	1234876.6	1234876.6	901606.2
##	1209	1210	1211	1212	1213	1214	1215	1216
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	289701.3	1234876.6
##	1217	1218	1219	1220	1221	1222	1223	1224
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	1225	1226	1227	1228	1229	1230	1231	1232
##	1234876.6	901606.2	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	901606.2
##	1233	1234	1235	1236	1237	1238	1239	1240
##	901606.2	1234876.6	1234876.6	901606.2	1234876.6	901606.2	901606.2	901606.2
##	1241	1242	1243	1244	1245	1246	1247	1248
##	901606.2	901606.2	1234876.6	901606.2	1234876.6	901606.2	1234876.6	901606.2
##	1249	1250	1251	1252	1253	1254	1255	1256
##	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2
##	1257	1258	1259	1260	1261	1262	1263	1264
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1265	1266	1267	1268	1269	1270	1271	1272
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1273	1274	1275	1276	1277	1278	1279	1280
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	1234876.6	901606.2
##	1281	1282	1283	1284	1285	1286	1287	1288
##	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2
##	1289	1290	1291	1292	1293	1294	1295	1296
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1297	1298	1299	1300	1301	1302	1303	1304
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1305	1306	1307	1308	1309	1310	1311	1312
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1313	1314	1315	1316	1317	1318	1319	1320
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1321	1322	1323	1324	1325	1326	1327	1328
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##	1329	1330	1331	1332	1333	1334	1335	1336
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##	1337	1338	1339	1340	1341	1342	1343	1344
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##	1345	1346	1347	1348	1349	1350	1351	1352
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1353	1354	1355	1356	1357	1358	1359	1360
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1361	1362	1363	1364	1365	1366	1367	1368
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1369	1370	1371	1372	1373	1374	1375	1376
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1377	1378	1379	1380	1381	1382	1383	1384
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1385	1386	1387	1388	1389	1390	1391	1392
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##	1401	1402	1403	1404	1405	1406	1407	1408
##	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2
##	1409	1410	1411	1412	1413	1414	1415	1416
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1417	1418	1419	1420	1421	1422	1423	1424
##	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2
##	1425	1426	1427	1428	1429	1430	1431	1432
##	715460.9	901606.2	715460.9	901606.2	901606.2	715460.9	715460.9	901606.2
##	1433	1434	1435	1436	1437	1438	1439	1440
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	1441	1442	1443	1444	1445	1446	1447	1448
##	901606.2	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2	715460.9
##	1449	1450	1451	1452	1453	1454	1455	1456
##	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	1457	1458	1459	1460	1461	1462	1463	1464
##	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2
##	1465	1466	1467	1468	1469	1470	1471	1472
##	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2	901606.2	715460.9
##	1473	1474	1475	1476	1477	1478	1479	1480
##	901606.2	715460.9	715460.9	901606.2	901606.2	715460.9	715460.9	901606.2
##	1481	1482	1483	1484	1485	1486	1487	1488
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2
##	1489	1490	1491	1492	1493	1494	1495	1496
##	715460.9	901606.2	715460.9	901606.2	715460.9	901606.2	715460.9	715460.9
##	1497	1498	1499	1500	1501	1502	1503	1504
##	901606.2	901606.2	715460.9	715460.9	715460.9	715460.9	901606.2	715460.9
##	1505	1506	1507	1508	1509	1510	1511	1512
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##	1513	1514	1515	1516	1517	1518	1519	1520
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##	1521	1522	1523	1524	1525	1526	1527	1528
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##	1529	1530	1531	1532	1533	1534	1535	1536
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##	1537	1538	1539	1540	1541	1542	1543	1544
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1545	1546	1547	1548	1549	1550	1551	1552
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1553	1554	1555	1556	1557	1558	1559	1560
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1561	1562	1563	1564	1565	1566	1567	1568
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1569	1570	1571	1572	1573	1574	1575	1576
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2
##	1577	1578	1579	1580	1581	1582	1583	1584
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1585	1586	1587	1588	1589	1590	1591	1592
##	715460.9	2134300.1	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1593	1594	1595	1596	1597	1598	1599	1600
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1601	1602	1603	1604	1605	1606	1607	1608
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1609	1610	1611	1612	1613	1614	1615	1616

##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1617	1618	1619	1620	1621	1622	1623	1624
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1625	1626	1627	1628	1629	1630	1631	1632
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1633	1634	1635	1636	1637	1638	1639	1640
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1641	1642	1643	1644	1645	1646	1647	1648
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1649	1650	1651	1652	1653	1654	1655	1656
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1657	1658	1659	1660	1661	1662	1663	1664
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1665	1666	1667	1668	1669	1670	1671	1672
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1673	1674	1675	1676	1677	1678	1679	1680
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1681	1682	1683	1684	1685	1686	1687	1688
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1689	1690	1691	1692	1693	1694	1695	1696
##	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9
##	1697	1698	1699	1700	1701	1702	1703	1704
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1705	1706	1707	1708	1709	1710	1711	1712
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1713	1714	1715	1716	1717	1718	1719	1720
##	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9
##	1721	1722	1723	1724	1725	1726	1727	1728
##	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9
##	1729	1730	1731	1732	1733	1734	1735	1736
##	715460.9	715460.9	571607.6	715460.9	571607.6	715460.9	715460.9	715460.9
##	1737	1738	1739	1740	1741	1742	1743	1744
##	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9
##	1745	1746	1747	1748	1749	1750	1751	1752
##	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	571607.6
##	1753	1754	1755	1756	1757	1758	1759	1760
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	1761	1762	1763	1764	1765	1766	1767	1768
##	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9
##	1769	1770	1771	1772	1773	1774	1775	1776
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	571607.6
##	1777	1778	1779	1780	1781	1782	1783	1784
##	715460.9	715460.9	571607.6	715460.9	571607.6	715460.9	715460.9	715460.9
##	1785	1786	1787	1788	1789	1790	1791	1792
##	571607.6	715460.9	571607.6	571607.6	715460.9	715460.9	715460.9	715460.9
##	1793	1794	1795	1796	1797	1798	1799	1800
##	571607.6	571607.6	571607.6	715460.9	571607.6	715460.9	571607.6	571607.6
##	1801	1802	1803	1804	1805	1806	1807	1808
##	715460.9	571607.6	715460.9	571607.6	571607.6	571607.6	715460.9	571607.6
##	1809	1810	1811	1812	1813	1814	1815	1816
##	715460.9	571607.6	571607.6	571607.6	571607.6	715460.9	715460.9	571607.6
##	1817	1818	1819	1820	1821	1822	1823	1824
##	571607.6	715460.9	715460.9	571607.6	715460.9	715460.9	571607.6	571607.6
##	1825	1826	1827	1828	1829	1830	1831	1832

##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9	571607.6
##	1833	1834	1835	1836	1837	1838	1839	1840
##	715460.9	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1841	1842	1843	1844	1845	1846	1847	1848
##	571607.6	571607.6	571607.6	715460.9	571607.6	715460.9	571607.6	571607.6
##	1849	1850	1851	1852	1853	1854	1855	1856
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1857	1858	1859	1860	1861	1862	1863	1864
##	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9
##	1865	1866	1867	1868	1869	1870	1871	1872
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1873	1874	1875	1876	1877	1878	1879	1880
##	571607.6	571607.6	715460.9	571607.6	571607.6	715460.9	571607.6	571607.6
##	1881	1882	1883	1884	1885	1886	1887	1888
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1889	1890	1891	1892	1893	1894	1895	1896
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1897	1898	1899	1900	1901	1902	1903	1904
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1905	1906	1907	1908	1909	1910	1911	1912
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9
##	1913	1914	1915	1916	1917	1918	1919	1920
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1921	1922	1923	1924	1925	1926	1927	1928
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1929	1930	1931	1932	1933	1934	1935	1936
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	1937	1938	1939	1940	1941	1942	1943	1944
##	571607.6	443651.1	571607.6	571607.6	571607.6	443651.1	571607.6	571607.6
##	1945	1946	1947	1948	1949	1950	1951	1952
##	571607.6	571607.6	443651.1	571607.6	443651.1	571607.6	571607.6	571607.6
##	1953	1954	1955	1956	1957	1958	1959	1960
##	571607.6	571607.6	443651.1	443651.1	571607.6	571607.6	443651.1	571607.6
##	1961	1962	1963	1964	1965	1966	1967	1968
##	571607.6	443651.1	571607.6	443651.1	571607.6	571607.6	443651.1	571607.6
##	1969	1970	1971	1972	1973	1974	1975	1976
##	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1	443651.1	443651.1
##	1977	1978	1979	1980	1981	1982	1983	1984
##	571607.6	443651.1	571607.6	571607.6	443651.1	571607.6	443651.1	443651.1
##	1985	1986	1987	1988	1989	1990	1991	1992
##	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1	571607.6	443651.1
##	1993	1994	1995	1996	1997	1998	1999	2000
##	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1	571607.6	443651.1
##	2001	2002	2003	2004	2005	2006	2007	2008
##	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1	443651.1	443651.1
##	2009	2010	2011	2012	2013	2014	2015	2016
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2017	2018	2019	2020	2021	2022	2023	2024
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2025	2026	2027	2028	2029	2030	2031	2032
##	443651.1	443651.1	571607.6	443651.1	443651.1	443651.1	443651.1	571607.6
##	2033	2034	2035	2036	2037	2038	2039	2040
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2041	2042	2043	2044	2045	2046	2047	2048

##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2049	2050	2051	2052	2053	2054	2055	2056
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6
##	2057	2058	2059	2060	2061	2062	2063	2064
##	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6	443651.1	571607.6
##	2065	2066	2067	2068	2069	2070	2071	2072
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2073	2074	2075	2076	2077	2078	2079	2080
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2081	2082	2083	2084	2085	2086	2087	2088
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2089	2090	2091	2092	2093	2094	2095	2096
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2097	2098	2099	2100	2101	2102	2103	2104
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	2105	2106	2107	2108	2109	2110	2111	2112
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	289701.3	443651.1
##	2113	2114	2115	2116	2117	2118	2119	2120
##	443651.1	443651.1	443651.1	443651.1	289701.3	443651.1	443651.1	289701.3
##	2121	2122	2123	2124	2125	2126	2127	2128
##	443651.1	289701.3	289701.3	443651.1	289701.3	289701.3	443651.1	443651.1
##	2129	2130	2131	2132	2133	2134	2135	2136
##	443651.1	443651.1	443651.1	443651.1	289701.3	289701.3	289701.3	289701.3
##	2137	2138	2139	2140	2141	2142	2143	2144
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2145	2146	2147	2148	2149	2150	2151	2152
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2153	2154	2155	2156	2157	2158	2159	2160
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2161	2162	2163	2164	2165	2166	2167	2168
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2169	2170	2171	2172	2173	2174	2175	2176
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2177	2178	2179	2180	2181	2182	2183	2184
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2185	2186	2187	2188	2189	2190	2191	2192
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	2193	2194	2195	2196	2197	2198	2199	2200
##	289701.3	289701.3	154609.2	289701.3	289701.3	154609.2	154609.2	154609.2
##	2201	2202	2203	2204	2205	2206	2207	2208
##	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2
##	2209	2210	2211	2212	2213	2214	2215	2216
##	154609.2	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	2217	2218	2219	2220	2221	2222	2223	2224
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	2225	2226	2227	2228	2229	2230	2231	2232
##	2134300.1	2134300.1	2134300.1	1234876.6	1234876.6	1234876.6	2134300.1	1234876.6
##	2233	2234	2235	2236	2237	2238	2239	2240
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2241	2242	2243	2244	2245	2246	2247	2248
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2249	2250	2251	2252	2253	2254	2255	2256
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2257	2258	2259	2260	2261	2262	2263	2264

##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	289701.3	715460.9
##	2265	2266	2267	2268	2269	2270	2271	2272
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2273	2274	2275	2276	2277	2278	2279	2280
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2281	2282	2283	2284	2285	2286	2287	2288
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2289	2290	2291	2292	2293	2294	2295	2296
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2297	2298	2299	2300	2301	2302	2303	2304
##	1234876.6	1234876.6	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	1234876.6
##	2305	2306	2307	2308	2309	2310	2311	2312
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2313	2314	2315	2316	2317	2318	2319	2320
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	1234876.6	901606.2
##	2321	2322	2323	2324	2325	2326	2327	2328
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	2329	2330	2331	2332	2333	2334	2335	2336
##	1234876.6	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	901606.2	1234876.6
##	2337	2338	2339	2340	2341	2342	2343	2344
##	1234876.6	289701.3	1234876.6	1234876.6	1234876.6	901606.2	901606.2	1234876.6
##	2345	2346	2347	2348	2349	2350	2351	2352
##	901606.2	901606.2	901606.2	1234876.6	1234876.6	901606.2	901606.2	901606.2
##	2353	2354	2355	2356	2357	2358	2359	2360
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2361	2362	2363	2364	2365	2366	2367	2368
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2369	2370	2371	2372	2373	2374	2375	2376
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2377	2378	2379	2380	2381	2382	2383	2384
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2385	2386	2387	2388	2389	2390	2391	2392
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2393	2394	2395	2396	2397	2398	2399	2400
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2401	2402	2403	2404	2405	2406	2407	2408
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2409	2410	2411	2412	2413	2414	2415	2416
##	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
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##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
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##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2449	2450	2451	2452	2453	2454	2455	2456
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2457	2458	2459	2460	2461	2462	2463	2464
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2465	2466	2467	2468	2469	2470	2471	2472
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2473	2474	2475	2476	2477	2478	2479	2480

##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2481	2482	2483	2484	2485	2486	2487	2488
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2489	2490	2491	2492	2493	2494	2495	2496
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2497	2498	2499	2500	2501	2502	2503	2504
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
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##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2513	2514	2515	2516	2517	2518	2519	2520
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2521	2522	2523	2524	2525	2526	2527	2528
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2529	2530	2531	2532	2533	2534	2535	2536
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
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##	2545	2546	2547	2548	2549	2550	2551	2552
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
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##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2561	2562	2563	2564	2565	2566	2567	2568
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2569	2570	2571	2572	2573	2574	2575	2576
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2577	2578	2579	2580	2581	2582	2583	2584
##	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2585	2586	2587	2588	2589	2590	2591	2592
##	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2
##	2593	2594	2595	2596	2597	2598	2599	2600
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2601	2602	2603	2604	2605	2606	2607	2608
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2609	2610	2611	2612	2613	2614	2615	2616
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2617	2618	2619	2620	2621	2622	2623	2624
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	2625	2626	2627	2628	2629	2630	2631	2632
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2633	2634	2635	2636	2637	2638	2639	2640
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2641	2642	2643	2644	2645	2646	2647	2648
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	2649	2650	2651	2652	2653	2654	2655	2656
##	901606.2	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2	715460.9
##	2657	2658	2659	2660	2661	2662	2663	2664
##	715460.9	715460.9	901606.2	901606.2	715460.9	901606.2	715460.9	901606.2
##	2665	2666	2667	2668	2669	2670	2671	2672
##	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9	715460.9
##	2673	2674	2675	2676	2677	2678	2679	2680
##	901606.2	901606.2	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9
##	2681	2682	2683	2684	2685	2686	2687	2688
##	901606.2	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9
##	2689	2690	2691	2692	2693	2694	2695	2696

##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2697	2698	2699	2700	2701	2702	2703	2704
##	715460.9	715460.9	901606.2	715460.9	901606.2	715460.9	715460.9	715460.9
##	2705	2706	2707	2708	2709	2710	2711	2712
##	901606.2	715460.9	715460.9	715460.9	901606.2	715460.9	901606.2	715460.9
##	2713	2714	2715	2716	2717	2718	2719	2720
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2721	2722	2723	2724	2725	2726	2727	2728
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2729	2730	2731	2732	2733	2734	2735	2736
##	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2737	2738	2739	2740	2741	2742	2743	2744
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2745	2746	2747	2748	2749	2750	2751	2752
##	715460.9	901606.2	901606.2	715460.9	715460.9	715460.9	715460.9	715460.9
##	2753	2754	2755	2756	2757	2758	2759	2760
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2761	2762	2763	2764	2765	2766	2767	2768
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2769	2770	2771	2772	2773	2774	2775	2776
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2777	2778	2779	2780	2781	2782	2783	2784
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2785	2786	2787	2788	2789	2790	2791	2792
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2793	2794	2795	2796	2797	2798	2799	2800
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2801	2802	2803	2804	2805	2806	2807	2808
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2809	2810	2811	2812	2813	2814	2815	2816
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2817	2818	2819	2820	2821	2822	2823	2824
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2825	2826	2827	2828	2829	2830	2831	2832
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2833	2834	2835	2836	2837	2838	2839	2840
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2841	2842	2843	2844	2845	2846	2847	2848
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2849	2850	2851	2852	2853	2854	2855	2856
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2857	2858	2859	2860	2861	2862	2863	2864
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2865	2866	2867	2868	2869	2870	2871	2872
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2873	2874	2875	2876	2877	2878	2879	2880
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2881	2882	2883	2884	2885	2886	2887	2888
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2889	2890	2891	2892	2893	2894	2895	2896
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2897	2898	2899	2900	2901	2902	2903	2904
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2905	2906	2907	2908	2909	2910	2911	2912

##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	2913	2914	2915	2916	2917	2918	2919	2920
##	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9
##	2921	2922	2923	2924	2925	2926	2927	2928
##	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9
##	2929	2930	2931	2932	2933	2934	2935	2936
##	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9
##	2937	2938	2939	2940	2941	2942	2943	2944
##	571607.6	715460.9	715460.9	571607.6	571607.6	571607.6	715460.9	571607.6
##	2945	2946	2947	2948	2949	2950	2951	2952
##	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9
##	2953	2954	2955	2956	2957	2958	2959	2960
##	715460.9	715460.9	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6
##	2961	2962	2963	2964	2965	2966	2967	2968
##	571607.6	715460.9	715460.9	571607.6	715460.9	571607.6	571607.6	571607.6
##	2969	2970	2971	2972	2973	2974	2975	2976
##	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6	715460.9
##	2977	2978	2979	2980	2981	2982	2983	2984
##	715460.9	571607.6	571607.6	715460.9	715460.9	715460.9	571607.6	571607.6
##	2985	2986	2987	2988	2989	2990	2991	2992
##	571607.6	715460.9	715460.9	715460.9	571607.6	571607.6	571607.6	571607.6
##	2993	2994	2995	2996	2997	2998	2999	3000
##	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6
##	3001	3002	3003	3004	3005	3006	3007	3008
##	715460.9	571607.6	715460.9	715460.9	571607.6	571607.6	571607.6	571607.6
##	3009	3010	3011	3012	3013	3014	3015	3016
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3017	3018	3019	3020	3021	3022	3023	3024
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9	571607.6
##	3025	3026	3027	3028	3029	3030	3031	3032
##	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9	715460.9	571607.6
##	3033	3034	3035	3036	3037	3038	3039	3040
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3041	3042	3043	3044	3045	3046	3047	3048
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3049	3050	3051	3052	3053	3054	3055	3056
##	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3057	3058	3059	3060	3061	3062	3063	3064
##	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3065	3066	3067	3068	3069	3070	3071	3072
##	571607.6	571607.6	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6
##	3073	3074	3075	3076	3077	3078	3079	3080
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3081	3082	3083	3084	3085	3086	3087	3088
##	571607.6	571607.6	571607.6	443651.1	571607.6	715460.9	571607.6	571607.6
##	3089	3090	3091	3092	3093	3094	3095	3096
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##	3097	3098	3099	3100	3101	3102	3103	3104
##	571607.6	571607.6	443651.1	443651.1	571607.6	571607.6	571607.6	443651.1
##	3105	3106	3107	3108	3109	3110	3111	3112
##	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3113	3114	3115	3116	3117	3118	3119	3120
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	3121	3122	3123	3124	3125	3126	3127	3128

##	571607.6	571607.6	443651.1	571607.6	571607.6	571607.6	443651.1	571607.6
##	3129	3130	3131	3132	3133	3134	3135	3136
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	3137	3138	3139	3140	3141	3142	3143	3144
##	571607.6	443651.1	443651.1	571607.6	571607.6	443651.1	571607.6	443651.1
##	3145	3146	3147	3148	3149	3150	3151	3152
##	571607.6	571607.6	443651.1	571607.6	443651.1	571607.6	571607.6	571607.6
##	3153	3154	3155	3156	3157	3158	3159	3160
##	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1	443651.1	571607.6
##	3161	3162	3163	3164	3165	3166	3167	3168
##	443651.1	571607.6	443651.1	443651.1	571607.6	571607.6	443651.1	443651.1
##	3169	3170	3171	3172	3173	3174	3175	3176
##	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3177	3178	3179	3180	3181	3182	3183	3184
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3185	3186	3187	3188	3189	3190	3191	3192
##	571607.6	571607.6	443651.1	443651.1	443651.1	571607.6	443651.1	443651.1
##	3193	3194	3195	3196	3197	3198	3199	3200
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3201	3202	3203	3204	3205	3206	3207	3208
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3209	3210	3211	3212	3213	3214	3215	3216
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3217	3218	3219	3220	3221	3222	3223	3224
##	443651.1	443651.1	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1
##	3225	3226	3227	3228	3229	3230	3231	3232
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3233	3234	3235	3236	3237	3238	3239	3240
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3241	3242	3243	3244	3245	3246	3247	3248
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3249	3250	3251	3252	3253	3254	3255	3256
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3257	3258	3259	3260	3261	3262	3263	3264
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	3265	3266	3267	3268	3269	3270	3271	3272
##	289701.3	443651.1	443651.1	443651.1	443651.1	443651.1	289701.3	443651.1
##	3273	3274	3275	3276	3277	3278	3279	3280
##	443651.1	443651.1	289701.3	289701.3	443651.1	289701.3	289701.3	289701.3
##	3281	3282	3283	3284	3285	3286	3287	3288
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3289	3290	3291	3292	3293	3294	3295	3296
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3297	3298	3299	3300	3301	3302	3303	3304
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3305	3306	3307	3308	3309	3310	3311	3312
##	289701.3	289701.3	443651.1	289701.3	289701.3	289701.3	289701.3	289701.3
##	3313	3314	3315	3316	3317	3318	3319	3320
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3321	3322	3323	3324	3325	3326	3327	3328
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3329	3330	3331	3332	3333	3334	3335	3336
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	3337	3338	3339	3340	3341	3342	3343	3344

##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	154609.2
##	3345	3346	3347	3348	3349	3350	3351	3352
##	289701.3	154609.2	154609.2	289701.3	154609.2	289701.3	154609.2	154609.2
##	3353	3354	3355	3356	3357	3358	3359	3360
##	289701.3	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2
##	3361	3362	3363	3364	3365	3366	3367	3368
##	154609.2	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	3369	3370	3371	3372	3373	3374	3375	3376
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	3377	3378	3379	3380	3381	3382	3383	3384
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	3385	3386	3387	3388	3389	3390	3391	3392
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	3393	3394	3395	3396	3397	3398	3399	3400
##	1234876.6	2134300.1	2134300.1	2134300.1	2134300.1	1234876.6	1234876.6	1234876.6
##	3401	3402	3403	3404	3405	3406	3407	3408
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3409	3410	3411	3412	3413	3414	3415	3416
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3417	3418	3419	3420	3421	3422	3423	3424
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3425	3426	3427	3428	3429	3430	3431	3432
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3433	3434	3435	3436	3437	3438	3439	3440
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3441	3442	3443	3444	3445	3446	3447	3448
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3449	3450	3451	3452	3453	3454	3455	3456
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3457	3458	3459	3460	3461	3462	3463	3464
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3465	3466	3467	3468	3469	3470	3471	3472
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3473	3474	3475	3476	3477	3478	3479	3480
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3481	3482	3483	3484	3485	3486	3487	3488
##	1234876.6	1234876.6	1234876.6	289701.3	1234876.6	1234876.6	1234876.6	1234876.6
##	3489	3490	3491	3492	3493	3494	3495	3496
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3497	3498	3499	3500	3501	3502	3503	3504
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3505	3506	3507	3508	3509	3510	3511	3512
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3513	3514	3515	3516	3517	3518	3519	3520
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3521	3522	3523	3524	3525	3526	3527	3528
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3529	3530	3531	3532	3533	3534	3535	3536
##	901606.2	1234876.6	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	1234876.6
##	3537	3538	3539	3540	3541	3542	3543	3544
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3545	3546	3547	3548	3549	3550	3551	3552
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3553	3554	3555	3556	3557	3558	3559	3560

##	1234876.6	901606.2	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	1234876.6
##	3561	3562	3563	3564	3565	3566	3567	3568
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	3569	3570	3571	3572	3573	3574	3575	3576
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	
##	3577	3578	3579	3580	3581	3582	3583	3584
##	1234876.6	901606.2	1234876.6	1234876.6	901606.2	1234876.6	901606.2	901606.2
##	3585	3586	3587	3588	3589	3590	3591	3592
##	1234876.6	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2
##	3593	3594	3595	3596	3597	3598	3599	3600
##	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3601	3602	3603	3604	3605	3606	3607	3608
##	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3609	3610	3611	3612	3613	3614	3615	3616
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3617	3618	3619	3620	3621	3622	3623	3624
##	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2
##	3625	3626	3627	3628	3629	3630	3631	3632
##	1234876.6	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2
##	3633	3634	3635	3636	3637	3638	3639	3640
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3641	3642	3643	3644	3645	3646	3647	3648
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3649	3650	3651	3652	3653	3654	3655	3656
##	901606.2	901606.2	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2
##	3657	3658	3659	3660	3661	3662	3663	3664
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3665	3666	3667	3668	3669	3670	3671	3672
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3673	3674	3675	3676	3677	3678	3679	3680
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3681	3682	3683	3684	3685	3686	3687	3688
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3689	3690	3691	3692	3693	3694	3695	3696
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3697	3698	3699	3700	3701	3702	3703	3704
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3705	3706	3707	3708	3709	3710	3711	3712
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3713	3714	3715	3716	3717	3718	3719	3720
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3721	3722	3723	3724	3725	3726	3727	3728
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3729	3730	3731	3732	3733	3734	3735	3736
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3737	3738	3739	3740	3741	3742	3743	3744
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	3745	3746	3747	3748	3749	3750	3751	3752
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3753	3754	3755	3756	3757	3758	3759	3760
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3761	3762	3763	3764	3765	3766	3767	3768
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3769	3770	3771	3772	3773	3774	3775	3776

##	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2
##	3777	3778	3779	3780	3781	3782	3783	3784
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3785	3786	3787	3788	3789	3790	3791	3792
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3793	3794	3795	3796	3797	3798	3799	3800
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3801	3802	3803	3804	3805	3806	3807	3808
##	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3809	3810	3811	3812	3813	3814	3815	3816
##	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2
##	3817	3818	3819	3820	3821	3822	3823	3824
##	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2
##	3825	3826	3827	3828	3829	3830	3831	3832
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3833	3834	3835	3836	3837	3838	3839	3840
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	3841	3842	3843	3844	3845	3846	3847	3848
##	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2
##	3849	3850	3851	3852	3853	3854	3855	3856
##	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2
##	3857	3858	3859	3860	3861	3862	3863	3864
##	901606.2	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2	901606.2
##	3865	3866	3867	3868	3869	3870	3871	3872
##	715460.9	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2
##	3873	3874	3875	3876	3877	3878	3879	3880
##	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2	715460.9	901606.2
##	3881	3882	3883	3884	3885	3886	3887	3888
##	901606.2	715460.9	901606.2	715460.9	715460.9	715460.9	901606.2	901606.2
##	3889	3890	3891	3892	3893	3894	3895	3896
##	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2
##	3897	3898	3899	3900	3901	3902	3903	3904
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	3905	3906	3907	3908	3909	3910	3911	3912
##	715460.9	901606.2	715460.9	901606.2	901606.2	715460.9	901606.2	901606.2
##	3913	3914	3915	3916	3917	3918	3919	3920
##	901606.2	901606.2	715460.9	901606.2	715460.9	901606.2	715460.9	715460.9
##	3921	3922	3923	3924	3925	3926	3927	3928
##	901606.2	715460.9	715460.9	901606.2	715460.9	715460.9	901606.2	901606.2
##	3929	3930	3931	3932	3933	3934	3935	3936
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##	3937	3938	3939	3940	3941	3942	3943	3944
##	901606.2	715460.9	901606.2	901606.2	901606.2	715460.9	715460.9	715460.9
##	3945	3946	3947	3948	3949	3950	3951	3952
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##	3953	3954	3955	3956	3957	3958	3959	3960
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2	715460.9
##	3961	3962	3963	3964	3965	3966	3967	3968
##	901606.2	901606.2	715460.9	901606.2	715460.9	715460.9	715460.9	901606.2
##	3969	3970	3971	3972	3973	3974	3975	3976
##	715460.9	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9
##	3977	3978	3979	3980	3981	3982	3983	3984
##	901606.2	715460.9	715460.9	715460.9	901606.2	901606.2	901606.2	901606.2
##	3985	3986	3987	3988	3989	3990	3991	3992

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##	3993	3994	3995	3996	3997	3998	3999	4000
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##	4001	4002	4003	4004	4005	4006	4007	4008
##	715460.9	715460.9	715460.9	901606.2	715460.9	901606.2	715460.9	715460.9
##	4009	4010	4011	4012	4013	4014	4015	4016
##	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9	715460.9
##	4017	4018	4019	4020	4021	4022	4023	4024
##	901606.2	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9
##	4025	4026	4027	4028	4029	4030	4031	4032
##	715460.9	715460.9	715460.9	901606.2	715460.9	715460.9	715460.9	715460.9
##	4033	4034	4035	4036	4037	4038	4039	4040
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4041	4042	4043	4044	4045	4046	4047	4048
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4049	4050	4051	4052	4053	4054	4055	4056
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4057	4058	4059	4060	4061	4062	4063	4064
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2
##	4065	4066	4067	4068	4069	4070	4071	4072
##	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4073	4074	4075	4076	4077	4078	4079	4080
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4081	4082	4083	4084	4085	4086	4087	4088
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4089	4090	4091	4092	4093	4094	4095	4096
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4097	4098	4099	4100	4101	4102	4103	4104
##	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4105	4106	4107	4108	4109	4110	4111	4112
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##	4113	4114	4115	4116	4117	4118	4119	4120
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4121	4122	4123	4124	4125	4126	4127	4128
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9
##	4129	4130	4131	4132	4133	4134	4135	4136
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4137	4138	4139	4140	4141	4142	4143	4144
##	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4145	4146	4147	4148	4149	4150	4151	4152
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4153	4154	4155	4156	4157	4158	4159	4160
##	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	571607.6	715460.9
##	4161	4162	4163	4164	4165	4166	4167	4168
##	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9	715460.9	715460.9
##	4169	4170	4171	4172	4173	4174	4175	4176
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4177	4178	4179	4180	4181	4182	4183	4184
##	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9	715460.9
##	4185	4186	4187	4188	4189	4190	4191	4192
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	571607.6	715460.9
##	4193	4194	4195	4196	4197	4198	4199	4200
##	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9	715460.9
##	4201	4202	4203	4204	4205	4206	4207	4208

##	715460.9	571607.6	571607.6	571607.6	715460.9	715460.9	715460.9	715460.9
##	4209	4210	4211	4212	4213	4214	4215	4216
##	715460.9	571607.6	571607.6	715460.9	571607.6	715460.9	715460.9	715460.9
##	4217	4218	4219	4220	4221	4222	4223	4224
##	715460.9	715460.9	571607.6	715460.9	571607.6	715460.9	571607.6	715460.9
##	4225	4226	4227	4228	4229	4230	4231	4232
##	715460.9	715460.9	715460.9	715460.9	571607.6	571607.6	571607.6	715460.9
##	4233	4234	4235	4236	4237	4238	4239	4240
##	715460.9	715460.9	715460.9	715460.9	571607.6	571607.6	571607.6	715460.9
##	4241	4242	4243	4244	4245	4246	4247	4248
##	715460.9	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	4249	4250	4251	4252	4253	4254	4255	4256
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	901606.2
##	4257	4258	4259	4260	4261	4262	4263	4264
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	4265	4266	4267	4268	4269	4270	4271	4272
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	715460.9
##	4273	4274	4275	4276	4277	4278	4279	4280
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	4281	4282	4283	4284	4285	4286	4287	4288
##	571607.6	571607.6	571607.6	715460.9	571607.6	571607.6	571607.6	571607.6
##	4289	4290	4291	4292	4293	4294	4295	4296
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	4297	4298	4299	4300	4301	4302	4303	4304
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6
##	4305	4306	4307	4308	4309	4310	4311	4312
##	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	4313	4314	4315	4316	4317	4318	4319	4320
##	571607.6	571607.6	443651.1	571607.6	571607.6	443651.1	571607.6	443651.1
##	4321	4322	4323	4324	4325	4326	4327	4328
##	571607.6	443651.1	443651.1	571607.6	443651.1	571607.6	571607.6	571607.6
##	4329	4330	4331	4332	4333	4334	4335	4336
##	571607.6	571607.6	571607.6	443651.1	443651.1	571607.6	571607.6	571607.6
##	4337	4338	4339	4340	4341	4342	4343	4344
##	443651.1	443651.1	571607.6	571607.6	571607.6	571607.6	571607.6	443651.1
##	4345	4346	4347	4348	4349	4350	4351	4352
##	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6	571607.6
##	4353	4354	4355	4356	4357	4358	4359	4360
##	443651.1	571607.6	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1
##	4361	4362	4363	4364	4365	4366	4367	4368
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	571607.6
##	4369	4370	4371	4372	4373	4374	4375	4376
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4377	4378	4379	4380	4381	4382	4383	4384
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4385	4386	4387	4388	4389	4390	4391	4392
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4393	4394	4395	4396	4397	4398	4399	4400
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4401	4402	4403	4404	4405	4406	4407	4408
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4409	4410	4411	4412	4413	4414	4415	4416
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4417	4418	4419	4420	4421	4422	4423	4424

##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4425	4426	4427	4428	4429	4430	4431	4432
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4433	4434	4435	4436	4437	4438	4439	4440
##	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1
##	4441	4442	4443	4444	4445	4446	4447	4448
##	571607.6	443651.1	443651.1	443651.1	443651.1	443651.1	443651.1	289701.3
##	4449	4450	4451	4452	4453	4454	4455	4456
##	443651.1	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	4457	4458	4459	4460	4461	4462	4463	4464
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	4465	4466	4467	4468	4469	4470	4471	4472
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	4473	4474	4475	4476	4477	4478	4479	4480
##	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3	289701.3
##	4481	4482	4483	4484	4485	4486	4487	4488
##	289701.3	289701.3	289701.3	289701.3	289701.3	154609.2	289701.3	154609.2
##	4489	4490	4491	4492	4493	4494	4495	4496
##	154609.2	154609.2	154609.2	289701.3	289701.3	154609.2	154609.2	154609.2
##	4497	4498	4499	4500	4501	4502	4503	4504
##	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2
##	4505	4506	4507	4508	4509	4510	4511	4512
##	154609.2	154609.2	154609.2	154609.2	154609.2	154609.2	443651.1	154609.2
##	4513	4514	4515	4516	4517	4518	4519	4520
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	4521	4522	4523	4524	4525	4526	4527	4528
##	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1	2134300.1
##	4529	4530	4531	4532	4533	4534	4535	4536
##	1234876.6	2134300.1	2134300.1	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4537	4538	4539	4540	4541	4542	4543	4544
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4545	4546	4547	4548	4549	4550	4551	4552
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4553	4554	4555	4556	4557	4558	4559	4560
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4561	4562	4563	4564	4565	4566	4567	4568
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4569	4570	4571	4572	4573	4574	4575	4576
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4577	4578	4579	4580	4581	4582	4583	4584
##	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	1234876.6	1234876.6	1234876.6
##	4585	4586	4587	4588	4589	4590	4591	4592
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4593	4594	4595	4596	4597	4598	4599	4600
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4601	4602	4603	4604	4605	4606	4607	4608
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2
##	4609	4610	4611	4612	4613	4614	4615	4616
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	901606.2
##	4617	4618	4619	4620	4621	4622	4623	4624
##	1234876.6	1234876.6	901606.2	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6
##	4625	4626	4627	4628	4629	4630	4631	4632
##	901606.2	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	1234876.6
##	4633	4634	4635	4636	4637	4638	4639	4640

##	901606.2	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	1234876.6	1234876.6
##	4641	4642	4643	4644	4645	4646	4647	4648
##	1234876.6	1234876.6	1234876.6	1234876.6	1234876.6	901606.2	901606.2	901606.2
##	4649	4650	4651	4652	4653	4654	4655	4656
##	901606.2	901606.2	1234876.6	1234876.6	901606.2	1234876.6	901606.2	901606.2
##	4657	4658	4659	4660	4661	4662	4663	4664
##	1234876.6	901606.2	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2
##	4665	4666	4667	4668	4669	4670	4671	4672
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4673	4674	4675	4676	4677	4678	4679	4680
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4681	4682	4683	4684	4685	4686	4687	4688
##	1234876.6	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4689	4690	4691	4692	4693	4694	4695	4696
##	901606.2	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2	901606.2
##	4697	4698	4699	4700	4701	4702	4703	4704
##	901606.2	901606.2	901606.2	901606.2	901606.2	1234876.6	901606.2	901606.2
##	4705	4706	4707	4708	4709	4710	4711	4712
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4713	4714	4715	4716	4717	4718	4719	4720
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4721	4722	4723	4724	4725	4726	4727	4728
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4729	4730	4731	4732	4733	4734	4735	4736
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4737	4738	4739	4740	4741	4742	4743	4744
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4745	4746	4747	4748	4749	4750	4751	4752
##	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2
##	4753	4754	4755	4756	4757	4758	4759	4760
##	901606.2	715460.9	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2
##	4761	4762	4763	4764	4765	4766	4767	4768
##	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2	901606.2	901606.2
##	4769	4770	4771	4772	4773	4774	4775	4776
##	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9	901606.2	901606.2
##	4777	4778	4779	4780	4781	4782	4783	4784
##	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	901606.2	715460.9
##	4785	4786	4787	4788	4789	4790	4791	4792
##	901606.2	901606.2	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2
##	4793	4794	4795	4796	4797	4798	4799	4800
##	901606.2	901606.2	901606.2	901606.2	715460.9	715460.9	901606.2	901606.2
##	4801	4802	4803	4804	4805	4806	4807	4808
##	715460.9	901606.2	901606.2	715460.9	715460.9	715460.9	901606.2	901606.2
##	4809	4810	4811	4812	4813	4814	4815	4816
##	715460.9	901606.2	901606.2	715460.9	901606.2	901606.2	715460.9	715460.9
##	4817	4818	4819	4820	4821	4822	4823	4824
##	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2	901606.2	715460.9
##	4825	4826	4827	4828	4829	4830	4831	4832
##	901606.2	715460.9	715460.9	715460.9	901606.2	715460.9	901606.2	901606.2
##	4833	4834	4835	4836	4837	4838	4839	4840
##	715460.9	715460.9	715460.9	715460.9	715460.9	901606.2	901606.2	715460.9
##	4841	4842	4843	4844	4845	4846	4847	4848
##	715460.9	715460.9	901606.2	715460.9	715460.9	901606.2	715460.9	715460.9
##	4849	4850	4851	4852	4853	4854	4855	4856

```
## 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9
## 4857 4858 4859 4860 4861 4862 4863 4864
## 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9
## 4865 4866 4867 4868 4869 4870 4871 4872
## 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9
## 4873 4874 4875 4876 4877 4878 4879 4880
## 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9
## 4881 4882 4883 4884 4885 4886 4887 4888
## 715460.9 715460.9 571607.6 715460.9 715460.9 715460.9 715460.9 715460.9
## 4889 4890 4891 4892 4893 4894 4895 4896
## 715460.9 715460.9 715460.9 715460.9 571607.6 715460.9 715460.9 715460.9
## 4897 4898 4899 4900 4901 4902 4903 4904
## 715460.9 715460.9 715460.9 571607.6 715460.9 715460.9 571607.6 715460.9
## 4905 4906 4907 4908 4909 4910 4911 4912
## 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 715460.9 571607.6
## 4913 4914 4915 4916 4917 4918 4919 4920
## 715460.9 715460.9 715460.9 571607.6 715460.9 715460.9 571607.6 571607.6
## 4921 4922 4923 4924 4925 4926 4927 4928
## 715460.9 715460.9 571607.6 715460.9 571607.6 571607.6 571607.6 715460.9
## 4929 4930
## 715460.9 571607.6
```

```
#prediction on test data
modelx<- predict(fitto,ms)
exp(modelx)
```

```
## 1 2 3 4 5 6 7 8
## 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6
## 9 10 11 12 13 14 15 16
## 571607.6 571607.6 571607.6 571607.6 571607.6 715460.9 571607.6 571607.6
## 17 18 19 20 21 22 23 24
## 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6 571607.6
## 25 26 27 28 29 30 31 32
## 443651.1 571607.6 571607.6 571607.6 571607.6 571607.6 443651.1 571607.6
## 33 34 35 36 37 38 39 40
## 443651.1 443651.1 443651.1 571607.6 443651.1 443651.1 571607.6 443651.1
## 41 42 43 44 45 46 47 48
## 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1
## 49 50 51 52 53 54 55 56
## 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1
## 57 58 59 60 61 62 63 64
## 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1
## 65 66 67 68 69 70 71 72
## 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1 443651.1
## 73 74 75 76 77 78 79 80
## 443651.1 289701.3 289701.3 289701.3 443651.1 289701.3 289701.3 289701.3
## 81 82 83 84 85 86 87 88
## 289701.3 289701.3 289701.3 289701.3 289701.3 289701.3 289701.3 289701.3
## 89 90 91 92 93 94 95 96
## 289701.3 289701.3 289701.3 154609.2 154609.2 154609.2 154609.2 154609.2
## 97 98 99 100
## 154609.2 154609.2 154609.2 154609.2
```

```
#rmse & r2 for decision tree train  
eval_results(tr$List.Price, exp(modelv), tr)
```

```
##          RMSE    Rsquare  
## 1 132441.6 0.8687295
```

```
#rmse & r2 for decision tree test.  
eval_results(ms$List.Price, exp(modelx), ms)
```

```
##          RMSE    Rsquare  
## 1 47688.48 0.8341307
```

```
##### all metrics for test #####
```

```
#metrics for test prediction ( linear reg)  
eval_results(ms$List.Price, exp(pred_test1), ms)
```

```
##          RMSE    Rsquare  
## 1 59068.47 0.7455219
```

```
#test metrics for rf  
eval_results(ms$List.Price, exp(pred3), ms)
```

```
##          RMSE    Rsquare  
## 1 14312.61 0.9850591
```

```
#test metrics for dt  
eval_results(ms$List.Price, exp(modelx), ms)
```

```
##          RMSE    Rsquare  
## 1 47688.48 0.8341307
```