

# Lab 9

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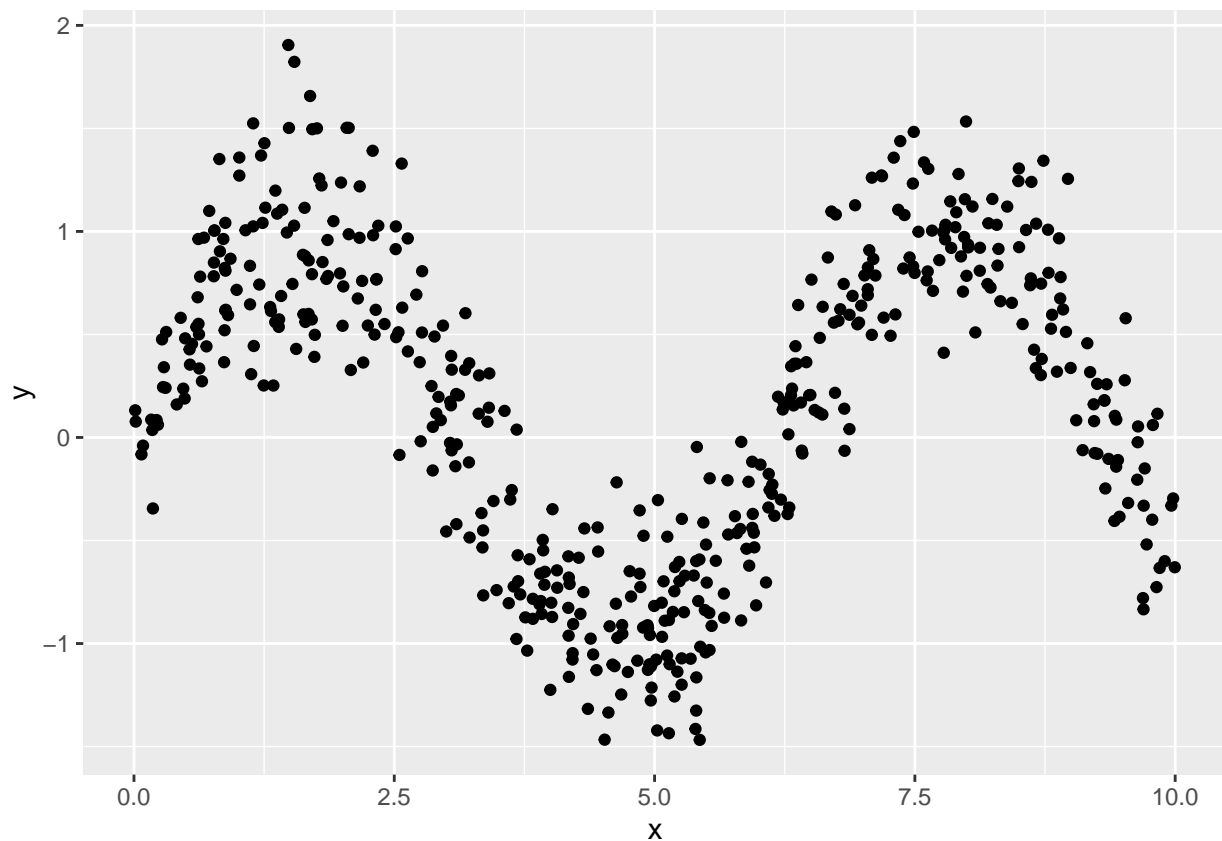
Here we will learn about trees, bagged trees and random forests. You can use the **YARF** package if it works, otherwise, use the **randomForest** package (the standard).

Let's take a look at the simulated sine curve data from practice lecture 12. Below is the code for the data generating process:

```
rm(list = ls())
n = 500
sigma = 0.3
x_min = 0
x_max = 10
f_x = function(x){sin(x)}
y_x = function(x, sigma){f_x(x) + rnorm(n, 0, sigma)}
x_train = runif(n, x_min, x_max)
y_train = y_x(x_train, sigma)
```

Plot an example training dataset of size 500:

```
pacman::p_load(ggplot2)
ggplot(data.frame(x=x_train, y = y_train)) +
  geom_point(aes(x = x, y = y))
```



Create a test set of size 500 as well

```
x_test = runif(n, x_min, x_max)
y_test = y_x(x_test, sigma)
```

Locate the optimal node size hyperparameter for the regression tree model. I believe you can use `randomForest` here by setting `ntree = 1`, `replace = FALSE`, `sampsize = n` (`mtry` is already set to be 1 because there is only one feature) and then you can set `nodesize`. Plot node size by out of sample SE.

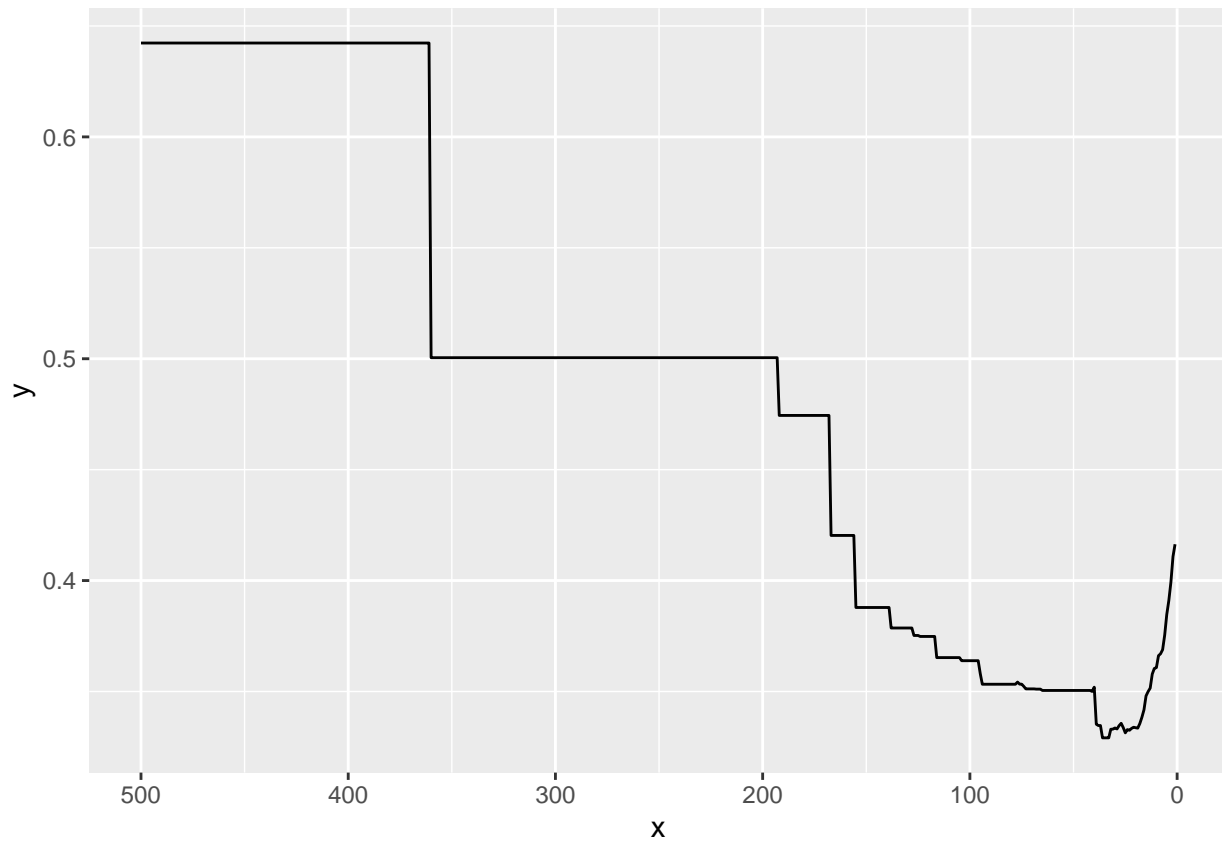
```
pacman::p_load(randomForest)
```

```
node_sizes = 1:n
```

```
se_by_node_size = array(NA, dim = length(node_sizes))
```

```
for(i in 1:length(node_sizes)){
  rf_mod = randomForest(data.frame(x = x_train), y = y_train, ntree = 1, replace = FALSE, sampsize = n,
    y_hat_test = predict(rf_mod, data.frame(x = x_test))
  se_by_node_size[i] = sd(y_test - y_hat_test)
}
```

```
ggplot(data.frame(x = node_sizes, y = se_by_node_size)) +
  geom_line(aes(x = x, y = y)) +
  scale_x_reverse()
```



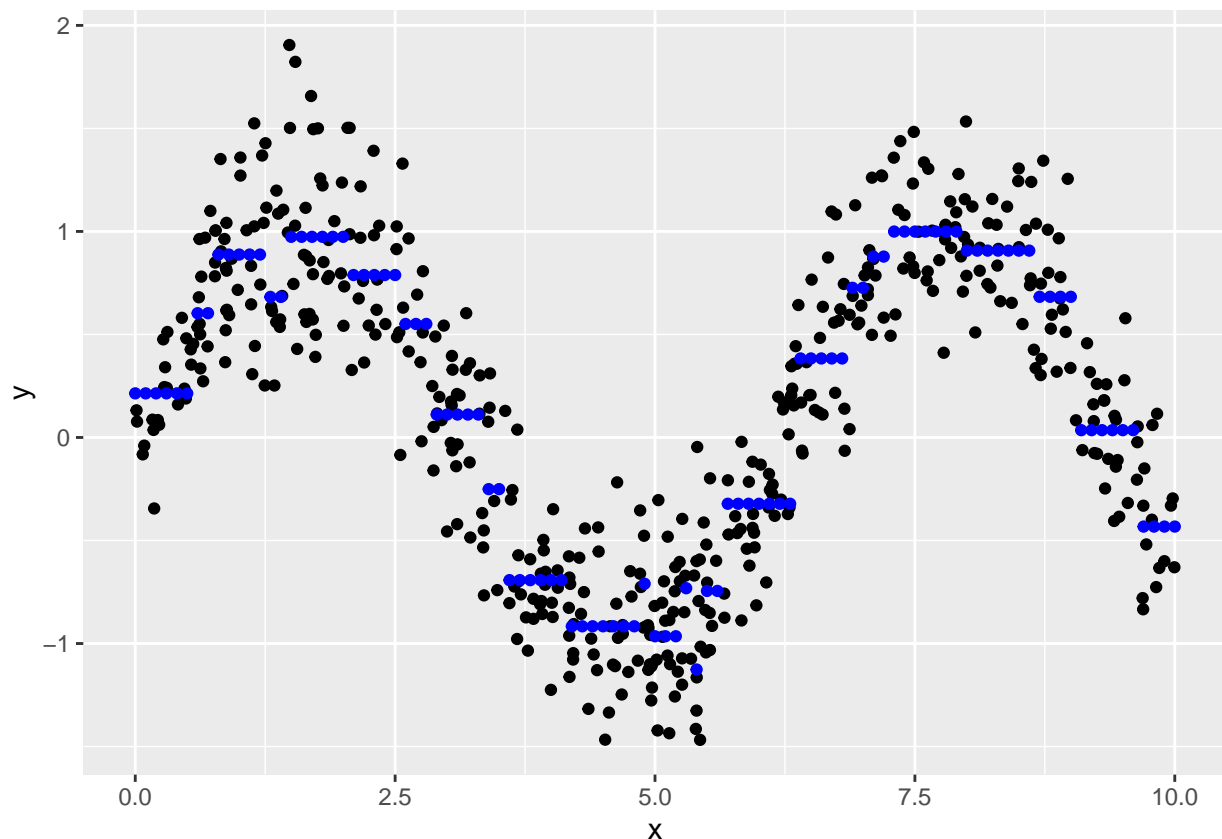
```
which.min(se_by_node_size)
```

```
## [1] 33
```

Plot the regression tree model with the optimal node size.

```
rf_mod = randomForest(data.frame(x = x_train), y = y_train, ntree = 1, replace = FALSE, sampsize = n,
  resolution = 0.1
x_grid = seq(from = x_min, to = x_max, by = resolution)
g_x = predict(rf_mod, data.frame(x = x_grid))

ggplot(data.frame(x = x_grid, y = g_x)) +
  aes(x = x, y = y) +
  geom_point(data = data.frame(x = x_train, y = y_train)) +
  geom_point(color = "blue")
```



Provide the bias-variance decomposition of this DGP fit with this model. It is a lot of code, but it is in the practice lectures. If your three numbers don't add up within two significant digits, increase your resolution.

```
n_train = 20
n_test = 1000
Nsim = 1000

training_gs = matrix(NA, nrow = Nsim, ncol = 2)
x_trains = matrix(NA, nrow = Nsim, ncol = n_train)
y_trains = matrix(NA, nrow = Nsim, ncol = n_train)
all_oos_residuals = matrix(NA, nrow = Nsim, ncol = n_test)
for (nsim in 1 : Nsim){
  #simulate dataset  $\mathbb{D}$ 
  x_train = runif(n_train, x_min, x_max)
  delta_train = rnorm(n_train, 0, sigma) #Assumption I: mean zero and Assumption II: homoskedastic
  y_train = f_x(x_train) + delta_train
  x_trains[nsim, ] = x_train
  y_trains[nsim, ] = y_train

  #fit a model g | x's, delta's and save it
  g_model = lm(y_train ~ ., data.frame(x = x_train))
  training_gs[nsim, ] = coef(g_model)

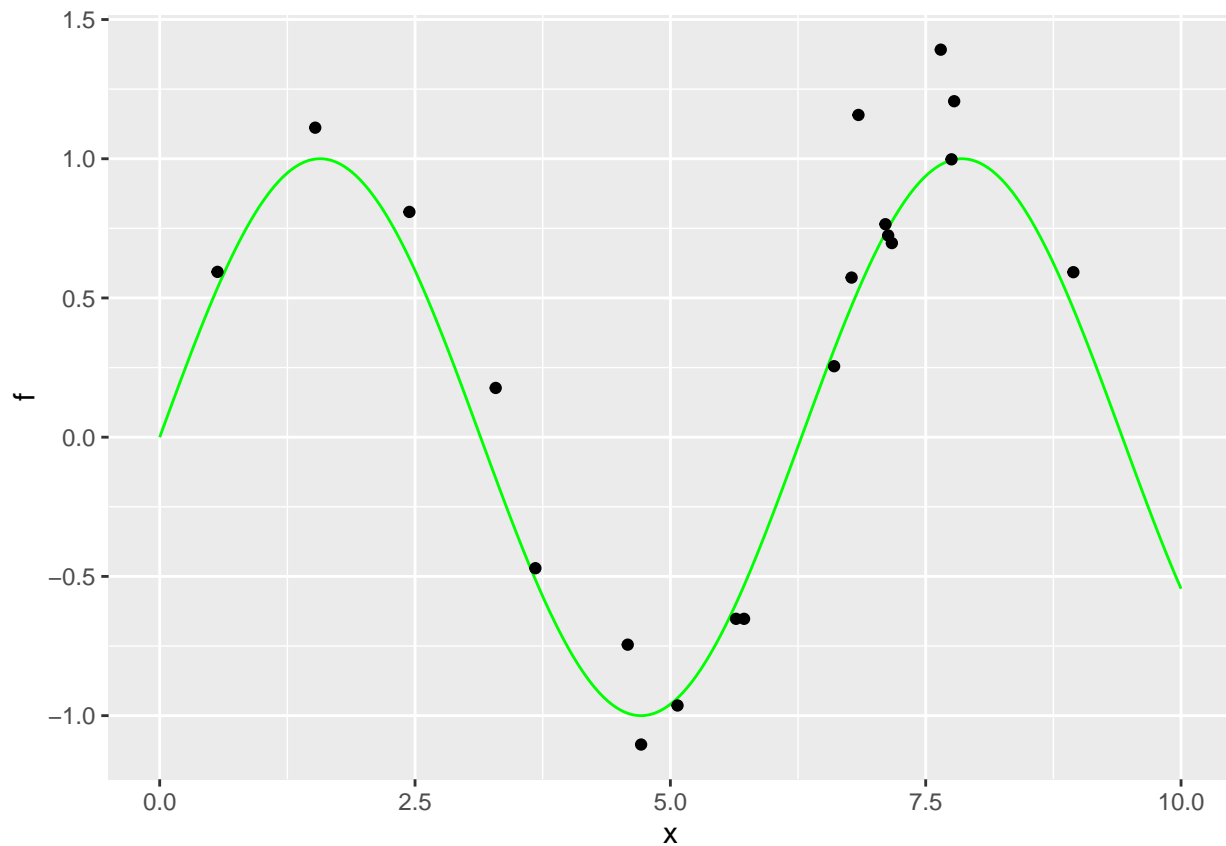
  #generate oos dataset according to the same data generating process (DGP)
  x_test = runif(n_test, x_min, x_max)
  delta_test = rnorm(n_test, 0, sigma)
  y_test = f_x(x_test) + delta_test
  #predict oos using the model and save the oos residuals
}
```

```

y_hat_test = predict(g_model, data.frame(x = x_test))
all_oos_residuals[nsim, ] = y_test - y_hat_test
}

pacman::p_load(ggplot2)
resolution = 10000
x = seq(x_min, x_max, length.out = resolution)
f_x_df = data.frame(x = x, f = f_x(x))
ggplot(f_x_df, aes(x, f)) +
  geom_line(col = "green") +
  geom_point(aes(x, y), data = data.frame(x = x_trains[1, ], y = y_trains[1, ]))

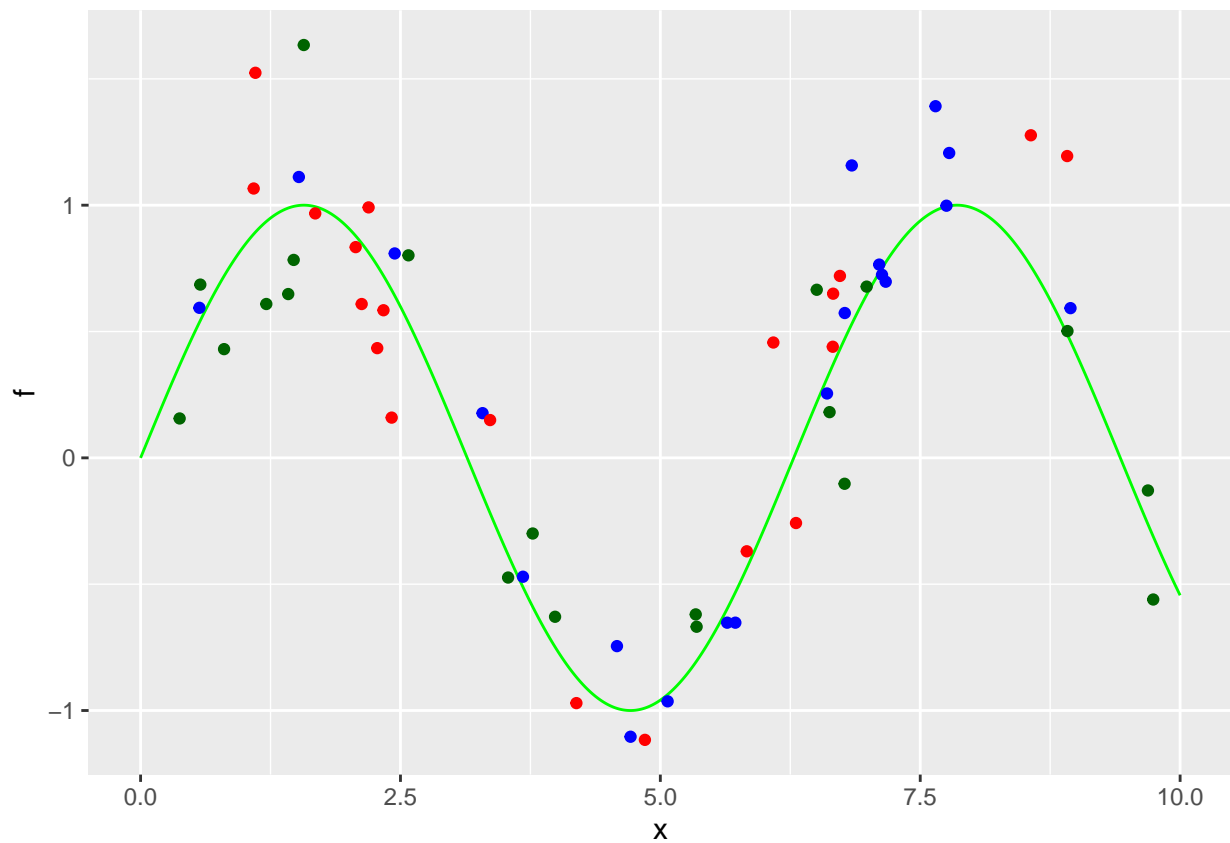
```



```

ggplot(f_x_df, aes(x, f)) +
  geom_line(col = "green") +
  geom_point(aes(x, y), data = data.frame(x = x_trains[1, ], y = y_trains[1, ]), col = "blue") +
  geom_point(aes(x, y), data = data.frame(x = x_trains[2, ], y = y_trains[2, ]), col = "darkgreen") +
  geom_point(aes(x, y), data = data.frame(x = x_trains[3, ], y = y_trains[3, ]), col = "red")

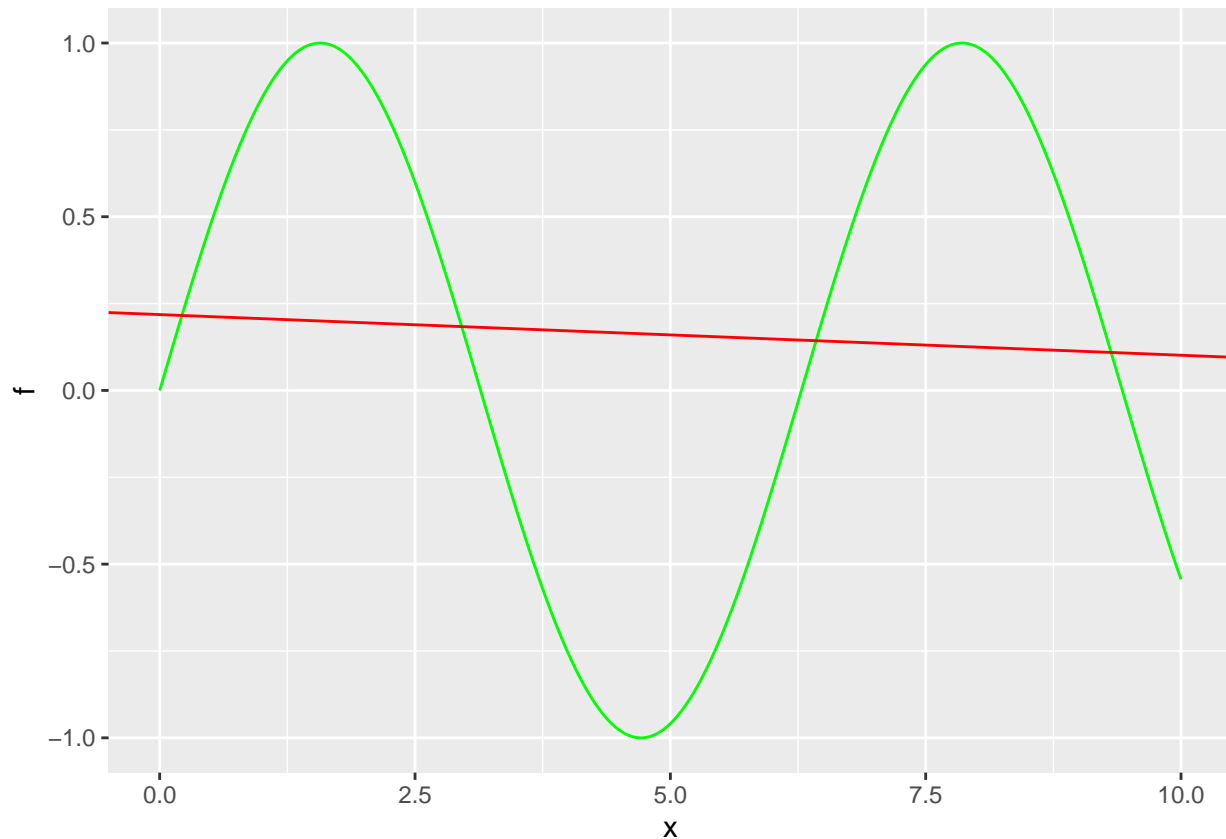
```



```
mse = mean(c(all_oos_residuals)^2)
mse
```

```
## [1] 0.5854325
```

```
g_average = colMeans(training_gs)
ggplot(f_x_df, aes(x, f)) +
  geom_line(col = "green") +
  geom_abline(intercept = g_average[1], slope = g_average[2], col = "red") +
  ylim(-1, 1)
```



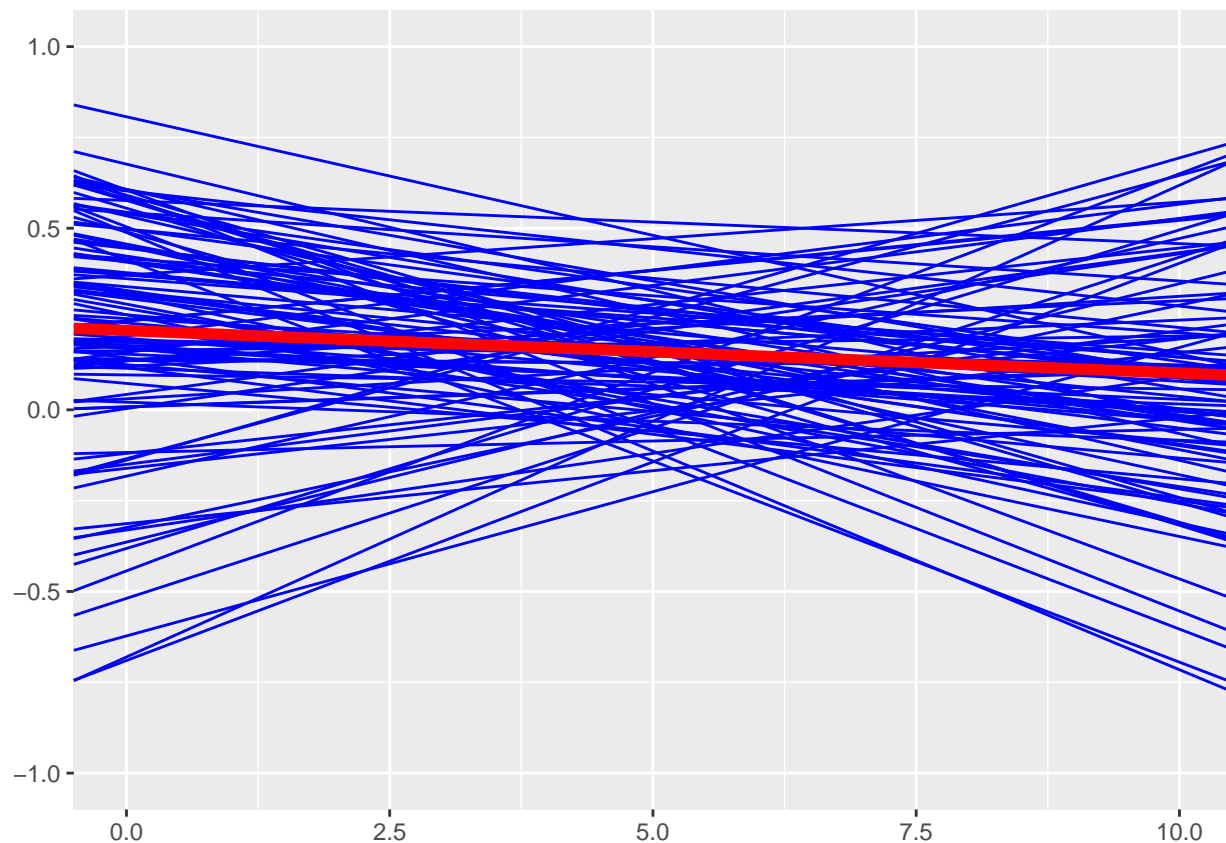
```
x = seq(x_min, x_max, length.out = resolution)
g_avg_x = g_average[1] + g_average[2] * x
f = sin(x)
biases = f - g_avg_x
expe_bias_g_sq = mean(biases^2)
expe_bias_g_sq
```

```
## [1] 0.4418992
```

```
plot_obj = ggplot() +
  xlim(x_min, x_max) + ylim(x_min^2, x_max^2)
for (nsim in 1 : min(Nsim, 100)){ #otherwise takes too long
  plot_obj = plot_obj + geom_abline(intercept = training_gs[nsim, 1], slope = training_gs[nsim, 2], col = "red", lwd = 2)
}
```

```
plot_obj +
  geom_abline(intercept = g_average[1], slope = g_average[2], col = "red", lwd = 2) +
  ylim(-1, 1)
```

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



```
# geom_line(data = f_x_df, aes(x, f), col = "green", size = 1)
```

```
x = seq(x_min, x_max, length.out = resolution)
expe_g_x = g_average[1] + g_average[2] * x
var_x_s = array(NA, Nsim)
for (nsim in 1 : Nsim){
  g_x = training_gs[nsim, 1] + training_gs[nsim, 2] * x
  var_x_s[nsim] = mean((g_x - expe_g_x)^2)
}
```

```
expe_var_g = mean(var_x_s)
expe_var_g
```

```
## [1] 0.05278441
```

```
mse
```

```
## [1] 0.5854325
```

```
sigma^2
```

```
## [1] 0.09
```

```
expe_bias_g_sq
```

```
## [1] 0.4418992
```

```
expe_var_g
```

```
## [1] 0.05278441
```



```
sigma^2 + expe_bias_g_sq + expe_var_g
```

```
## [1] 0.5846836
```

```
rm(list = ls())
```

Take a sample of  $n = 2000$  observations from the diamonds data.

```
pacman::p_load(dplyr)
diamond_samp = diamonds %>%
  sample_n(2000)
```

find the oob s\_e for a RF model using 1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000 trees. If you are using the `randomForest` package, you can calculate oob residuals via `e_oob = y_train - rf_mod$predicted`. Plot it.

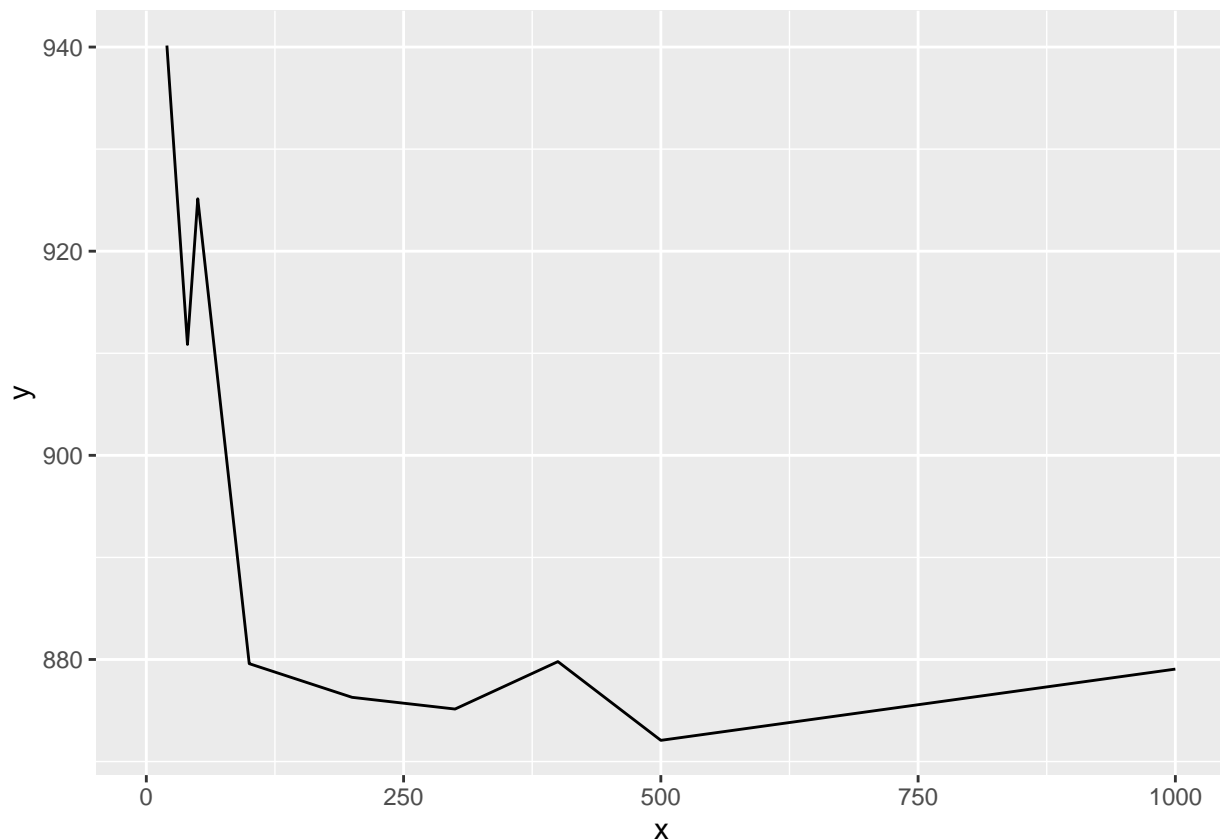
```
num_trees = c(1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000)

oob_se_by_num_trees = array(NA, length(num_trees))

for(i in 1:length(num_trees)){
  rf_model = randomForest(price ~ ., data = diamond_samp, ntree = num_trees[i])
  oob_se_by_num_trees[i] = sd(diamond_samp$price - rf_model$predicted)
}

ggplot(data.frame(x = num_trees, y = oob_se_by_num_trees)) +
  geom_line(aes(x = x, y = y))
```

```
## Warning: Removed 4 row(s) containing missing values (geom_path).
```



Using the diamonds data, find the oob s\_e for a bagged-tree model using 1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000 trees. If you are using the **randomForest** package, you can create the bagged tree model via setting an argument within the RF constructor function.

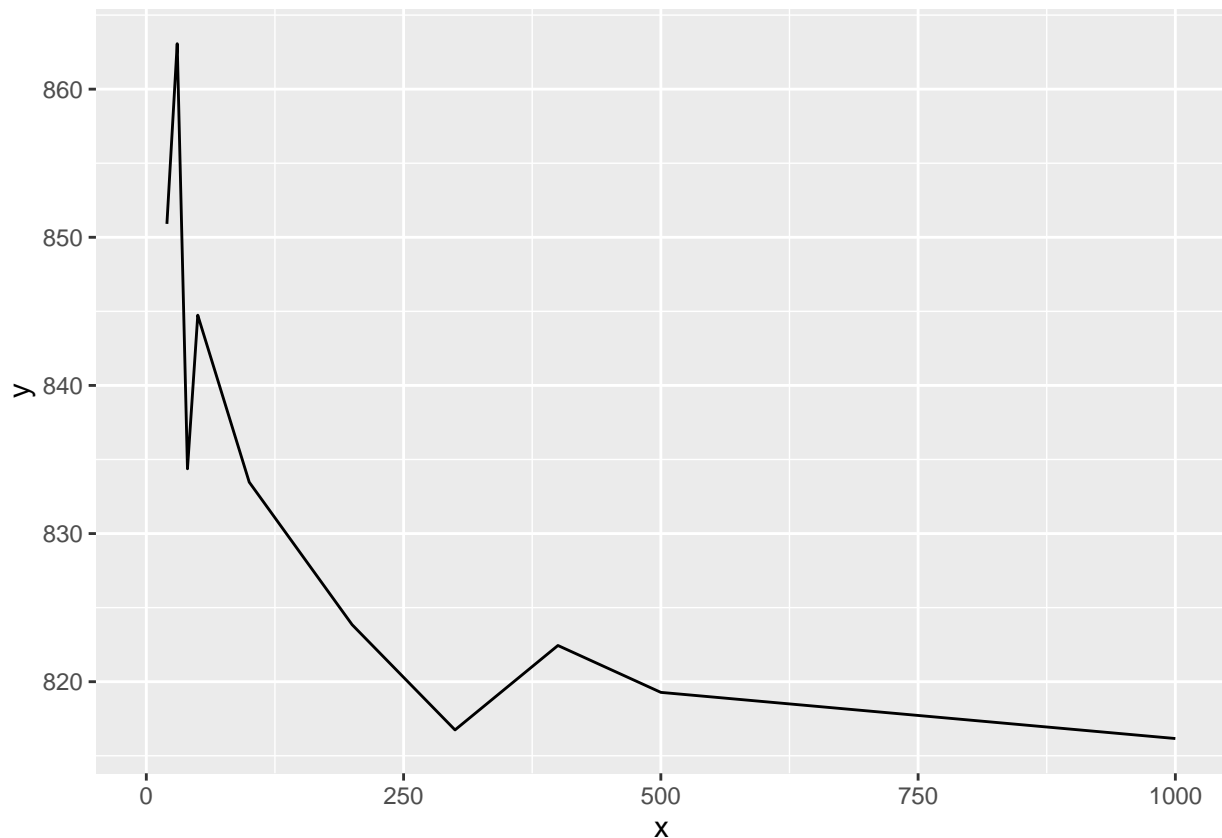
```
num_trees = c(1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000)

oob_se_by_num_trees_bag = array(NA, length(num_trees))

for(i in 1:length(num_trees)){
  rf_model = randomForest(price ~ ., data = diamond_samp, ntree = num_trees[i], mtry = ncol(diamond_samp)
  oob_se_by_num_trees_bag[i] = sd(diamond_samp$price - rf_model$predicted)
}

ggplot(data.frame(x = num_trees, y = oob_se_by_num_trees_bag)) +
  geom_line(aes(x = x, y = y))
```

## Warning: Removed 4 row(s) containing missing values (geom\_path).



What is the percentage gain / loss in performance of the RF model vs bagged trees model?

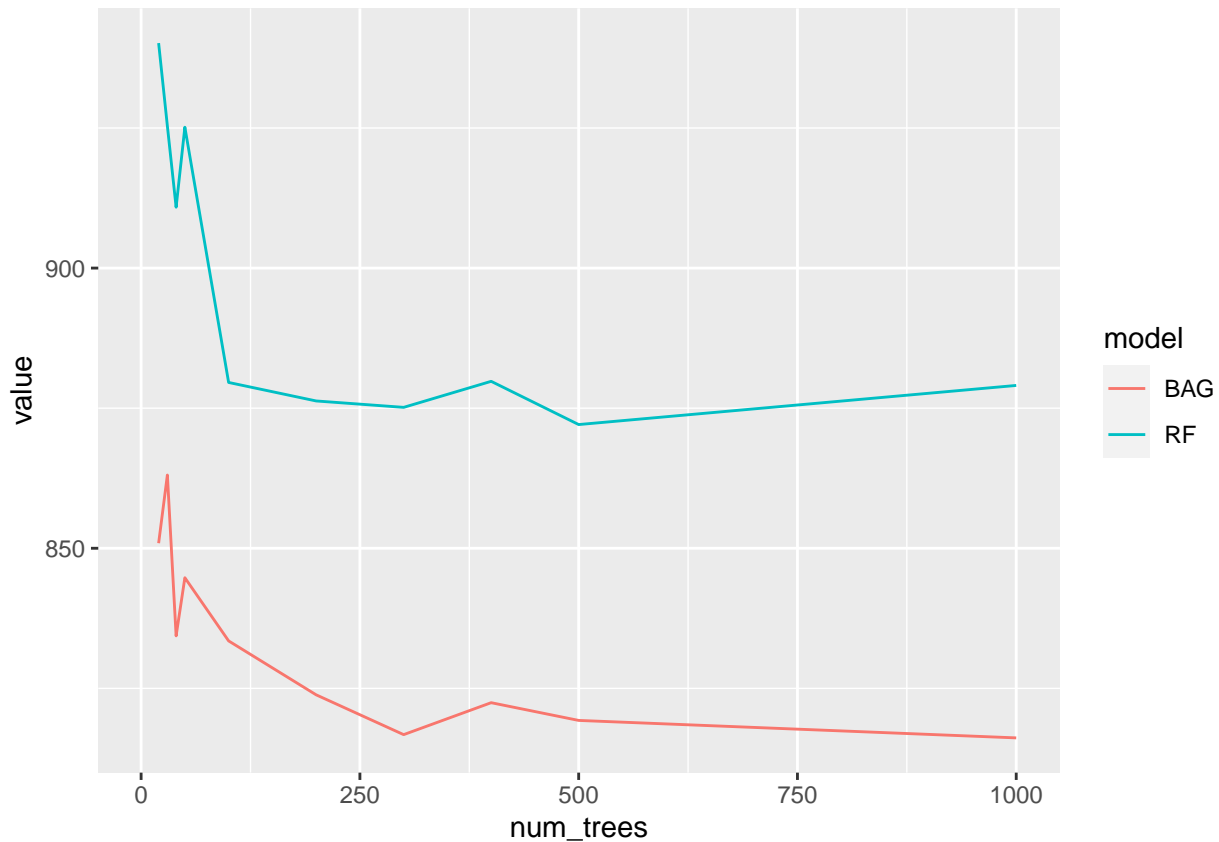
```
((oob_se_by_num_trees - oob_se_by_num_trees_bag) / oob_se_by_num_trees_bag) * 100
```

```
## [1]      NA      NA      NA      NA 10.488154  7.217082  9.167910
## [8]  9.516908  5.533453  6.365450  7.150354  6.972887  6.444211  7.706014
```

Plot oob s\_e by number of trees for both RF and bagged trees.

```
ggplot(rbind(data.frame(num_trees = num_trees, value = oob_se_by_num_trees, model = "RF" ), data.frame(
  geom_line(aes(x = num_trees, y = value, color = model))
```

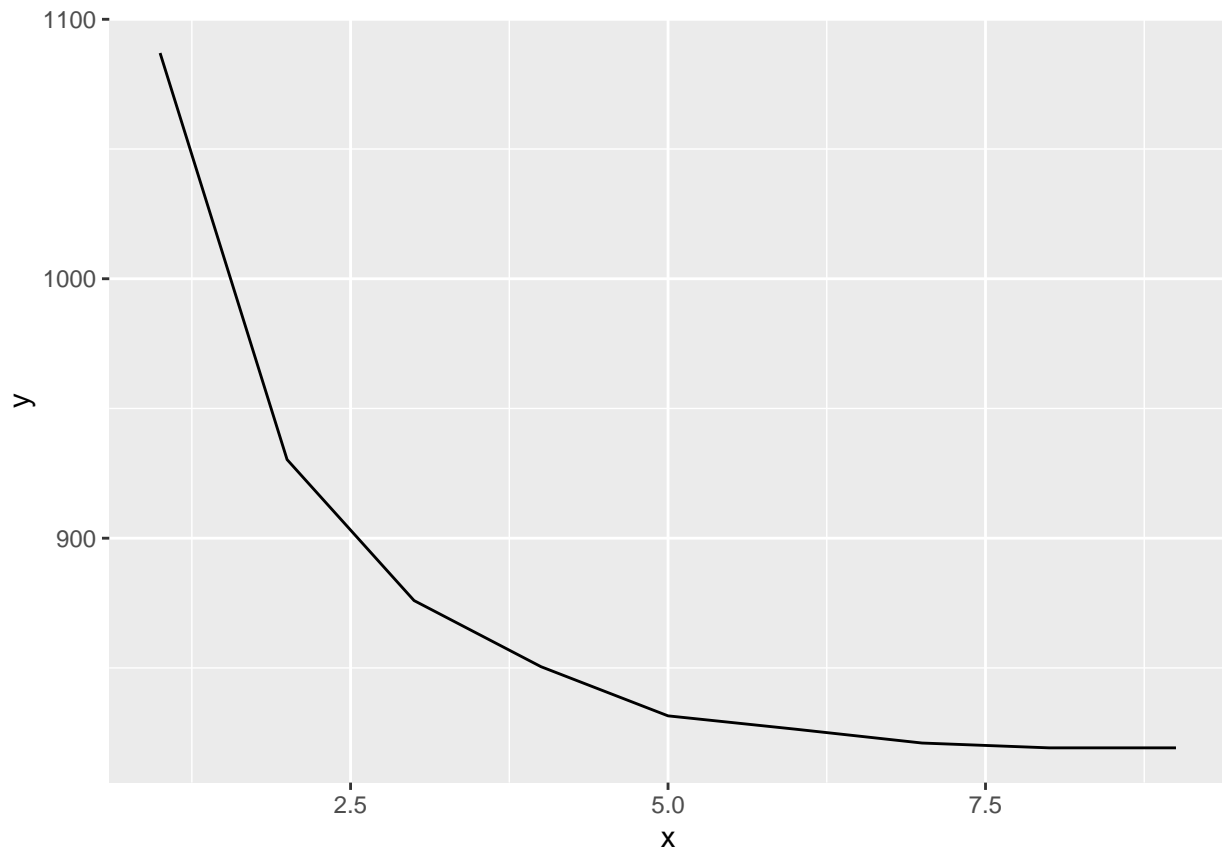
```
## Warning: Removed 8 row(s) containing missing values (geom_path).
```



Build RF models for 500 trees using different `mtry` values: 1, 2, ... the maximum. That maximum will be the number of features assuming that we do not binarize categorical features if you are using `randomForest` or the number of features assuming binarization of the categorical features if you are using `YARF`. Calculate bootstrap `s_e` for all `mtry` values.

```
mtrys = 1:(ncol(diamond_samp)-1)
oob_se_by_mtrys= array(NA, length(mtrys))
for(i in 1:length(mtrys)){
  rf_mod = randomForest(price ~., data = diamond_samp, mtry = mtrys[i])
  oob_se_by_mtrys[i] = sd(diamond_samp$price - rf_mod$predicted)
}

ggplot(data.frame(x = mtrys, y = oob_se_by_mtrys)) +
  geom_line(aes(x = x, y = y))
```



```
rm(list = ls())
```

Take a sample of  $n = 2000$  observations from the adult data.

```
pacman::p_load_gh("coatles/ucidata")
data(adult)
adult = na.omit(adult)
adult_samp = adult %>%
  sample_n(2000)
```

Using the adult data, find the oob misclassification error for an RF model using 1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000 trees.

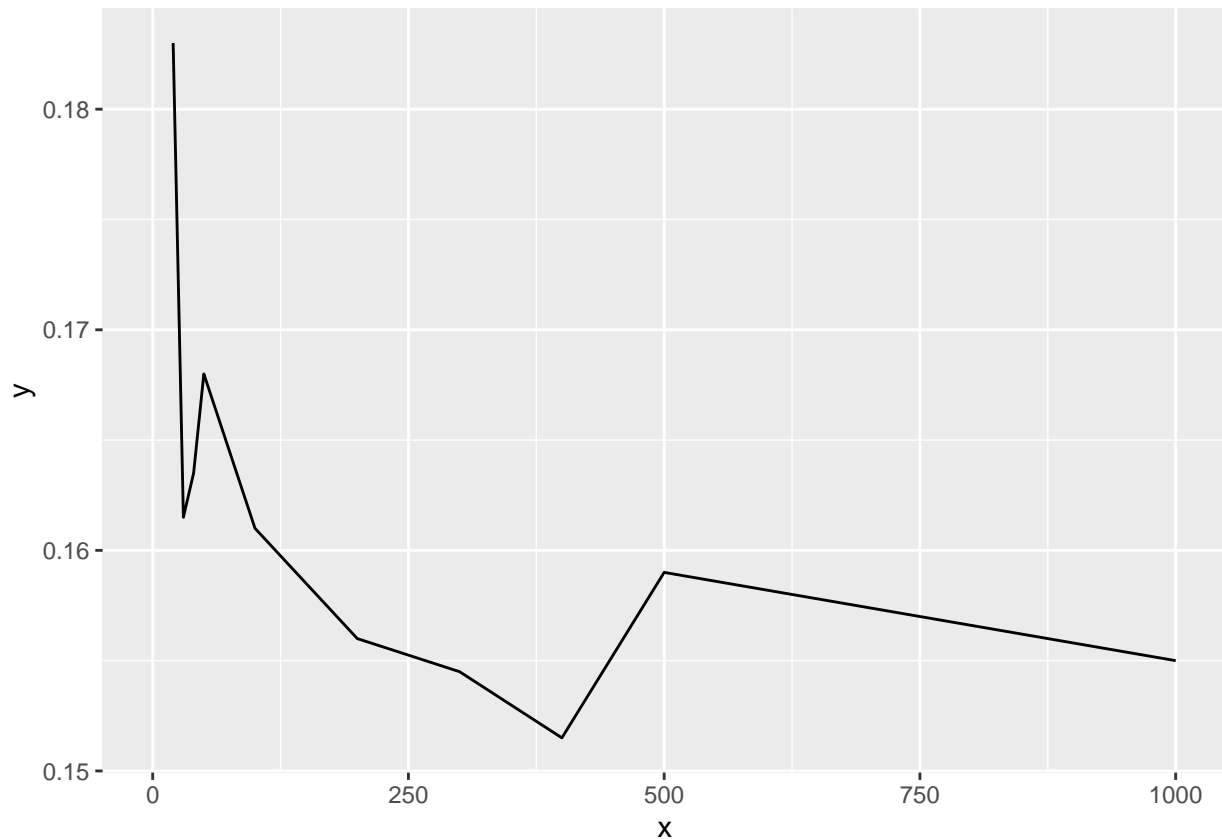
```
num_trees = c(1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000)

oob_me_by_num_trees = array(NA, length(num_trees))

for(i in 1:length(num_trees)){
  rf_model = randomForest(income ~ ., data = adult_samp, ntree = num_trees[i])
  oob_me_by_num_trees[i] = mean(adult_samp$income != rf_model$predicted)
}

ggplot(data.frame(x = num_trees, y = oob_me_by_num_trees)) +
  geom_line(aes(x = x, y = y))
```

```
## Warning: Removed 4 row(s) containing missing values (geom_path).
```



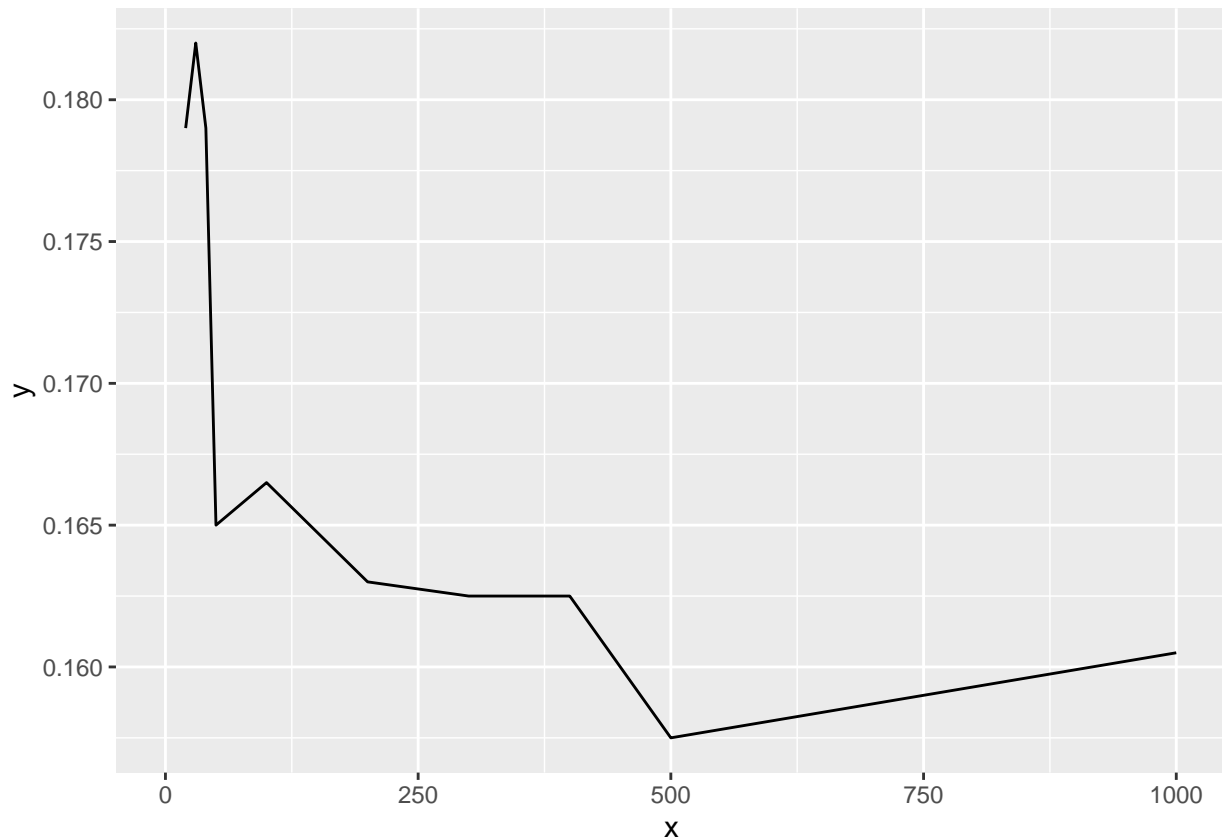
Using the adult data, find the oob misclassification error for a bagged-tree model using 1, 2, 5, 10, 20, 30, 40, 50, 100, 200, 300, 400, 500, 1000 trees.

```
oob_me_by_num_trees_bag = array(NA, length(num_trees))

for(i in 1:length(num_trees)){
  rf_model = randomForest(income ~ ., data = adult_samp, ntree = num_trees[i], mtry = ncol(adult_samp)
  oob_me_by_num_trees_bag[i] = mean(adult_samp$income != rf_model$predicted)
}

ggplot(data.frame(x = num_trees, y = oob_me_by_num_trees_bag)) +
  geom_line(aes(x = x, y = y))
```

## Warning: Removed 4 row(s) containing missing values (geom\_path).



What is the percentage gain / loss in performance of the RF model vs bagged trees model?

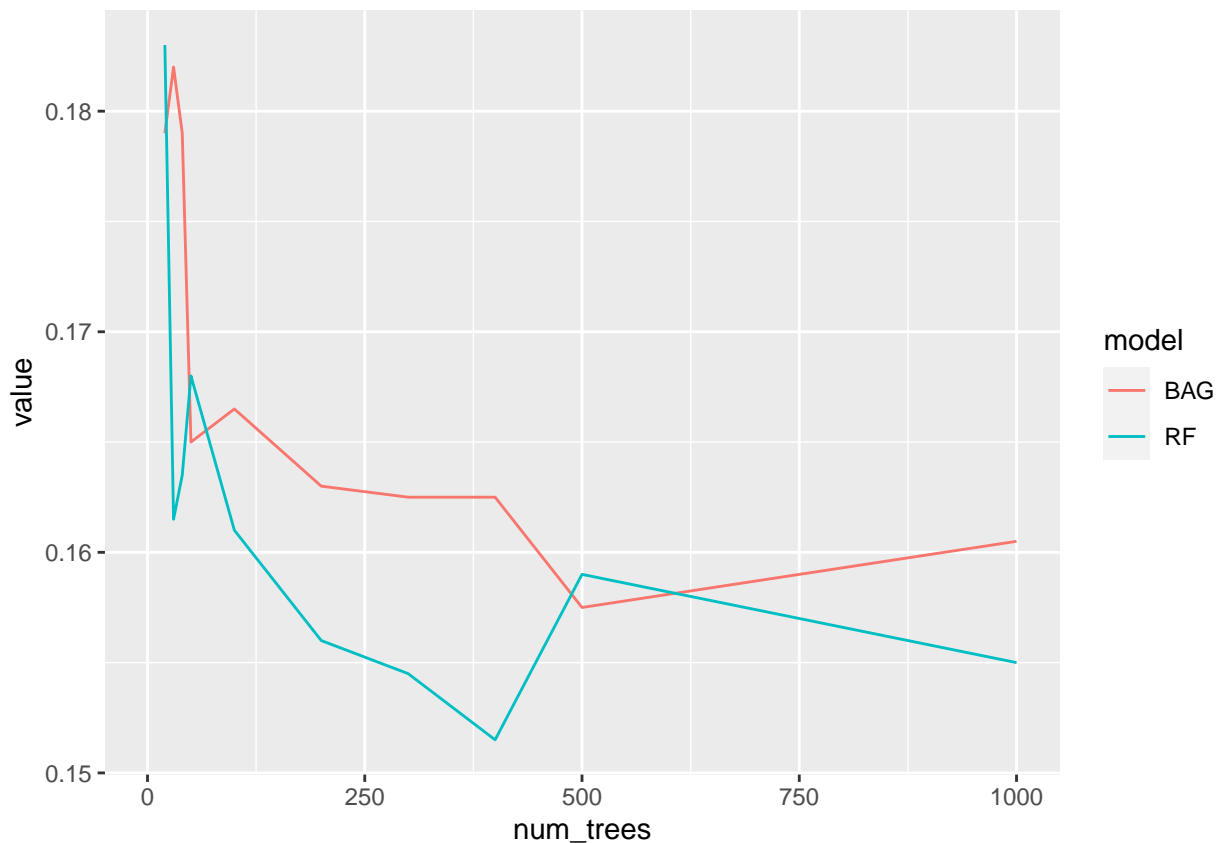
```
((oob_me_by_num_trees - oob_me_by_num_trees_bag) / oob_me_by_num_trees_bag) * 100
```

```
## [1]      NA      NA      NA      NA  2.234637 -11.263736
## [7] -8.659218  1.818182 -3.303303 -4.294479 -4.923077 -6.769231
## [13]  0.952381 -3.426791
```

Plot oob misclassification error by number of trees for both RF and bagged trees.

```
ggplot(rbind(data.frame(num_trees = num_trees, value = oob_me_by_num_trees, model = "RF" ), data.frame(
  geom_line(aes(x = num_trees, y = value, color = model))
```

```
## Warning: Removed 8 row(s) containing missing values (geom_path).
```

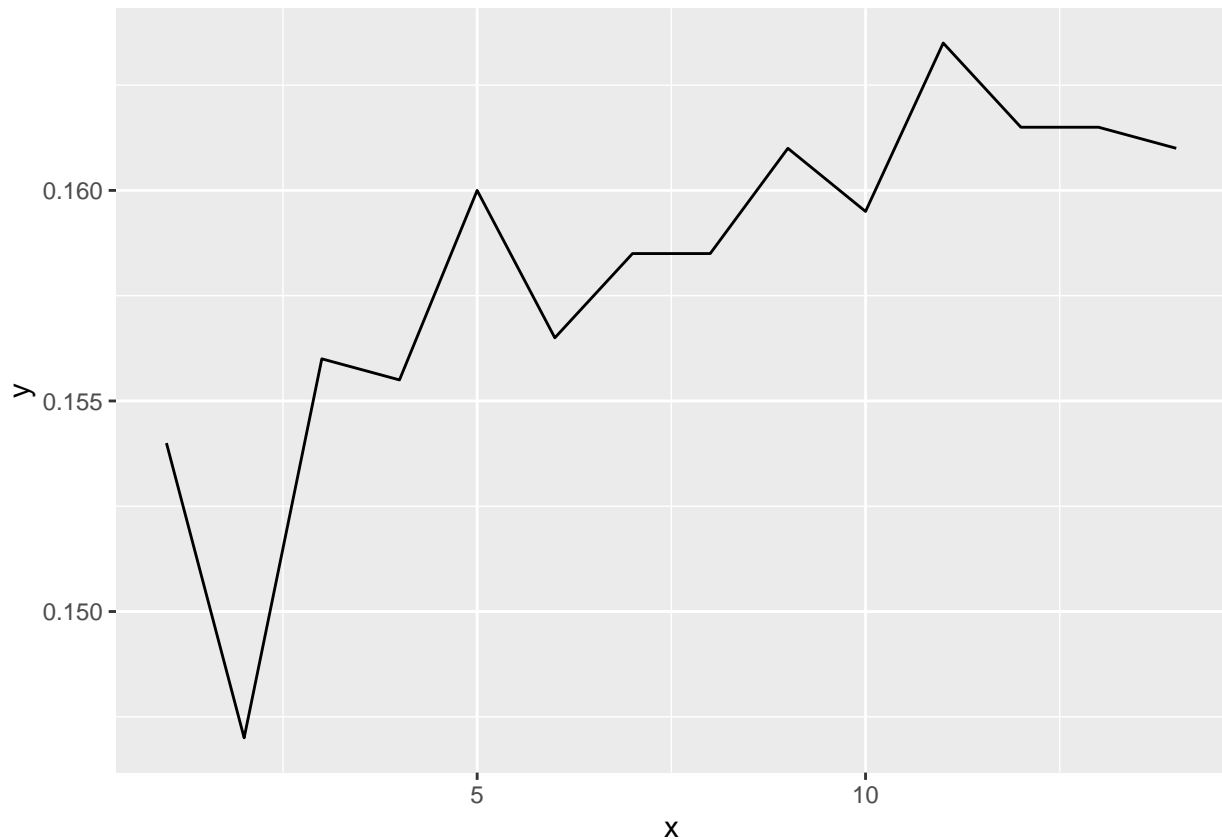


Build RF models for 500 trees using different `mtry` values: 1, 2, ... the maximum (see above as maximum is defined by the specific RF algorithm implementation).

```
mtrys = 1:(ncol(adult_samp)-1)
oob_me_by_mtrys= array(NA, length(mtrys))
for(i in 1:length(mtrys)){
  rf_model = randomForest(income ~., data = adult_samp, mtry = mtrys[i])
  oob_me_by_mtrys[i] = mean(adult_samp$income != rf_model$predicted)
}
```

Plot oob misclassification error by `mtry`.

```
ggplot(data.frame(x = mtrys, y = oob_me_by_mtrys)) +
  geom_line(aes(x = x, y = y))
```



```
rm(list = ls())
```

Write a function `random_bagged_ols` which takes as its arguments `X` and `y` with further arguments `num_ols_models` defaulted to 100 and `mtry` defaulted to `NULL` which then gets set within the function to be 50% of available features. This argument builds an OLS on a bootstrap sample of the data and uses only `mtry` < `p` of the available features. The function then returns all the `lm` models as a list with size `num_ols_models`.

```
random_bagged_ols = function(X, y, num_ols_models = 100, mtry = NULL){
  if (is.null(mtry) || mtry >= p){
    mtry = (.5)(ncol(X))
  }
  lm_mods = array(NA, num_ols_models)
  n_train = (.10)(nrow(X))

  for(i in 1:num_ols_models){
    bootstrap_indices = sample(1:n_train, replace = TRUE)
    selected_features = sample(1:mtry, replace = TRUE)
    lm_mods[i] = lm(y[bootstrap_indices] ~ X[, selected_features], X[bootstrap_indices])
  }

  lm_mods
}
```

Load up the Boston Housing Data and separate into `X` and `y`.

```
pacman::p_load(MASS)
MASS::Boston
```

```
##          crim      zn indus chas      nox      rm      age      dis rad tax ptratio  black
```



## 1	0.00632	18.0	2.31	0	0.5380	6.575	65.2	4.0900	1	296	15.3	396.90
## 2	0.02731	0.0	7.07	0	0.4690	6.421	78.9	4.9671	2	242	17.8	396.90
## 3	0.02729	0.0	7.07	0	0.4690	7.185	61.1	4.9671	2	242	17.8	392.83
## 4	0.03237	0.0	2.18	0	0.4580	6.998	45.8	6.0622	3	222	18.7	394.63
## 5	0.06905	0.0	2.18	0	0.4580	7.147	54.2	6.0622	3	222	18.7	396.90
## 6	0.02985	0.0	2.18	0	0.4580	6.430	58.7	6.0622	3	222	18.7	394.12
## 7	0.08829	12.5	7.87	0	0.5240	6.012	66.6	5.5605	5	311	15.2	395.60
## 8	0.14455	12.5	7.87	0	0.5240	6.172	96.1	5.9505	5	311	15.2	396.90
## 9	0.21124	12.5	7.87	0	0.5240	5.631	100.0	6.0821	5	311	15.2	386.63
## 10	0.17004	12.5	7.87	0	0.5240	6.004	85.9	6.5921	5	311	15.2	386.71
## 11	0.22489	12.5	7.87	0	0.5240	6.377	94.3	6.3467	5	311	15.2	392.52
## 12	0.11747	12.5	7.87	0	0.5240	6.009	82.9	6.2267	5	311	15.2	396.90
## 13	0.09378	12.5	7.87	0	0.5240	5.889	39.0	5.4509	5	311	15.2	390.50
## 14	0.62976	0.0	8.14	0	0.5380	5.949	61.8	4.7075	4	307	21.0	396.90
## 15	0.63796	0.0	8.14	0	0.5380	6.096	84.5	4.4619	4	307	21.0	380.02
## 16	0.62739	0.0	8.14	0	0.5380	5.834	56.5	4.4986	4	307	21.0	395.62
## 17	1.05393	0.0	8.14	0	0.5380	5.935	29.3	4.4986	4	307	21.0	386.85
## 18	0.78420	0.0	8.14	0	0.5380	5.990	81.7	4.2579	4	307	21.0	386.75
## 19	0.80271	0.0	8.14	0	0.5380	5.456	36.6	3.7965	4	307	21.0	288.99
## 20	0.72580	0.0	8.14	0	0.5380	5.727	69.5	3.7965	4	307	21.0	390.95
## 21	1.25179	0.0	8.14	0	0.5380	5.570	98.1	3.7979	4	307	21.0	376.57
## 22	0.85204	0.0	8.14	0	0.5380	5.965	89.2	4.0123	4	307	21.0	392.53
## 23	1.23247	0.0	8.14	0	0.5380	6.142	91.7	3.9769	4	307	21.0	396.90
## 24	0.98843	0.0	8.14	0	0.5380	5.813	100.0	4.0952	4	307	21.0	394.54
## 25	0.75026	0.0	8.14	0	0.5380	5.924	94.1	4.3996	4	307	21.0	394.33
## 26	0.84054	0.0	8.14	0	0.5380	5.599	85.7	4.4546	4	307	21.0	303.42
## 27	0.67191	0.0	8.14	0	0.5380	5.813	90.3	4.6820	4	307	21.0	376.88
## 28	0.95577	0.0	8.14	0	0.5380	6.047	88.8	4.4534	4	307	21.0	306.38
## 29	0.77299	0.0	8.14	0	0.5380	6.495	94.4	4.4547	4	307	21.0	387.94
## 30	1.00245	0.0	8.14	0	0.5380	6.674	87.3	4.2390	4	307	21.0	380.23
## 31	1.13081	0.0	8.14	0	0.5380	5.713	94.1	4.2330	4	307	21.0	360.17
## 32	1.35472	0.0	8.14	0	0.5380	6.072	100.0	4.1750	4	307	21.0	376.73
## 33	1.38799	0.0	8.14	0	0.5380	5.950	82.0	3.9900	4	307	21.0	232.60
## 34	1.15172	0.0	8.14	0	0.5380	5.701	95.0	3.7872	4	307	21.0	358.77
## 35	1.61282	0.0	8.14	0	0.5380	6.096	96.9	3.7598	4	307	21.0	248.31
## 36	0.06417	0.0	5.96	0	0.4990	5.933	68.2	3.3603	5	279	19.2	396.90
## 37	0.09744	0.0	5.96	0	0.4990	5.841	61.4	3.3779	5	279	19.2	377.56
## 38	0.08014	0.0	5.96	0	0.4990	5.850	41.5	3.9342	5	279	19.2	396.90
## 39	0.17505	0.0	5.96	0	0.4990	5.966	30.2	3.8473	5	279	19.2	393.43
## 40	0.02763	75.0	2.95	0	0.4280	6.595	21.8	5.4011	3	252	18.3	395.63
## 41	0.03359	75.0	2.95	0	0.4280	7.024	15.8	5.4011	3	252	18.3	395.62
## 42	0.12744	0.0	6.91	0	0.4480	6.770	2.9	5.7209	3	233	17.9	385.41
## 43	0.14150	0.0	6.91	0	0.4480	6.169	6.6	5.7209	3	233	17.9	383.37
## 44	0.15936	0.0	6.91	0	0.4480	6.211	6.5	5.7209	3	233	17.9	394.46
## 45	0.12269	0.0	6.91	0	0.4480	6.069	40.0	5.7209	3	233	17.9	389.39
## 46	0.17142	0.0	6.91	0	0.4480	5.682	33.8	5.1004	3	233	17.9	396.90
## 47	0.18836	0.0	6.91	0	0.4480	5.786	33.3	5.1004	3	233	17.9	396.90
## 48	0.22927	0.0	6.91	0	0.4480	6.030	85.5	5.6894	3	233	17.9	392.74
## 49	0.25387	0.0	6.91	0	0.4480	5.399	95.3	5.8700	3	233	17.9	396.90
## 50	0.21977	0.0	6.91	0	0.4480	5.602	62.0	6.0877	3	233	17.9	396.90
## 51	0.08873	21.0	5.64	0	0.4390	5.963	45.7	6.8147	4	243	16.8	395.56
## 52	0.04337	21.0	5.64	0	0.4390	6.115	63.0	6.8147	4	243	16.8	393.97
## 53	0.05360	21.0	5.64	0	0.4390	6.511	21.1	6.8147	4	243	16.8	396.90
## 54	0.04981	21.0	5.64	0	0.4390	5.998	21.4	6.8147	4	243	16.8	396.90

## 55	0.01360	75.0	4.00	0 0.4100	5.888	47.6	7.3197	3 469	21.1	396.90
## 56	0.01311	90.0	1.22	0 0.4030	7.249	21.9	8.6966	5 226	17.9	395.93
## 57	0.02055	85.0	0.74	0 0.4100	6.383	35.7	9.1876	2 313	17.3	396.90
## 58	0.01432	100.0	1.32	0 0.4110	6.816	40.5	8.3248	5 256	15.1	392.90
## 59	0.15445	25.0	5.13	0 0.4530	6.145	29.2	7.8148	8 284	19.7	390.68
## 60	0.10328	25.0	5.13	0 0.4530	5.927	47.2	6.9320	8 284	19.7	396.90
## 61	0.14932	25.0	5.13	0 0.4530	5.741	66.2	7.2254	8 284	19.7	395.11
## 62	0.17171	25.0	5.13	0 0.4530	5.966	93.4	6.8185	8 284	19.7	378.08
## 63	0.11027	25.0	5.13	0 0.4530	6.456	67.8	7.2255	8 284	19.7	396.90
## 64	0.12650	25.0	5.13	0 0.4530	6.762	43.4	7.9809	8 284	19.7	395.58
## 65	0.01951	17.5	1.38	0 0.4161	7.104	59.5	9.2229	3 216	18.6	393.24
## 66	0.03584	80.0	3.37	0 0.3980	6.290	17.8	6.6115	4 337	16.1	396.90
## 67	0.04379	80.0	3.37	0 0.3980	5.787	31.1	6.6115	4 337	16.1	396.90
## 68	0.05789	12.5	6.07	0 0.4090	5.878	21.4	6.4980	4 345	18.9	396.21
## 69	0.13554	12.5	6.07	0 0.4090	5.594	36.8	6.4980	4 345	18.9	396.90
## 70	0.12816	12.5	6.07	0 0.4090	5.885	33.0	6.4980	4 345	18.9	396.90
## 71	0.08826	0.0	10.81	0 0.4130	6.417	6.6	5.2873	4 305	19.2	383.73
## 72	0.15876	0.0	10.81	0 0.4130	5.961	17.5	5.2873	4 305	19.2	376.94
## 73	0.09164	0.0	10.81	0 0.4130	6.065	7.8	5.2873	4 305	19.2	390.91
## 74	0.19539	0.0	10.81	0 0.4130	6.245	6.2	5.2873	4 305	19.2	377.17
## 75	0.07896	0.0	12.83	0 0.4370	6.273	6.0	4.2515	5 398	18.7	394.92
## 76	0.09512	0.0	12.83	0 0.4370	6.286	45.0	4.5026	5 398	18.7	383.23
## 77	0.10153	0.0	12.83	0 0.4370	6.279	74.5	4.0522	5 398	18.7	373.66
## 78	0.08707	0.0	12.83	0 0.4370	6.140	45.8	4.0905	5 398	18.7	386.96
## 79	0.05646	0.0	12.83	0 0.4370	6.232	53.7	5.0141	5 398	18.7	386.40
## 80	0.08387	0.0	12.83	0 0.4370	5.874	36.6	4.5026	5 398	18.7	396.06
## 81	0.04113	25.0	4.86	0 0.4260	6.727	33.5	5.4007	4 281	19.0	396.90
## 82	0.04462	25.0	4.86	0 0.4260	6.619	70.4	5.4007	4 281	19.0	395.63
## 83	0.03659	25.0	4.86	0 0.4260	6.302	32.2	5.4007	4 281	19.0	396.90
## 84	0.03551	25.0	4.86	0 0.4260	6.167	46.7	5.4007	4 281	19.0	390.64
## 85	0.05059	0.0	4.49	0 0.4490	6.389	48.0	4.7794	3 247	18.5	396.90
## 86	0.05735	0.0	4.49	0 0.4490	6.630	56.1	4.4377	3 247	18.5	392.30
## 87	0.05188	0.0	4.49	0 0.4490	6.015	45.1	4.4272	3 247	18.5	395.99
## 88	0.07151	0.0	4.49	0 0.4490	6.121	56.8	3.7476	3 247	18.5	395.15
## 89	0.05660	0.0	3.41	0 0.4890	7.007	86.3	3.4217	2 270	17.8	396.90
## 90	0.05302	0.0	3.41	0 0.4890	7.079	63.1	3.4145	2 270	17.8	396.06
## 91	0.04684	0.0	3.41	0 0.4890	6.417	66.1	3.0923	2 270	17.8	392.18
## 92	0.03932	0.0	3.41	0 0.4890	6.405	73.9	3.0921	2 270	17.8	393.55
## 93	0.04203	28.0	15.04	0 0.4640	6.442	53.6	3.6659	4 270	18.2	395.01
## 94	0.02875	28.0	15.04	0 0.4640	6.211	28.9	3.6659	4 270	18.2	396.33
## 95	0.04294	28.0	15.04	0 0.4640	6.249	77.3	3.6150	4 270	18.2	396.90
## 96	0.12204	0.0	2.89	0 0.4450	6.625	57.8	3.4952	2 276	18.0	357.98
## 97	0.11504	0.0	2.89	0 0.4450	6.163	69.6	3.4952	2 276	18.0	391.83
## 98	0.12083	0.0	2.89	0 0.4450	8.069	76.0	3.4952	2 276	18.0	396.90
## 99	0.08187	0.0	2.89	0 0.4450	7.820	36.9	3.4952	2 276	18.0	393.53
## 100	0.06860	0.0	2.89	0 0.4450	7.416	62.5	3.4952	2 276	18.0	396.90
## 101	0.14866	0.0	8.56	0 0.5200	6.727	79.9	2.7778	5 384	20.9	394.76
## 102	0.11432	0.0	8.56	0 0.5200	6.781	71.3	2.8561	5 384	20.9	395.58
## 103	0.22876	0.0	8.56	0 0.5200	6.405	85.4	2.7147	5 384	20.9	70.80
## 104	0.21161	0.0	8.56	0 0.5200	6.137	87.4	2.7147	5 384	20.9	394.47
## 105	0.13960	0.0	8.56	0 0.5200	6.167	90.0	2.4210	5 384	20.9	392.69
## 106	0.13262	0.0	8.56	0 0.5200	5.851	96.7	2.1069	5 384	20.9	394.05
## 107	0.17120	0.0	8.56	0 0.5200	5.836	91.9	2.2110	5 384	20.9	395.67
## 108	0.13117	0.0	8.56	0 0.5200	6.127	85.2	2.1224	5 384	20.9	387.69

## 109	0.12802	0.0	8.56	0	0.5200	6.474	97.1	2.4329	5	384	20.9	395.24
## 110	0.26363	0.0	8.56	0	0.5200	6.229	91.2	2.5451	5	384	20.9	391.23
## 111	0.10793	0.0	8.56	0	0.5200	6.195	54.4	2.7778	5	384	20.9	393.49
## 112	0.10084	0.0	10.01	0	0.5470	6.715	81.6	2.6775	6	432	17.8	395.59
## 113	0.12329	0.0	10.01	0	0.5470	5.913	92.9	2.3534	6	432	17.8	394.95
## 114	0.22212	0.0	10.01	0	0.5470	6.092	95.4	2.5480	6	432	17.8	396.90
## 115	0.14231	0.0	10.01	0	0.5470	6.254	84.2	2.2565	6	432	17.8	388.74
## 116	0.17134	0.0	10.01	0	0.5470	5.928	88.2	2.4631	6	432	17.8	344.91
## 117	0.13158	0.0	10.01	0	0.5470	6.176	72.5	2.7301	6	432	17.8	393.30
## 118	0.15098	0.0	10.01	0	0.5470	6.021	82.6	2.7474	6	432	17.8	394.51
## 119	0.13058	0.0	10.01	0	0.5470	5.872	73.1	2.4775	6	432	17.8	338.63
## 120	0.14476	0.0	10.01	0	0.5470	5.731	65.2	2.7592	6	432	17.8	391.50
## 121	0.06899	0.0	25.65	0	0.5810	5.870	69.7	2.2577	2	188	19.1	389.15
## 122	0.07165	0.0	25.65	0	0.5810	6.004	84.1	2.1974	2	188	19.1	377.67
## 123	0.09299	0.0	25.65	0	0.5810	5.961	92.9	2.0869	2	188	19.1	378.09
## 124	0.15038	0.0	25.65	0	0.5810	5.856	97.0	1.9444	2	188	19.1	370.31
## 125	0.09849	0.0	25.65	0	0.5810	5.879	95.8	2.0063	2	188	19.1	379.38
## 126	0.16902	0.0	25.65	0	0.5810	5.986	88.4	1.9929	2	188	19.1	385.02
## 127	0.38735	0.0	25.65	0	0.5810	5.613	95.6	1.7572	2	188	19.1	359.29
## 128	0.25915	0.0	21.89	0	0.6240	5.693	96.0	1.7883	4	437	21.2	392.11
## 129	0.32543	0.0	21.89	0	0.6240	6.431	98.8	1.8125	4	437	21.2	396.90
## 130	0.88125	0.0	21.89	0	0.6240	5.637	94.7	1.9799	4	437	21.2	396.90
## 131	0.34006	0.0	21.89	0	0.6240	6.458	98.9	2.1185	4	437	21.2	395.04
## 132	1.19294	0.0	21.89	0	0.6240	6.326	97.7	2.2710	4	437	21.2	396.90
## 133	0.59005	0.0	21.89	0	0.6240	6.372	97.9	2.3274	4	437	21.2	385.76
## 134	0.32982	0.0	21.89	0	0.6240	5.822	95.4	2.4699	4	437	21.2	388.69
## 135	0.97617	0.0	21.89	0	0.6240	5.757	98.4	2.3460	4	437	21.2	262.76
## 136	0.55778	0.0	21.89	0	0.6240	6.335	98.2	2.1107	4	437	21.2	394.67
## 137	0.32264	0.0	21.89	0	0.6240	5.942	93.5	1.9669	4	437	21.2	378.25
## 138	0.35233	0.0	21.89	0	0.6240	6.454	98.4	1.8498	4	437	21.2	394.08
## 139	0.24980	0.0	21.89	0	0.6240	5.857	98.2	1.6686	4	437	21.2	392.04
## 140	0.54452	0.0	21.89	0	0.6240	6.151	97.9	1.6687	4	437	21.2	396.90
## 141	0.29090	0.0	21.89	0	0.6240	6.174	93.6	1.6119	4	437	21.2	388.08
## 142	1.62864	0.0	21.89	0	0.6240	5.019	100.0	1.4394	4	437	21.2	396.90
## 143	3.32105	0.0	19.58	1	0.8710	5.403	100.0	1.3216	5	403	14.7	396.90
## 144	4.09740	0.0	19.58	0	0.8710	5.468	100.0	1.4118	5	403	14.7	396.90
## 145	2.77974	0.0	19.58	0	0.8710	4.903	97.8	1.3459	5	403	14.7	396.90
## 146	2.37934	0.0	19.58	0	0.8710	6.130	100.0	1.4191	5	403	14.7	172.91
## 147	2.15505	0.0	19.58	0	0.8710	5.628	100.0	1.5166	5	403	14.7	169.27
## 148	2.36862	0.0	19.58	0	0.8710	4.926	95.7	1.4608	5	403	14.7	391.71
## 149	2.33099	0.0	19.58	0	0.8710	5.186	93.8	1.5296	5	403	14.7	356.99
## 150	2.73397	0.0	19.58	0	0.8710	5.597	94.9	1.5257	5	403	14.7	351.85
## 151	1.65660	0.0	19.58	0	0.8710	6.122	97.3	1.6180	5	403	14.7	372.80
## 152	1.49632	0.0	19.58	0	0.8710	5.404	100.0	1.5916	5	403	14.7	341.60
## 153	1.12658	0.0	19.58	1	0.8710	5.012	88.0	1.6102	5	403	14.7	343.28
## 154	2.14918	0.0	19.58	0	0.8710	5.709	98.5	1.6232	5	403	14.7	261.95
## 155	1.41385	0.0	19.58	1	0.8710	6.129	96.0	1.7494	5	403	14.7	321.02
## 156	3.53501	0.0	19.58	1	0.8710	6.152	82.6	1.7455	5	403	14.7	88.01
## 157	2.44668	0.0	19.58	0	0.8710	5.272	94.0	1.7364	5	403	14.7	88.63
## 158	1.22358	0.0	19.58	0	0.6050	6.943	97.4	1.8773	5	403	14.7	363.43
## 159	1.34284	0.0	19.58	0	0.6050	6.066	100.0	1.7573	5	403	14.7	353.89
## 160	1.42502	0.0	19.58	0	0.8710	6.510	100.0	1.7659	5	403	14.7	364.31
## 161	1.27346	0.0	19.58	1	0.6050	6.250	92.6	1.7984	5	403	14.7	338.92
## 162	1.46336	0.0	19.58	0	0.6050	7.489	90.8	1.9709	5	403	14.7	374.43

## 163	1.83377	0.0	19.58	1	0.6050	7.802	98.2	2.0407	5	403	14.7	389.61
## 164	1.51902	0.0	19.58	1	0.6050	8.375	93.9	2.1620	5	403	14.7	388.45
## 165	2.24236	0.0	19.58	0	0.6050	5.854	91.8	2.4220	5	403	14.7	395.11
## 166	2.92400	0.0	19.58	0	0.6050	6.101	93.0	2.2834	5	403	14.7	240.16
## 167	2.01019	0.0	19.58	0	0.6050	7.929	96.2	2.0459	5	403	14.7	369.30
## 168	1.80028	0.0	19.58	0	0.6050	5.877	79.2	2.4259	5	403	14.7	227.61
## 169	2.30040	0.0	19.58	0	0.6050	6.319	96.1	2.1000	5	403	14.7	297.09
## 170	2.44953	0.0	19.58	0	0.6050	6.402	95.2	2.2625	5	403	14.7	330.04
## 171	1.20742	0.0	19.58	0	0.6050	5.875	94.6	2.4259	5	403	14.7	292.29
## 172	2.31390	0.0	19.58	0	0.6050	5.880	97.3	2.3887	5	403	14.7	348.13
## 173	0.13914	0.0	4.05	0	0.5100	5.572	88.5	2.5961	5	296	16.6	396.90
## 174	0.09178	0.0	4.05	0	0.5100	6.416	84.1	2.6463	5	296	16.6	395.50
## 175	0.08447	0.0	4.05	0	0.5100	5.859	68.7	2.7019	5	296	16.6	393.23
## 176	0.06664	0.0	4.05	0	0.5100	6.546	33.1	3.1323	5	296	16.6	390.96
## 177	0.07022	0.0	4.05	0	0.5100	6.020	47.2	3.5549	5	296	16.6	393.23
## 178	0.05425	0.0	4.05	0	0.5100	6.315	73.4	3.3175	5	296	16.6	395.60
## 179	0.06642	0.0	4.05	0	0.5100	6.860	74.4	2.9153	5	296	16.6	391.27
## 180	0.05780	0.0	2.46	0	0.4880	6.980	58.4	2.8290	3	193	17.8	396.90
## 181	0.06588	0.0	2.46	0	0.4880	7.765	83.3	2.7410	3	193	17.8	395.56
## 182	0.06888	0.0	2.46	0	0.4880	6.144	62.2	2.5979	3	193	17.8	396.90
## 183	0.09103	0.0	2.46	0	0.4880	7.155	92.2	2.7006	3	193	17.8	394.12
## 184	0.10008	0.0	2.46	0	0.4880	6.563	95.6	2.8470	3	193	17.8	396.90
## 185	0.08308	0.0	2.46	0	0.4880	5.604	89.8	2.9879	3	193	17.8	391.00
## 186	0.06047	0.0	2.46	0	0.4880	6.153	68.8	3.2797	3	193	17.8	387.11
## 187	0.05602	0.0	2.46	0	0.4880	7.831	53.6	3.1992	3	193	17.8	392.63
## 188	0.07875	45.0	3.44	0	0.4370	6.782	41.1	3.7886	5	398	15.2	393.87
## 189	0.12579	45.0	3.44	0	0.4370	6.556	29.1	4.5667	5	398	15.2	382.84
## 190	0.08370	45.0	3.44	0	0.4370	7.185	38.9	4.5667	5	398	15.2	396.90
## 191	0.09068	45.0	3.44	0	0.4370	6.951	21.5	6.4798	5	398	15.2	377.68
## 192	0.06911	45.0	3.44	0	0.4370	6.739	30.8	6.4798	5	398	15.2	389.71
## 193	0.08664	45.0	3.44	0	0.4370	7.178	26.3	6.4798	5	398	15.2	390.49
## 194	0.02187	60.0	2.93	0	0.4010	6.800	9.9	6.2196	1	265	15.6	393.37
## 195	0.01439	60.0	2.93	0	0.4010	6.604	18.8	6.2196	1	265	15.6	376.70
## 196	0.01381	80.0	0.46	0	0.4220	7.875	32.0	5.6484	4	255	14.4	394.23
## 197	0.04011	80.0	1.52	0	0.4040	7.287	34.1	7.3090	2	329	12.6	396.90
## 198	0.04666	80.0	1.52	0	0.4040	7.107	36.6	7.3090	2	329	12.6	354.31
## 199	0.03768	80.0	1.52	0	0.4040	7.274	38.3	7.3090	2	329	12.6	392.20
## 200	0.03150	95.0	1.47	0	0.4030	6.975	15.3	7.6534	3	402	17.0	396.90
## 201	0.01778	95.0	1.47	0	0.4030	7.135	13.9	7.6534	3	402	17.0	384.30
## 202	0.03445	82.5	2.03	0	0.4150	6.162	38.4	6.2700	2	348	14.7	393.77
## 203	0.02177	82.5	2.03	0	0.4150	7.610	15.7	6.2700	2	348	14.7	395.38
## 204	0.03510	95.0	2.68	0	0.4161	7.853	33.2	5.1180	4	224	14.7	392.78
## 205	0.02009	95.0	2.68	0	0.4161	8.034	31.9	5.1180	4	224	14.7	390.55
## 206	0.13642	0.0	10.59	0	0.4890	5.891	22.3	3.9454	4	277	18.6	396.90
## 207	0.22969	0.0	10.59	0	0.4890	6.326	52.5	4.3549	4	277	18.6	394.87
## 208	0.25199	0.0	10.59	0	0.4890	5.783	72.7	4.3549	4	277	18.6	389.43
## 209	0.13587	0.0	10.59	1	0.4890	6.064	59.1	4.2392	4	277	18.6	381.32
## 210	0.43571	0.0	10.59	1	0.4890	5.344	100.0	3.8750	4	277	18.6	396.90
## 211	0.17446	0.0	10.59	1	0.4890	5.960	92.1	3.8771	4	277	18.6	393.25
## 212	0.37578	0.0	10.59	1	0.4890	5.404	88.6	3.6650	4	277	18.6	395.24
## 213	0.21719	0.0	10.59	1	0.4890	5.807	53.8	3.6526	4	277	18.6	390.94
## 214	0.14052	0.0	10.59	0	0.4890	6.375	32.3	3.9454	4	277	18.6	385.81
## 215	0.28955	0.0	10.59	0	0.4890	5.412	9.8	3.5875	4	277	18.6	348.93
## 216	0.19802	0.0	10.59	0	0.4890	6.182	42.4	3.9454	4	277	18.6	393.63

## 217	0.04560	0.0	13.89	1	0.5500	5.888	56.0	3.1121	5	276	16.4	392.80
## 218	0.07013	0.0	13.89	0	0.5500	6.642	85.1	3.4211	5	276	16.4	392.78
## 219	0.11069	0.0	13.89	1	0.5500	5.951	93.8	2.8893	5	276	16.4	396.90
## 220	0.11425	0.0	13.89	1	0.5500	6.373	92.4	3.3633	5	276	16.4	393.74
## 221	0.35809	0.0	6.20	1	0.5070	6.951	88.5	2.8617	8	307	17.4	391.70
## 222	0.40771	0.0	6.20	1	0.5070	6.164	91.3	3.0480	8	307	17.4	395.24
## 223	0.62356	0.0	6.20	1	0.5070	6.879	77.7	3.2721	8	307	17.4	390.39
## 224	0.61470	0.0	6.20	0	0.5070	6.618	80.8	3.2721	8	307	17.4	396.90
## 225	0.31533	0.0	6.20	0	0.5040	8.266	78.3	2.8944	8	307	17.4	385.05
## 226	0.52693	0.0	6.20	0	0.5040	8.725	83.0	2.8944	8	307	17.4	382.00
## 227	0.38214	0.0	6.20	0	0.5040	8.040	86.5	3.2157	8	307	17.4	387.38
## 228	0.41238	0.0	6.20	0	0.5040	7.163	79.9	3.2157	8	307	17.4	372.08
## 229	0.29819	0.0	6.20	0	0.5040	7.686	17.0	3.3751	8	307	17.4	377.51
## 230	0.44178	0.0	6.20	0	0.5040	6.552	21.4	3.3751	8	307	17.4	380.34
## 231	0.53700	0.0	6.20	0	0.5040	5.981	68.1	3.6715	8	307	17.4	378.35
## 232	0.46296	0.0	6.20	0	0.5040	7.412	76.9	3.6715	8	307	17.4	376.14
## 233	0.57529	0.0	6.20	0	0.5070	8.337	73.3	3.8384	8	307	17.4	385.91
## 234	0.33147	0.0	6.20	0	0.5070	8.247	70.4	3.6519	8	307	17.4	378.95
## 235	0.44791	0.0	6.20	1	0.5070	6.726	66.5	3.6519	8	307	17.4	360.20
## 236	0.33045	0.0	6.20	0	0.5070	6.086	61.5	3.6519	8	307	17.4	376.75
## 237	0.52058	0.0	6.20	1	0.5070	6.631	76.5	4.1480	8	307	17.4	388.45
## 238	0.51183	0.0	6.20	0	0.5070	7.358	71.6	4.1480	8	307	17.4	390.07
## 239	0.08244	30.0	4.93	0	0.4280	6.481	18.5	6.1899	6	300	16.6	379.41
## 240	0.09252	30.0	4.93	0	0.4280	6.606	42.2	6.1899	6	300	16.6	383.78
## 241	0.11329	30.0	4.93	0	0.4280	6.897	54.3	6.3361	6	300	16.6	391.25
## 242	0.10612	30.0	4.93	0	0.4280	6.095	65.1	6.3361	6	300	16.6	394.62
## 243	0.10290	30.0	4.93	0	0.4280	6.358	52.9	7.0355	6	300	16.6	372.75
## 244	0.12757	30.0	4.93	0	0.4280	6.393	7.8	7.0355	6	300	16.6	374.71
## 245	0.20608	22.0	5.86	0	0.4310	5.593	76.5	7.9549	7	330	19.1	372.49
## 246	0.19133	22.0	5.86	0	0.4310	5.605	70.2	7.9549	7	330	19.1	389.13
## 247	0.33983	22.0	5.86	0	0.4310	6.108	34.9	8.0555	7	330	19.1	390.18
## 248	0.19657	22.0	5.86	0	0.4310	6.226	79.2	8.0555	7	330	19.1	376.14
## 249	0.16439	22.0	5.86	0	0.4310	6.433	49.1	7.8265	7	330	19.1	374.71
## 250	0.19073	22.0	5.86	0	0.4310	6.718	17.5	7.8265	7	330	19.1	393.74
## 251	0.14030	22.0	5.86	0	0.4310	6.487	13.0	7.3967	7	330	19.1	396.28
## 252	0.21409	22.0	5.86	0	0.4310	6.438	8.9	7.3967	7	330	19.1	377.07
## 253	0.08221	22.0	5.86	0	0.4310	6.957	6.8	8.9067	7	330	19.1	386.09
## 254	0.36894	22.0	5.86	0	0.4310	8.259	8.4	8.9067	7	330	19.1	396.90
## 255	0.04819	80.0	3.64	0	0.3920	6.108	32.0	9.2203	1	315	16.4	392.89
## 256	0.03548	80.0	3.64	0	0.3920	5.876	19.1	9.2203	1	315	16.4	395.18
## 257	0.01538	90.0	3.75	0	0.3940	7.454	34.2	6.3361	3	244	15.9	386.34
## 258	0.61154	20.0	3.97	0	0.6470	8.704	86.9	1.8010	5	264	13.0	389.70
## 259	0.66351	20.0	3.97	0	0.6470	7.333	100.0	1.8946	5	264	13.0	383.29
## 260	0.65665	20.0	3.97	0	0.6470	6.842	100.0	2.0107	5	264	13.0	391.93
## 261	0.54011	20.0	3.97	0	0.6470	7.203	81.8	2.1121	5	264	13.0	392.80
## 262	0.53412	20.0	3.97	0	0.6470	7.520	89.4	2.1398	5	264	13.0	388.37
## 263	0.52014	20.0	3.97	0	0.6470	8.398	91.5	2.2885	5	264	13.0	386.86
## 264	0.82526	20.0	3.97	0	0.6470	7.327	94.5	2.0788	5	264	13.0	393.42
## 265	0.55007	20.0	3.97	0	0.6470	7.206	91.6	1.9301	5	264	13.0	387.89
## 266	0.76162	20.0	3.97	0	0.6470	5.560	62.8	1.9865	5	264	13.0	392.40
## 267	0.78570	20.0	3.97	0	0.6470	7.014	84.6	2.1329	5	264	13.0	384.07
## 268	0.57834	20.0	3.97	0	0.5750	8.297	67.0	2.4216	5	264	13.0	384.54
## 269	0.54050	20.0	3.97	0	0.5750	7.470	52.6	2.8720	5	264	13.0	390.30
## 270	0.09065	20.0	6.96	1	0.4640	5.920	61.5	3.9175	3	223	18.6	391.34

## 271	0.29916	20.0	6.96	0 0.4640	5.856	42.1	4.4290	3 223	18.6	388.65
## 272	0.16211	20.0	6.96	0 0.4640	6.240	16.3	4.4290	3 223	18.6	396.90
## 273	0.11460	20.0	6.96	0 0.4640	6.538	58.7	3.9175	3 223	18.6	394.96
## 274	0.22188	20.0	6.96	1 0.4640	7.691	51.8	4.3665	3 223	18.6	390.77
## 275	0.05644	40.0	6.41	1 0.4470	6.758	32.9	4.0776	4 254	17.6	396.90
## 276	0.09604	40.0	6.41	0 0.4470	6.854	42.8	4.2673	4 254	17.6	396.90
## 277	0.10469	40.0	6.41	1 0.4470	7.267	49.0	4.7872	4 254	17.6	389.25
## 278	0.06127	40.0	6.41	1 0.4470	6.826	27.6	4.8628	4 254	17.6	393.45
## 279	0.07978	40.0	6.41	0 0.4470	6.482	32.1	4.1403	4 254	17.6	396.90
## 280	0.21038	20.0	3.33	0 0.4429	6.812	32.2	4.1007	5 216	14.9	396.90
## 281	0.03578	20.0	3.33	0 0.4429	7.820	64.5	4.6947	5 216	14.9	387.31
## 282	0.03705	20.0	3.33	0 0.4429	6.968	37.2	5.2447	5 216	14.9	392.23
## 283	0.06129	20.0	3.33	1 0.4429	7.645	49.7	5.2119	5 216	14.9	377.07
## 284	0.01501	90.0	1.21	1 0.4010	7.923	24.8	5.8850	1 198	13.6	395.52
## 285	0.00906	90.0	2.97	0 0.4000	7.088	20.8	7.3073	1 285	15.3	394.72
## 286	0.01096	55.0	2.25	0 0.3890	6.453	31.9	7.3073	1 300	15.3	394.72
## 287	0.01965	80.0	1.76	0 0.3850	6.230	31.5	9.0892	1 241	18.2	341.60
## 288	0.03871	52.5	5.32	0 0.4050	6.209	31.3	7.3172	6 293	16.6	396.90
## 289	0.04590	52.5	5.32	0 0.4050	6.315	45.6	7.3172	6 293	16.6	396.90
## 290	0.04297	52.5	5.32	0 0.4050	6.565	22.9	7.3172	6 293	16.6	371.72
## 291	0.03502	80.0	4.95	0 0.4110	6.861	27.9	5.1167	4 245	19.2	396.90
## 292	0.07886	80.0	4.95	0 0.4110	7.148	27.7	5.1167	4 245	19.2	396.90
## 293	0.03615	80.0	4.95	0 0.4110	6.630	23.4	5.1167	4 245	19.2	396.90
## 294	0.08265	0.0	13.92	0 0.4370	6.127	18.4	5.5027	4 289	16.0	396.90
## 295	0.08199	0.0	13.92	0 0.4370	6.009	42.3	5.5027	4 289	16.0	396.90
## 296	0.12932	0.0	13.92	0 0.4370	6.678	31.1	5.9604	4 289	16.0	396.90
## 297	0.05372	0.0	13.92	0 0.4370	6.549	51.0	5.9604	4 289	16.0	392.85
## 298	0.14103	0.0	13.92	0 0.4370	5.790	58.0	6.3200	4 289	16.0	396.90
## 299	0.06466	70.0	2.24	0 0.4000	6.345	20.1	7.8278	5 358	14.8	368.24
## 300	0.05561	70.0	2.24	0 0.4000	7.041	10.0	7.8278	5 358	14.8	371.58
## 301	0.04417	70.0	2.24	0 0.4000	6.871	47.4	7.8278	5 358	14.8	390.86
## 302	0.03537	34.0	6.09	0 0.4330	6.590	40.4	5.4917	7 329	16.1	395.75
## 303	0.09266	34.0	6.09	0 0.4330	6.495	18.4	5.4917	7 329	16.1	383.61
## 304	0.10000	34.0	6.09	0 0.4330	6.982	17.7	5.4917	7 329	16.1	390.43
## 305	0.05515	33.0	2.18	0 0.4720	7.236	41.1	4.0220	7 222	18.4	393.68
## 306	0.05479	33.0	2.18	0 0.4720	6.616	58.1	3.3700	7 222	18.4	393.36
## 307	0.07503	33.0	2.18	0 0.4720	7.420	71.9	3.0992	7 222	18.4	396.90
## 308	0.04932	33.0	2.18	0 0.4720	6.849	70.3	3.1827	7 222	18.4	396.90
## 309	0.49298	0.0	9.90	0 0.5440	6.635	82.5	3.3175	4 304	18.4	396.90
## 310	0.34940	0.0	9.90	0 0.5440	5.972	76.7	3.1025	4 304	18.4	396.24
## 311	2.63548	0.0	9.90	0 0.5440	4.973	37.8	2.5194	4 304	18.4	350.45
## 312	0.79041	0.0	9.90	0 0.5440	6.122	52.8	2.6403	4 304	18.4	396.90
## 313	0.26169	0.0	9.90	0 0.5440	6.023	90.4	2.8340	4 304	18.4	396.30
## 314	0.26938	0.0	9.90	0 0.5440	6.266	82.8	3.2628	4 304	18.4	393.39
## 315	0.36920	0.0	9.90	0 0.5440	6.567	87.3	3.6023	4 304	18.4	395.69
## 316	0.25356	0.0	9.90	0 0.5440	5.705	77.7	3.9450	4 304	18.4	396.42
## 317	0.31827	0.0	9.90	0 0.5440	5.914	83.2	3.9986	4 304	18.4	390.70
## 318	0.24522	0.0	9.90	0 0.5440	5.782	71.7	4.0317	4 304	18.4	396.90
## 319	0.40202	0.0	9.90	0 0.5440	6.382	67.2	3.5325	4 304	18.4	395.21
## 320	0.47547	0.0	9.90	0 0.5440	6.113	58.8	4.0019	4 304	18.4	396.23
## 321	0.16760	0.0	7.38	0 0.4930	6.426	52.3	4.5404	5 287	19.6	396.90
## 322	0.18159	0.0	7.38	0 0.4930	6.376	54.3	4.5404	5 287	19.6	396.90
## 323	0.35114	0.0	7.38	0 0.4930	6.041	49.9	4.7211	5 287	19.6	396.90
## 324	0.28392	0.0	7.38	0 0.4930	5.708	74.3	4.7211	5 287	19.6	391.13

## 325	0.34109	0.0	7.38	0	0.4930	6.415	40.1	4.7211	5	287	19.6	396.90
## 326	0.19186	0.0	7.38	0	0.4930	6.431	14.7	5.4159	5	287	19.6	393.68
## 327	0.30347	0.0	7.38	0	0.4930	6.312	28.9	5.4159	5	287	19.6	396.90
## 328	0.24103	0.0	7.38	0	0.4930	6.083	43.7	5.4159	5	287	19.6	396.90
## 329	0.06617	0.0	3.24	0	0.4600	5.868	25.8	5.2146	4	430	16.9	382.44
## 330	0.06724	0.0	3.24	0	0.4600	6.333	17.2	5.2146	4	430	16.9	375.21
## 331	0.04544	0.0	3.24	0	0.4600	6.144	32.2	5.8736	4	430	16.9	368.57
## 332	0.05023	35.0	6.06	0	0.4379	5.706	28.4	6.6407	1	304	16.9	394.02
## 333	0.03466	35.0	6.06	0	0.4379	6.031	23.3	6.6407	1	304	16.9	362.25
## 334	0.05083	0.0	5.19	0	0.5150	6.316	38.1	6.4584	5	224	20.2	389.71
## 335	0.03738	0.0	5.19	0	0.5150	6.310	38.5	6.4584	5	224	20.2	389.40
## 336	0.03961	0.0	5.19	0	0.5150	6.037	34.5	5.9853	5	224	20.2	396.90
## 337	0.03427	0.0	5.19	0	0.5150	5.869	46.3	5.2311	5	224	20.2	396.90
## 338	0.03041	0.0	5.19	0	0.5150	5.895	59.6	5.6150	5	224	20.2	394.81
## 339	0.03306	0.0	5.19	0	0.5150	6.059	37.3	4.8122	5	224	20.2	396.14
## 340	0.05497	0.0	5.19	0	0.5150	5.985	45.4	4.8122	5	224	20.2	396.90
## 341	0.06151	0.0	5.19	0	0.5150	5.968	58.5	4.8122	5	224	20.2	396.90
## 342	0.01301	35.0	1.52	0	0.4420	7.241	49.3	7.0379	1	284	15.5	394.74
## 343	0.02498	0.0	1.89	0	0.5180	6.540	59.7	6.2669	1	422	15.9	389.96
## 344	0.02543	55.0	3.78	0	0.4840	6.696	56.4	5.7321	5	370	17.6	396.90
## 345	0.03049	55.0	3.78	0	0.4840	6.874	28.1	6.4654	5	370	17.6	387.97
## 346	0.03113	0.0	4.39	0	0.4420	6.014	48.5	8.0136	3	352	18.8	385.64
## 347	0.06162	0.0	4.39	0	0.4420	5.898	52.3	8.0136	3	352	18.8	364.61
## 348	0.01870	85.0	4.15	0	0.4290	6.516	27.7	8.5353	4	351	17.9	392.43
## 349	0.01501	80.0	2.01	0	0.4350	6.635	29.7	8.3440	4	280	17.0	390.94
## 350	0.02899	40.0	1.25	0	0.4290	6.939	34.5	8.7921	1	335	19.7	389.85
## 351	0.06211	40.0	1.25	0	0.4290	6.490	44.4	8.7921	1	335	19.7	396.90
## 352	0.07950	60.0	1.69	0	0.4110	6.579	35.9	10.7103	4	411	18.3	370.78
## 353	0.07244	60.0	1.69	0	0.4110	5.884	18.5	10.7103	4	411	18.3	392.33
## 354	0.01709	90.0	2.02	0	0.4100	6.728	36.1	12.1265	5	187	17.0	384.46
## 355	0.04301	80.0	1.91	0	0.4130	5.663	21.9	10.5857	4	334	22.0	382.80
## 356	0.10659	80.0	1.91	0	0.4130	5.936	19.5	10.5857	4	334	22.0	376.04
## 357	8.98296	0.0	18.10	1	0.7700	6.212	97.4	2.1222	24	666	20.2	377.73
## 358	3.84970	0.0	18.10	1	0.7700	6.395	91.0	2.5052	24	666	20.2	391.34
## 359	5.20177	0.0	18.10	1	0.7700	6.127	83.4	2.7227	24	666	20.2	395.43
## 360	4.26131	0.0	18.10	0	0.7700	6.112	81.3	2.5091	24	666	20.2	390.74
## 361	4.54192	0.0	18.10	0	0.7700	6.398	88.0	2.5182	24	666	20.2	374.56
## 362	3.83684	0.0	18.10	0	0.7700	6.251	91.1	2.2955	24	666	20.2	350.65
## 363	3.67822	0.0	18.10	0	0.7700	5.362	96.2	2.1036	24	666	20.2	380.79
## 364	4.22239	0.0	18.10	1	0.7700	5.803	89.0	1.9047	24	666	20.2	353.04
## 365	3.47428	0.0	18.10	1	0.7180	8.780	82.9	1.9047	24	666	20.2	354.55
## 366	4.55587	0.0	18.10	0	0.7180	3.561	87.9	1.6132	24	666	20.2	354.70
## 367	3.69695	0.0	18.10	0	0.7180	4.963	91.4	1.7523	24	666	20.2	316.03
## 368	13.52220	0.0	18.10	0	0.6310	3.863	100.0	1.5106	24	666	20.2	131.42
## 369	4.89822	0.0	18.10	0	0.6310	4.970	100.0	1.3325	24	666	20.2	375.52
## 370	5.66998	0.0	18.10	1	0.6310	6.683	96.8	1.3567	24	666	20.2	375.33
## 371	6.53876	0.0	18.10	1	0.6310	7.016	97.5	1.2024	24	666	20.2	392.05
## 372	9.23230	0.0	18.10	0	0.6310	6.216	100.0	1.1691	24	666	20.2	366.15
## 373	8.26725	0.0	18.10	1	0.6680	5.875	89.6	1.1296	24	666	20.2	347.88
## 374	11.10810	0.0	18.10	0	0.6680	4.906	100.0	1.1742	24	666	20.2	396.90
## 375	18.49820	0.0	18.10	0	0.6680	4.138	100.0	1.1370	24	666	20.2	396.90
## 376	19.60910	0.0	18.10	0	0.6710	7.313	97.9	1.3163	24	666	20.2	396.90
## 377	15.28800	0.0	18.10	0	0.6710	6.649	93.3	1.3449	24	666	20.2	363.02
## 378	9.82349	0.0	18.10	0	0.6710	6.794	98.8	1.3580	24	666	20.2	396.90

## 379	23.64820	0.0	18.10	0	0.6710	6.380	96.2	1.3861	24	666	20.2	396.90
## 380	17.86670	0.0	18.10	0	0.6710	6.223	100.0	1.3861	24	666	20.2	393.74
## 381	88.97620	0.0	18.10	0	0.6710	6.968	91.9	1.4165	24	666	20.2	396.90
## 382	15.87440	0.0	18.10	0	0.6710	6.545	99.1	1.5192	24	666	20.2	396.90
## 383	9.18702	0.0	18.10	0	0.7000	5.536	100.0	1.5804	24	666	20.2	396.90
## 384	7.99248	0.0	18.10	0	0.7000	5.520	100.0	1.5331	24	666	20.2	396.90
## 385	20.08490	0.0	18.10	0	0.7000	4.368	91.2	1.4395	24	666	20.2	285.83
## 386	16.81180	0.0	18.10	0	0.7000	5.277	98.1	1.4261	24	666	20.2	396.90
## 387	24.39380	0.0	18.10	0	0.7000	4.652	100.0	1.4672	24	666	20.2	396.90
## 388	22.59710	0.0	18.10	0	0.7000	5.000	89.5	1.5184	24	666	20.2	396.90
## 389	14.33370	0.0	18.10	0	0.7000	4.880	100.0	1.5895	24	666	20.2	372.92
## 390	8.15174	0.0	18.10	0	0.7000	5.390	98.9	1.7281	24	666	20.2	396.90
## 391	6.96215	0.0	18.10	0	0.7000	5.713	97.0	1.9265	24	666	20.2	394.43
## 392	5.29305	0.0	18.10	0	0.7000	6.051	82.5	2.1678	24	666	20.2	378.38
## 393	11.57790	0.0	18.10	0	0.7000	5.036	97.0	1.7700	24	666	20.2	396.90
## 394	8.64476	0.0	18.10	0	0.6930	6.193	92.6	1.7912	24	666	20.2	396.90
## 395	13.35980	0.0	18.10	0	0.6930	5.887	94.7	1.7821	24	666	20.2	396.90
## 396	8.71675	0.0	18.10	0	0.6930	6.471	98.8	1.7257	24	666	20.2	391.98
## 397	5.87205	0.0	18.10	0	0.6930	6.405	96.0	1.6768	24	666	20.2	396.90
## 398	7.67202	0.0	18.10	0	0.6930	5.747	98.9	1.6334	24	666	20.2	393.10
## 399	38.35180	0.0	18.10	0	0.6930	5.453	100.0	1.4896	24	666	20.2	396.90
## 400	9.91655	0.0	18.10	0	0.6930	5.852	77.8	1.5004	24	666	20.2	338.16
## 401	25.04610	0.0	18.10	0	0.6930	5.987	100.0	1.5888	24	666	20.2	396.90
## 402	14.23620	0.0	18.10	0	0.6930	6.343	100.0	1.5741	24	666	20.2	396.90
## 403	9.59571	0.0	18.10	0	0.6930	6.404	100.0	1.6390	24	666	20.2	376.11
## 404	24.80170	0.0	18.10	0	0.6930	5.349	96.0	1.7028	24	666	20.2	396.90
## 405	41.52920	0.0	18.10	0	0.6930	5.531	85.4	1.6074	24	666	20.2	329.46
## 406	67.92080	0.0	18.10	0	0.6930	5.683	100.0	1.4254	24	666	20.2	384.97
## 407	20.71620	0.0	18.10	0	0.6590	4.138	100.0	1.1781	24	666	20.2	370.22
## 408	11.95110	0.0	18.10	0	0.6590	5.608	100.0	1.2852	24	666	20.2	332.09
## 409	7.40389	0.0	18.10	0	0.5970	5.617	97.9	1.4547	24	666	20.2	314.64
## 410	14.43830	0.0	18.10	0	0.5970	6.852	100.0	1.4655	24	666	20.2	179.36
## 411	51.13580	0.0	18.10	0	0.5970	5.757	100.0	1.4130	24	666	20.2	2.60
## 412	14.05070	0.0	18.10	0	0.5970	6.657	100.0	1.5275	24	666	20.2	35.05
## 413	18.81100	0.0	18.10	0	0.5970	4.628	100.0	1.5539	24	666	20.2	28.79
## 414	28.65580	0.0	18.10	0	0.5970	5.155	100.0	1.5894	24	666	20.2	210.97
## 415	45.74610	0.0	18.10	0	0.6930	4.519	100.0	1.6582	24	666	20.2	88.27
## 416	18.08460	0.0	18.10	0	0.6790	6.434	100.0	1.8347	24	666	20.2	27.25
## 417	10.83420	0.0	18.10	0	0.6790	6.782	90.8	1.8195	24	666	20.2	21.57
## 418	25.94060	0.0	18.10	0	0.6790	5.304	89.1	1.6475	24	666	20.2	127.36
## 419	73.53410	0.0	18.10	0	0.6790	5.957	100.0	1.8026	24	666	20.2	16.45
## 420	11.81230	0.0	18.10	0	0.7180	6.824	76.5	1.7940	24	666	20.2	48.45
## 421	11.08740	0.0	18.10	0	0.7180	6.411	100.0	1.8589	24	666	20.2	318.75
## 422	7.02259	0.0	18.10	0	0.7180	6.006	95.3	1.8746	24	666	20.2	319.98
## 423	12.04820	0.0	18.10	0	0.6140	5.648	87.6	1.9512	24	666	20.2	291.55
## 424	7.05042	0.0	18.10	0	0.6140	6.103	85.1	2.0218	24	666	20.2	2.52
## 425	8.79212	0.0	18.10	0	0.5840	5.565	70.6	2.0635	24	666	20.2	3.65
## 426	15.86030	0.0	18.10	0	0.6790	5.896	95.4	1.9096	24	666	20.2	7.68
## 427	12.24720	0.0	18.10	0	0.5840	5.837	59.7	1.9976	24	666	20.2	24.65
## 428	37.66190	0.0	18.10	0	0.6790	6.202	78.7	1.8629	24	666	20.2	18.82
## 429	7.36711	0.0	18.10	0	0.6790	6.193	78.1	1.9356	24	666	20.2	96.73
## 430	9.33889	0.0	18.10	0	0.6790	6.380	95.6	1.9682	24	666	20.2	60.72
## 431	8.49213	0.0	18.10	0	0.5840	6.348	86.1	2.0527	24	666	20.2	83.45
## 432	10.06230	0.0	18.10	0	0.5840	6.833	94.3	2.0882	24	666	20.2	81.33



## 433	6.44405	0.0	18.10	0	0.5840	6.425	74.8	2.2004	24	666	20.2	97.95
## 434	5.58107	0.0	18.10	0	0.7130	6.436	87.9	2.3158	24	666	20.2	100.19
## 435	13.91340	0.0	18.10	0	0.7130	6.208	95.0	2.2222	24	666	20.2	100.63
## 436	11.16040	0.0	18.10	0	0.7400	6.629	94.6	2.1247	24	666	20.2	109.85
## 437	14.42080	0.0	18.10	0	0.7400	6.461	93.3	2.0026	24	666	20.2	27.49
## 438	15.17720	0.0	18.10	0	0.7400	6.152	100.0	1.9142	24	666	20.2	9.32
## 439	13.67810	0.0	18.10	0	0.7400	5.935	87.9	1.8206	24	666	20.2	68.95
## 440	9.39063	0.0	18.10	0	0.7400	5.627	93.9	1.8172	24	666	20.2	396.90
## 441	22.05110	0.0	18.10	0	0.7400	5.818	92.4	1.8662	24	666	20.2	391.45
## 442	9.72418	0.0	18.10	0	0.7400	6.406	97.2	2.0651	24	666	20.2	385.96
## 443	5.66637	0.0	18.10	0	0.7400	6.219	100.0	2.0048	24	666	20.2	395.69
## 444	9.96654	0.0	18.10	0	0.7400	6.485	100.0	1.9784	24	666	20.2	386.73
## 445	12.80230	0.0	18.10	0	0.7400	5.854	96.6	1.8956	24	666	20.2	240.52
## 446	10.67180	0.0	18.10	0	0.7400	6.459	94.8	1.9879	24	666	20.2	43.06
## 447	6.28807	0.0	18.10	0	0.7400	6.341	96.4	2.0720	24	666	20.2	318.01
## 448	9.92485	0.0	18.10	0	0.7400	6.251	96.6	2.1980	24	666	20.2	388.52
## 449	9.32909	0.0	18.10	0	0.7130	6.185	98.7	2.2616	24	666	20.2	396.90
## 450	7.52601	0.0	18.10	0	0.7130	6.417	98.3	2.1850	24	666	20.2	304.21
## 451	6.71772	0.0	18.10	0	0.7130	6.749	92.6	2.3236	24	666	20.2	0.32
## 452	5.44114	0.0	18.10	0	0.7130	6.655	98.2	2.3552	24	666	20.2	355.29
## 453	5.09017	0.0	18.10	0	0.7130	6.297	91.8	2.3682	24	666	20.2	385.09
## 454	8.24809	0.0	18.10	0	0.7130	7.393	99.3	2.4527	24	666	20.2	375.87
## 455	9.51363	0.0	18.10	0	0.7130	6.728	94.1	2.4961	24	666	20.2	6.68
## 456	4.75237	0.0	18.10	0	0.7130	6.525	86.5	2.4358	24	666	20.2	50.92
## 457	4.66883	0.0	18.10	0	0.7130	5.976	87.9	2.5806	24	666	20.2	10.48
## 458	8.20058	0.0	18.10	0	0.7130	5.936	80.3	2.7792	24	666	20.2	3.50
## 459	7.75223	0.0	18.10	0	0.7130	6.301	83.7	2.7831	24	666	20.2	272.21
## 460	6.80117	0.0	18.10	0	0.7130	6.081	84.4	2.7175	24	666	20.2	396.90
## 461	4.81213	0.0	18.10	0	0.7130	6.701	90.0	2.5975	24	666	20.2	255.23
## 462	3.69311	0.0	18.10	0	0.7130	6.376	88.4	2.5671	24	666	20.2	391.43
## 463	6.65492	0.0	18.10	0	0.7130	6.317	83.0	2.7344	24	666	20.2	396.90
## 464	5.82115	0.0	18.10	0	0.7130	6.513	89.9	2.8016	24	666	20.2	393.82
## 465	7.83932	0.0	18.10	0	0.6550	6.209	65.4	2.9634	24	666	20.2	396.90
## 466	3.16360	0.0	18.10	0	0.6550	5.759	48.2	3.0665	24	666	20.2	334.40
## 467	3.77498	0.0	18.10	0	0.6550	5.952	84.7	2.8715	24	666	20.2	22.01
## 468	4.42228	0.0	18.10	0	0.5840	6.003	94.5	2.5403	24	666	20.2	331.29
## 469	15.57570	0.0	18.10	0	0.5800	5.926	71.0	2.9084	24	666	20.2	368.74
## 470	13.07510	0.0	18.10	0	0.5800	5.713	56.7	2.8237	24	666	20.2	396.90
## 471	4.34879	0.0	18.10	0	0.5800	6.167	84.0	3.0334	24	666	20.2	396.90
## 472	4.03841	0.0	18.10	0	0.5320	6.229	90.7	3.0993	24	666	20.2	395.33
## 473	3.56868	0.0	18.10	0	0.5800	6.437	75.0	2.8965	24	666	20.2	393.37
## 474	4.64689	0.0	18.10	0	0.6140	6.980	67.6	2.5329	24	666	20.2	374.68
## 475	8.05579	0.0	18.10	0	0.5840	5.427	95.4	2.4298	24	666	20.2	352.58
## 476	6.39312	0.0	18.10	0	0.5840	6.162	97.4	2.2060	24	666	20.2	302.76
## 477	4.87141	0.0	18.10	0	0.6140	6.484	93.6	2.3053	24	666	20.2	396.21
## 478	15.02340	0.0	18.10	0	0.6140	5.304	97.3	2.1007	24	666	20.2	349.48
## 479	10.23300	0.0	18.10	0	0.6140	6.185	96.7	2.1705	24	666	20.2	379.70
## 480	14.33370	0.0	18.10	0	0.6140	6.229	88.0	1.9512	24	666	20.2	383.32
## 481	5.82401	0.0	18.10	0	0.5320	6.242	64.7	3.4242	24	666	20.2	396.90
## 482	5.70818	0.0	18.10	0	0.5320	6.750	74.9	3.3317	24	666	20.2	393.07
## 483	5.73116	0.0	18.10	0	0.5320	7.061	77.0	3.4106	24	666	20.2	395.28
## 484	2.81838	0.0	18.10	0	0.5320	5.762	40.3	4.0983	24	666	20.2	392.92
## 485	2.37857	0.0	18.10	0	0.5830	5.871	41.9	3.7240	24	666	20.2	370.73
## 486	3.67367	0.0	18.10	0	0.5830	6.312	51.9	3.9917	24	666	20.2	388.62

##	487	5.69175	0.0	18.10	0	0.5830	6.114	79.8	3.5459	24	666	20.2	392.68
##	488	4.83567	0.0	18.10	0	0.5830	5.905	53.2	3.1523	24	666	20.2	388.22
##	489	0.15086	0.0	27.74	0	0.6090	5.454	92.7	1.8209	4	711	20.1	395.09
##	490	0.18337	0.0	27.74	0	0.6090	5.414	98.3	1.7554	4	711	20.1	344.05
##	491	0.20746	0.0	27.74	0	0.6090	5.093	98.0	1.8226	4	711	20.1	318.43
##	492	0.10574	0.0	27.74	0	0.6090	5.983	98.8	1.8681	4	711	20.1	390.11
##	493	0.11132	0.0	27.74	0	0.6090	5.983	83.5	2.1099	4	711	20.1	396.90
##	494	0.17331	0.0	9.69	0	0.5850	5.707	54.0	2.3817	6	391	19.2	396.90
##	495	0.27957	0.0	9.69	0	0.5850	5.926	42.6	2.3817	6	391	19.2	396.90
##	496	0.17899	0.0	9.69	0	0.5850	5.670	28.8	2.7986	6	391	19.2	393.29
##	497	0.28960	0.0	9.69	0	0.5850	5.390	72.9	2.7986	6	391	19.2	396.90
##	498	0.26838	0.0	9.69	0	0.5850	5.794	70.6	2.8927	6	391	19.2	396.90
##	499	0.23912	0.0	9.69	0	0.5850	6.019	65.3	2.4091	6	391	19.2	396.90
##	500	0.17783	0.0	9.69	0	0.5850	5.569	73.5	2.3999	6	391	19.2	395.77
##	501	0.22438	0.0	9.69	0	0.5850	6.027	79.7	2.4982	6	391	19.2	396.90
##	502	0.06263	0.0	11.93	0	0.5730	6.593	69.1	2.4786	1	273	21.0	391.99
##	503	0.04527	0.0	11.93	0	0.5730	6.120	76.7	2.2875	1	273	21.0	396.90
##	504	0.06076	0.0	11.93	0	0.5730	6.976	91.0	2.1675	1	273	21.0	396.90
##	505	0.10959	0.0	11.93	0	0.5730	6.794	89.3	2.3889	1	273	21.0	393.45
##	506	0.04741	0.0	11.93	0	0.5730	6.030	80.8	2.5050	1	273	21.0	396.90
##		lstat	medv										
##	1	4.98	24.0										
##	2	9.14	21.6										
##	3	4.03	34.7										
##	4	2.94	33.4										
##	5	5.33	36.2										
##	6	5.21	28.7										
##	7	12.43	22.9										
##	8	19.15	27.1										
##	9	29.93	16.5										
##	10	17.10	18.9										
##	11	20.45	15.0										
##	12	13.27	18.9										
##	13	15.71	21.7										
##	14	8.26	20.4										
##	15	10.26	18.2										
##	16	8.47	19.9										
##	17	6.58	23.1										
##	18	14.67	17.5										
##	19	11.69	20.2										
##	20	11.28	18.2										
##	21	21.02	13.6										
##	22	13.83	19.6										
##	23	18.72	15.2										
##	24	19.88	14.5										
##	25	16.30	15.6										
##	26	16.51	13.9										
##	27	14.81	16.6										
##	28	17.28	14.8										
##	29	12.80	18.4										
##	30	11.98	21.0										
##	31	22.60	12.7										
##	32	13.04	14.5										
##	33	27.71	13.2										

##	34	18.35	13.1
##	35	20.34	13.5
##	36	9.68	18.9
##	37	11.41	20.0
##	38	8.77	21.0
##	39	10.13	24.7
##	40	4.32	30.8
##	41	1.98	34.9
##	42	4.84	26.6
##	43	5.81	25.3
##	44	7.44	24.7
##	45	9.55	21.2
##	46	10.21	19.3
##	47	14.15	20.0
##	48	18.80	16.6
##	49	30.81	14.4
##	50	16.20	19.4
##	51	13.45	19.7
##	52	9.43	20.5
##	53	5.28	25.0
##	54	8.43	23.4
##	55	14.80	18.9
##	56	4.81	35.4
##	57	5.77	24.7
##	58	3.95	31.6
##	59	6.86	23.3
##	60	9.22	19.6
##	61	13.15	18.7
##	62	14.44	16.0
##	63	6.73	22.2
##	64	9.50	25.0
##	65	8.05	33.0
##	66	4.67	23.5
##	67	10.24	19.4
##	68	8.10	22.0
##	69	13.09	17.4
##	70	8.79	20.9
##	71	6.72	24.2
##	72	9.88	21.7
##	73	5.52	22.8
##	74	7.54	23.4
##	75	6.78	24.1
##	76	8.94	21.4
##	77	11.97	20.0
##	78	10.27	20.8
##	79	12.34	21.2
##	80	9.10	20.3
##	81	5.29	28.0
##	82	7.22	23.9
##	83	6.72	24.8
##	84	7.51	22.9
##	85	9.62	23.9
##	86	6.53	26.6
##	87	12.86	22.5

##	88	8.44	22.2
##	89	5.50	23.6
##	90	5.70	28.7
##	91	8.81	22.6
##	92	8.20	22.0
##	93	8.16	22.9
##	94	6.21	25.0
##	95	10.59	20.6
##	96	6.65	28.4
##	97	11.34	21.4
##	98	4.21	38.7
##	99	3.57	43.8
##	100	6.19	33.2
##	101	9.42	27.5
##	102	7.67	26.5
##	103	10.63	18.6
##	104	13.44	19.3
##	105	12.33	20.1
##	106	16.47	19.5
##	107	18.66	19.5
##	108	14.09	20.4
##	109	12.27	19.8
##	110	15.55	19.4
##	111	13.00	21.7
##	112	10.16	22.8
##	113	16.21	18.8
##	114	17.09	18.7
##	115	10.45	18.5
##	116	15.76	18.3
##	117	12.04	21.2
##	118	10.30	19.2
##	119	15.37	20.4
##	120	13.61	19.3
##	121	14.37	22.0
##	122	14.27	20.3
##	123	17.93	20.5
##	124	25.41	17.3
##	125	17.58	18.8
##	126	14.81	21.4
##	127	27.26	15.7
##	128	17.19	16.2
##	129	15.39	18.0
##	130	18.34	14.3
##	131	12.60	19.2
##	132	12.26	19.6
##	133	11.12	23.0
##	134	15.03	18.4
##	135	17.31	15.6
##	136	16.96	18.1
##	137	16.90	17.4
##	138	14.59	17.1
##	139	21.32	13.3
##	140	18.46	17.8
##	141	24.16	14.0

## 142 34.41 14.4  
## 143 26.82 13.4  
## 144 26.42 15.6  
## 145 29.29 11.8  
## 146 27.80 13.8  
## 147 16.65 15.6  
## 148 29.53 14.6  
## 149 28.32 17.8  
## 150 21.45 15.4  
## 151 14.10 21.5  
## 152 13.28 19.6  
## 153 12.12 15.3  
## 154 15.79 19.4  
## 155 15.12 17.0  
## 156 15.02 15.6  
## 157 16.14 13.1  
## 158 4.59 41.3  
## 159 6.43 24.3  
## 160 7.39 23.3  
## 161 5.50 27.0  
## 162 1.73 50.0  
## 163 1.92 50.0  
## 164 3.32 50.0  
## 165 11.64 22.7  
## 166 9.81 25.0  
## 167 3.70 50.0  
## 168 12.14 23.8  
## 169 11.10 23.8  
## 170 11.32 22.3  
## 171 14.43 17.4  
## 172 12.03 19.1  
## 173 14.69 23.1  
## 174 9.04 23.6  
## 175 9.64 22.6  
## 176 5.33 29.4  
## 177 10.11 23.2  
## 178 6.29 24.6  
## 179 6.92 29.9  
## 180 5.04 37.2  
## 181 7.56 39.8  
## 182 9.45 36.2  
## 183 4.82 37.9  
## 184 5.68 32.5  
## 185 13.98 26.4  
## 186 13.15 29.6  
## 187 4.45 50.0  
## 188 6.68 32.0  
## 189 4.56 29.8  
## 190 5.39 34.9  
## 191 5.10 37.0  
## 192 4.69 30.5  
## 193 2.87 36.4  
## 194 5.03 31.1  
## 195 4.38 29.1

## 196 2.97 50.0  
## 197 4.08 33.3  
## 198 8.61 30.3  
## 199 6.62 34.6  
## 200 4.56 34.9  
## 201 4.45 32.9  
## 202 7.43 24.1  
## 203 3.11 42.3  
## 204 3.81 48.5  
## 205 2.88 50.0  
## 206 10.87 22.6  
## 207 10.97 24.4  
## 208 18.06 22.5  
## 209 14.66 24.4  
## 210 23.09 20.0  
## 211 17.27 21.7  
## 212 23.98 19.3  
## 213 16.03 22.4  
## 214 9.38 28.1  
## 215 29.55 23.7  
## 216 9.47 25.0  
## 217 13.51 23.3  
## 218 9.69 28.7  
## 219 17.92 21.5  
## 220 10.50 23.0  
## 221 9.71 26.7  
## 222 21.46 21.7  
## 223 9.93 27.5  
## 224 7.60 30.1  
## 225 4.14 44.8  
## 226 4.63 50.0  
## 227 3.13 37.6  
## 228 6.36 31.6  
## 229 3.92 46.7  
## 230 3.76 31.5  
## 231 11.65 24.3  
## 232 5.25 31.7  
## 233 2.47 41.7  
## 234 3.95 48.3  
## 235 8.05 29.0  
## 236 10.88 24.0  
## 237 9.54 25.1  
## 238 4.73 31.5  
## 239 6.36 23.7  
## 240 7.37 23.3  
## 241 11.38 22.0  
## 242 12.40 20.1  
## 243 11.22 22.2  
## 244 5.19 23.7  
## 245 12.50 17.6  
## 246 18.46 18.5  
## 247 9.16 24.3  
## 248 10.15 20.5  
## 249 9.52 24.5

## 250 6.56 26.2  
## 251 5.90 24.4  
## 252 3.59 24.8  
## 253 3.53 29.6  
## 254 3.54 42.8  
## 255 6.57 21.9  
## 256 9.25 20.9  
## 257 3.11 44.0  
## 258 5.12 50.0  
## 259 7.79 36.0  
## 260 6.90 30.1  
## 261 9.59 33.8  
## 262 7.26 43.1  
## 263 5.91 48.8  
## 264 11.25 31.0  
## 265 8.10 36.5  
## 266 10.45 22.8  
## 267 14.79 30.7  
## 268 7.44 50.0  
## 269 3.16 43.5  
## 270 13.65 20.7  
## 271 13.00 21.1  
## 272 6.59 25.2  
## 273 7.73 24.4  
## 274 6.58 35.2  
## 275 3.53 32.4  
## 276 2.98 32.0  
## 277 6.05 33.2  
## 278 4.16 33.1  
## 279 7.19 29.1  
## 280 4.85 35.1  
## 281 3.76 45.4  
## 282 4.59 35.4  
## 283 3.01 46.0  
## 284 3.16 50.0  
## 285 7.85 32.2  
## 286 8.23 22.0  
## 287 12.93 20.1  
## 288 7.14 23.2  
## 289 7.60 22.3  
## 290 9.51 24.8  
## 291 3.33 28.5  
## 292 3.56 37.3  
## 293 4.70 27.9  
## 294 8.58 23.9  
## 295 10.40 21.7  
## 296 6.27 28.6  
## 297 7.39 27.1  
## 298 15.84 20.3  
## 299 4.97 22.5  
## 300 4.74 29.0  
## 301 6.07 24.8  
## 302 9.50 22.0  
## 303 8.67 26.4

## 304 4.86 33.1  
## 305 6.93 36.1  
## 306 8.93 28.4  
## 307 6.47 33.4  
## 308 7.53 28.2  
## 309 4.54 22.8  
## 310 9.97 20.3  
## 311 12.64 16.1  
## 312 5.98 22.1  
## 313 11.72 19.4  
## 314 7.90 21.6  
## 315 9.28 23.8  
## 316 11.50 16.2  
## 317 18.33 17.8  
## 318 15.94 19.8  
## 319 10.36 23.1  
## 320 12.73 21.0  
## 321 7.20 23.8  
## 322 6.87 23.1  
## 323 7.70 20.4  
## 324 11.74 18.5  
## 325 6.12 25.0  
## 326 5.08 24.6  
## 327 6.15 23.0  
## 328 12.79 22.2  
## 329 9.97 19.3  
## 330 7.34 22.6  
## 331 9.09 19.8  
## 332 12.43 17.1  
## 333 7.83 19.4  
## 334 5.68 22.2  
## 335 6.75 20.7  
## 336 8.01 21.1  
## 337 9.80 19.5  
## 338 10.56 18.5  
## 339 8.51 20.6  
## 340 9.74 19.0  
## 341 9.29 18.7  
## 342 5.49 32.7  
## 343 8.65 16.5  
## 344 7.18 23.9  
## 345 4.61 31.2  
## 346 10.53 17.5  
## 347 12.67 17.2  
## 348 6.36 23.1  
## 349 5.99 24.5  
## 350 5.89 26.6  
## 351 5.98 22.9  
## 352 5.49 24.1  
## 353 7.79 18.6  
## 354 4.50 30.1  
## 355 8.05 18.2  
## 356 5.57 20.6  
## 357 17.60 17.8



## 358 13.27 21.7  
## 359 11.48 22.7  
## 360 12.67 22.6  
## 361 7.79 25.0  
## 362 14.19 19.9  
## 363 10.19 20.8  
## 364 14.64 16.8  
## 365 5.29 21.9  
## 366 7.12 27.5  
## 367 14.00 21.9  
## 368 13.33 23.1  
## 369 3.26 50.0  
## 370 3.73 50.0  
## 371 2.96 50.0  
## 372 9.53 50.0  
## 373 8.88 50.0  
## 374 34.77 13.8  
## 375 37.97 13.8  
## 376 13.44 15.0  
## 377 23.24 13.9  
## 378 21.24 13.3  
## 379 23.69 13.1  
## 380 21.78 10.2  
## 381 17.21 10.4  
## 382 21.08 10.9  
## 383 23.60 11.3  
## 384 24.56 12.3  
## 385 30.63 8.8  
## 386 30.81 7.2  
## 387 28.28 10.5  
## 388 31.99 7.4  
## 389 30.62 10.2  
## 390 20.85 11.5  
## 391 17.11 15.1  
## 392 18.76 23.2  
## 393 25.68 9.7  
## 394 15.17 13.8  
## 395 16.35 12.7  
## 396 17.12 13.1  
## 397 19.37 12.5  
## 398 19.92 8.5  
## 399 30.59 5.0  
## 400 29.97 6.3  
## 401 26.77 5.6  
## 402 20.32 7.2  
## 403 20.31 12.1  
## 404 19.77 8.3  
## 405 27.38 8.5  
## 406 22.98 5.0  
## 407 23.34 11.9  
## 408 12.13 27.9  
## 409 26.40 17.2  
## 410 19.78 27.5  
## 411 10.11 15.0

## 412 21.22 17.2  
## 413 34.37 17.9  
## 414 20.08 16.3  
## 415 36.98 7.0  
## 416 29.05 7.2  
## 417 25.79 7.5  
## 418 26.64 10.4  
## 419 20.62 8.8  
## 420 22.74 8.4  
## 421 15.02 16.7  
## 422 15.70 14.2  
## 423 14.10 20.8  
## 424 23.29 13.4  
## 425 17.16 11.7  
## 426 24.39 8.3  
## 427 15.69 10.2  
## 428 14.52 10.9  
## 429 21.52 11.0  
## 430 24.08 9.5  
## 431 17.64 14.5  
## 432 19.69 14.1  
## 433 12.03 16.1  
## 434 16.22 14.3  
## 435 15.17 11.7  
## 436 23.27 13.4  
## 437 18.05 9.6  
## 438 26.45 8.7  
## 439 34.02 8.4  
## 440 22.88 12.8  
## 441 22.11 10.5  
## 442 19.52 17.1  
## 443 16.59 18.4  
## 444 18.85 15.4  
## 445 23.79 10.8  
## 446 23.98 11.8  
## 447 17.79 14.9  
## 448 16.44 12.6  
## 449 18.13 14.1  
## 450 19.31 13.0  
## 451 17.44 13.4  
## 452 17.73 15.2  
## 453 17.27 16.1  
## 454 16.74 17.8  
## 455 18.71 14.9  
## 456 18.13 14.1  
## 457 19.01 12.7  
## 458 16.94 13.5  
## 459 16.23 14.9  
## 460 14.70 20.0  
## 461 16.42 16.4  
## 462 14.65 17.7  
## 463 13.99 19.5  
## 464 10.29 20.2  
## 465 13.22 21.4

```
## 466 14.13 19.9
## 467 17.15 19.0
## 468 21.32 19.1
## 469 18.13 19.1
## 470 14.76 20.1
## 471 16.29 19.9
## 472 12.87 19.6
## 473 14.36 23.2
## 474 11.66 29.8
## 475 18.14 13.8
## 476 24.10 13.3
## 477 18.68 16.7
## 478 24.91 12.0
## 479 18.03 14.6
## 480 13.11 21.4
## 481 10.74 23.0
## 482 7.74 23.7
## 483 7.01 25.0
## 484 10.42 21.8
## 485 13.34 20.6
## 486 10.58 21.2
## 487 14.98 19.1
## 488 11.45 20.6
## 489 18.06 15.2
## 490 23.97 7.0
## 491 29.68 8.1
## 492 18.07 13.6
## 493 13.35 20.1
## 494 12.01 21.8
## 495 13.59 24.5
## 496 17.60 23.1
## 497 21.14 19.7
## 498 14.10 18.3
## 499 12.92 21.2
## 500 15.10 17.5
## 501 14.33 16.8
## 502 9.67 22.4
## 503 9.08 20.6
## 504 5.64 23.9
## 505 6.48 22.0
## 506 7.88 11.9
```

```
y = Boston$medv
X = Boston
X$medv = NULL
```

Similar to lab 1, write a function that takes a matrix and punches holes (i.e. sets entries equal to NA) randomly with an argument `prob_missing`.

```
puncher = function(M, prob_missing){
  for(i in 1:nrow(M)){
    for(j in 1:ncol(M)) {
      if(runif(1) < prob_missing) {
        M[i,j] = NA
      }
    }
  }
}
```

```

    }
  }
  M
}

```

Create a matrix Xmiss which is X but has missingness with probability of 10%.

```

Xmiss = puncher(X, .10)
Xmiss

```

##	crim	zn	indus	chas	nox	rm	age	dis	rad	tax	ptratio	black
## 1	0.00632	NA	2.31	0	0.5380	6.575	65.2	4.0900	1	296	15.3	396.90
## 2	0.02731	0.0	7.07	0	0.4690	6.421	78.9	4.9671	NA	242	NA	396.90
## 3	0.02729	0.0	7.07	0	0.4690	7.185	61.1	4.9671	2	242	17.8	392.83
## 4	0.03237	0.0	2.18	NA	0.4580	6.998	45.8	6.0622	3	222	NA	394.63
## 5	0.06905	0.0	2.18	NA	0.4580	7.147	54.2	6.0622	3	222	18.7	396.90
## 6	0.02985	0.0	2.18	0	0.4580	6.430	58.7	6.0622	3	NA	18.7	394.12
## 7	NA	12.5	7.87	0	0.5240	6.012	66.6	5.5605	5	311	NA	395.60
## 8	0.14455	12.5	NA	0	0.5240	6.172	96.1	5.9505	NA	311	15.2	396.90
## 9	NA	12.5	7.87	0	0.5240	NA	100.0	6.0821	5	NA	15.2	386.63
## 10	0.17004	NA	7.87	0	0.5240	6.004	85.9	6.5921	5	NA	15.2	386.71
## 11	0.22489	12.5	7.87	0	0.5240	6.377	94.3	6.3467	5	311	15.2	392.52
## 12	0.11747	12.5	7.87	NA	0.5240	6.009	82.9	6.2267	5	NA	15.2	NA
## 13	0.09378	12.5	7.87	0	0.5240	5.889	39.0	5.4509	5	311	15.2	390.50
## 14	0.62976	NA	8.14	0	0.5380	5.949	61.8	4.7075	4	307	21.0	396.90
## 15	0.63796	0.0	8.14	0	0.5380	6.096	84.5	NA	4	NA	21.0	380.02
## 16	0.62739	0.0	8.14	NA	0.5380	5.834	56.5	4.4986	4	307	21.0	395.62
## 17	1.05393	0.0	8.14	NA	NA	5.935	29.3	4.4986	4	307	21.0	386.85
## 18	0.78420	0.0	8.14	0	0.5380	5.990	81.7	4.2579	4	307	21.0	NA
## 19	0.80271	0.0	8.14	0	0.5380	5.456	36.6	3.7965	4	NA	21.0	288.99
## 20	NA	0.0	8.14	0	0.5380	5.727	69.5	3.7965	4	307	21.0	390.95
## 21	1.25179	0.0	8.14	0	0.5380	5.570	98.1	3.7979	NA	307	21.0	376.57
## 22	0.85204	0.0	8.14	0	0.5380	5.965	89.2	4.0123	4	307	21.0	392.53
## 23	1.23247	NA	8.14	0	0.5380	6.142	91.7	3.9769	4	307	NA	396.90
## 24	0.98843	0.0	8.14	0	0.5380	5.813	100.0	NA	4	NA	21.0	NA
## 25	0.75026	0.0	8.14	0	0.5380	NA	94.1	4.3996	4	307	21.0	394.33
## 26	0.84054	0.0	8.14	NA	0.5380	NA	85.7	4.4546	4	NA	21.0	303.42
## 27	0.67191	0.0	8.14	0	0.5380	5.813	90.3	4.6820	NA	307	21.0	NA
## 28	0.95577	0.0	NA	0	0.5380	6.047	88.8	4.4534	4	307	21.0	NA
## 29	0.77299	0.0	8.14	0	0.5380	6.495	94.4	4.4547	4	307	21.0	387.94
## 30	1.00245	0.0	8.14	0	0.5380	6.674	87.3	NA	4	307	21.0	380.23
## 31	1.13081	0.0	8.14	0	0.5380	5.713	NA	4.2330	4	307	21.0	360.17
## 32	1.35472	0.0	8.14	0	NA	6.072	100.0	4.1750	NA	307	21.0	376.73
## 33	1.38799	0.0	8.14	0	0.5380	5.950	82.0	3.9900	4	307	21.0	232.60
## 34	NA	0.0	8.14	0	NA	5.701	NA	3.7872	4	307	21.0	358.77
## 35	1.61282	0.0	8.14	0	0.5380	6.096	96.9	3.7598	4	NA	21.0	248.31
## 36	0.06417	0.0	5.96	NA	0.4990	5.933	68.2	3.3603	5	279	19.2	NA
## 37	NA	0.0	5.96	0	0.4990	5.841	NA	3.3779	5	279	19.2	377.56
## 38	0.08014	0.0	5.96	0	NA	5.850	41.5	NA	5	279	19.2	396.90
## 39	0.17505	0.0	5.96	0	0.4990	5.966	30.2	3.8473	5	279	19.2	NA
## 40	0.02763	75.0	2.95	0	0.4280	6.595	21.8	5.4011	3	252	NA	395.63
## 41	0.03359	75.0	2.95	0	0.4280	7.024	15.8	5.4011	3	NA	NA	NA
## 42	0.12744	0.0	6.91	0	0.4480	6.770	2.9	5.7209	3	233	17.9	385.41
## 43	NA	0.0	6.91	0	0.4480	NA	6.6	5.7209	3	233	17.9	383.37
## 44	0.15936	0.0	6.91	0	0.4480	6.211	6.5	5.7209	3	233	17.9	394.46

## 45	0.12269	NA	6.91	0	0.4480	6.069	NA	5.7209	3	233	17.9	389.39
## 46	0.17142	0.0	6.91	NA	0.4480	5.682	33.8	5.1004	3	233	17.9	396.90
## 47	0.18836	0.0	6.91	0	0.4480	5.786	33.3	5.1004	3	233	NA	396.90
## 48	0.22927	0.0	6.91	0	0.4480	6.030	85.5	5.6894	3	233	17.9	392.74
## 49	0.25387	0.0	6.91	0	0.4480	5.399	95.3	5.8700	3	233	17.9	396.90
## 50	0.21977	0.0	NA	0	0.4480	5.602	62.0	6.0877	3	233	17.9	NA
## 51	0.08873	21.0	5.64	0	0.4390	5.963	45.7	NA	4	243	16.8	395.56
## 52	0.04337	21.0	5.64	0	0.4390	6.115	63.0	6.8147	4	243	16.8	393.97
## 53	0.05360	21.0	5.64	0	0.4390	6.511	21.1	6.8147	4	243	16.8	396.90
## 54	0.04981	21.0	5.64	0	0.4390	NA	21.4	6.8147	4	243	16.8	NA
## 55	0.01360	75.0	4.00	0	0.4100	5.888	47.6	7.3197	3	469	21.1	396.90
## 56	0.01311	90.0	1.22	NA	NA	NA	21.9	8.6966	5	226	17.9	395.93
## 57	0.02055	85.0	0.74	0	NA	6.383	35.7	9.1876	2	313	17.3	396.90
## 58	0.01432	100.0	1.32	0	0.4110	6.816	40.5	8.3248	5	256	15.1	392.90
## 59	NA	25.0	5.13	0	0.4530	6.145	29.2	7.8148	8	284	19.7	390.68
## 60	0.10328	NA	5.13	0	NA	5.927	47.2	6.9320	8	284	19.7	396.90
## 61	NA	25.0	5.13	NA	0.4530	5.741	66.2	7.2254	8	NA	19.7	395.11
## 62	0.17171	25.0	5.13	NA	0.4530	NA	93.4	6.8185	8	284	19.7	378.08
## 63	0.11027	25.0	5.13	0	NA	6.456	67.8	7.2255	8	284	19.7	396.90
## 64	0.12650	NA	5.13	0	0.4530	6.762	43.4	7.9809	8	284	NA	395.58
## 65	0.01951	17.5	1.38	0	0.4161	7.104	59.5	NA	3	216	18.6	393.24
## 66	0.03584	80.0	NA	0	0.3980	6.290	17.8	6.6115	4	337	16.1	396.90
## 67	0.04379	80.0	3.37	0	0.3980	5.787	NA	6.6115	4	337	NA	396.90
## 68	0.05789	12.5	6.07	0	NA	5.878	21.4	6.4980	4	345	18.9	396.21
## 69	0.13554	NA	6.07	0	0.4090	5.594	36.8	6.4980	4	345	18.9	396.90
## 70	0.12816	12.5	6.07	0	0.4090	5.885	33.0	NA	4	345	18.9	396.90
## 71	0.08826	0.0	10.81	0	0.4130	6.417	6.6	5.2873	4	305	19.2	383.73
## 72	0.15876	0.0	10.81	0	0.4130	5.961	17.5	5.2873	4	305	19.2	376.94
## 73	0.09164	0.0	10.81	0	0.4130	6.065	7.8	5.2873	4	NA	19.2	390.91
## 74	0.19539	0.0	10.81	0	0.4130	6.245	6.2	5.2873	4	305	19.2	377.17
## 75	0.07896	0.0	12.83	0	0.4370	6.273	6.0	4.2515	5	NA	18.7	394.92
## 76	0.09512	0.0	12.83	0	0.4370	6.286	45.0	4.5026	5	398	18.7	383.23
## 77	0.10153	0.0	12.83	0	0.4370	6.279	74.5	4.0522	5	398	18.7	373.66
## 78	0.08707	NA	12.83	0	0.4370	6.140	45.8	4.0905	5	398	18.7	386.96
## 79	0.05646	0.0	12.83	0	0.4370	6.232	53.7	5.0141	5	398	18.7	NA
## 80	0.08387	0.0	12.83	0	0.4370	5.874	36.6	4.5026	5	398	18.7	396.06
## 81	0.04113	25.0	NA	NA	0.4260	6.727	NA	5.4007	4	281	19.0	396.90
## 82	NA	25.0	4.86	0	0.4260	NA	70.4	5.4007	4	281	19.0	395.63
## 83	0.03659	25.0	4.86	0	0.4260	6.302	32.2	5.4007	4	281	19.0	396.90
## 84	0.03551	25.0	4.86	0	0.4260	6.167	46.7	5.4007	4	NA	19.0	390.64
## 85	0.05059	0.0	4.49	NA	0.4490	NA	48.0	4.7794	NA	NA	18.5	396.90
## 86	0.05735	0.0	4.49	0	0.4490	6.630	56.1	NA	NA	247	18.5	392.30
## 87	0.05188	0.0	NA	0	0.4490	6.015	45.1	4.4272	3	NA	18.5	395.99
## 88	0.07151	0.0	4.49	0	NA	6.121	56.8	3.7476	3	247	18.5	395.15
## 89	0.05660	0.0	NA	0	0.4890	NA	NA	NA	2	270	17.8	396.90
## 90	0.05302	0.0	3.41	0	0.4890	7.079	63.1	3.4145	2	270	17.8	396.06
## 91	0.04684	0.0	3.41	0	0.4890	6.417	66.1	3.0923	2	270	17.8	392.18
## 92	0.03932	0.0	3.41	NA	0.4890	6.405	73.9	3.0921	2	270	17.8	NA
## 93	0.04203	NA	15.04	0	0.4640	6.442	53.6	3.6659	4	270	18.2	395.01
## 94	0.02875	28.0	15.04	NA	0.4640	6.211	NA	3.6659	4	NA	18.2	396.33
## 95	0.04294	28.0	15.04	NA	0.4640	6.249	77.3	3.6150	4	270	18.2	396.90
## 96	0.12204	0.0	2.89	0	0.4450	6.625	57.8	3.4952	2	276	18.0	357.98
## 97	NA	0.0	2.89	0	0.4450	6.163	69.6	3.4952	2	276	18.0	391.83
## 98	0.12083	0.0	2.89	0	0.4450	8.069	76.0	3.4952	NA	276	18.0	396.90

## 99	0.08187	0.0	2.89	NA	0.4450	7.820	36.9	3.4952	2	276	18.0	393.53
## 100	0.06860	0.0	2.89	0	0.4450	7.416	62.5	3.4952	2	276	18.0	396.90
## 101	0.14866	0.0	NA	0	0.5200	6.727	79.9	2.7778	5	NA	NA	394.76
## 102	0.11432	NA	8.56	0	0.5200	NA	71.3	2.8561	5	384	20.9	NA
## 103	0.22876	0.0	8.56	0	0.5200	6.405	85.4	2.7147	5	384	20.9	70.80
## 104	0.21161	0.0	8.56	0	0.5200	6.137	87.4	2.7147	5	384	20.9	394.47
## 105	0.13960	0.0	8.56	0	0.5200	6.167	90.0	2.4210	5	384	20.9	392.69
## 106	0.13262	0.0	8.56	0	0.5200	5.851	96.7	NA	5	384	20.9	394.05
## 107	0.17120	0.0	8.56	0	0.5200	NA	91.9	2.2110	5	384	20.9	395.67
## 108	0.13117	0.0	8.56	0	0.5200	NA	85.2	2.1224	NA	384	20.9	387.69
## 109	0.12802	NA	NA	0	0.5200	6.474	NA	2.4329	5	384	20.9	395.24
## 110	0.26363	0.0	8.56	0	NA	6.229	91.2	NA	5	NA	20.9	391.23
## 111	0.10793	0.0	8.56	0	0.5200	6.195	54.4	2.7778	5	384	20.9	393.49
## 112	0.10084	NA	10.01	0	NA	6.715	81.6	2.6775	6	432	17.8	395.59
## 113	0.12329	0.0	10.01	0	0.5470	5.913	92.9	2.3534	6	432	17.8	394.95
## 114	0.22212	0.0	10.01	0	0.5470	NA	95.4	2.5480	6	432	17.8	396.90
## 115	0.14231	0.0	10.01	NA	0.5470	6.254	84.2	2.2565	6	432	17.8	388.74
## 116	NA	0.0	10.01	0	0.5470	5.928	88.2	NA	NA	432	17.8	344.91
## 117	0.13158	0.0	10.01	0	0.5470	6.176	72.5	2.7301	6	432	17.8	393.30
## 118	NA	0.0	10.01	0	0.5470	NA	82.6	2.7474	6	432	17.8	394.51
## 119	0.13058	0.0	10.01	0	0.5470	5.872	73.1	2.4775	6	432	17.8	338.63
## 120	0.14476	0.0	10.01	0	0.5470	5.731	NA	2.7592	6	NA	17.8	391.50
## 121	0.06899	0.0	25.65	0	NA	5.870	69.7	2.2577	2	188	19.1	389.15
## 122	0.07165	0.0	25.65	0	0.5810	6.004	84.1	2.1974	2	188	19.1	377.67
## 123	0.09299	0.0	25.65	0	0.5810	5.961	92.9	2.0869	2	188	19.1	378.09
## 124	0.15038	0.0	25.65	0	0.5810	5.856	97.0	1.9444	2	NA	19.1	370.31
## 125	0.09849	0.0	25.65	0	0.5810	5.879	95.8	2.0063	2	188	19.1	379.38
## 126	0.16902	0.0	25.65	0	0.5810	5.986	88.4	1.9929	2	188	19.1	NA
## 127	0.38735	0.0	25.65	0	0.5810	5.613	NA	NA	2	188	NA	359.29
## 128	0.25915	0.0	21.89	0	0.6240	5.693	96.0	1.7883	4	437	21.2	392.11
## 129	0.32543	0.0	21.89	0	0.6240	6.431	98.8	1.8125	4	437	21.2	NA
## 130	0.88125	0.0	21.89	0	0.6240	5.637	NA	1.9799	NA	437	NA	396.90
## 131	0.34006	0.0	21.89	0	0.6240	6.458	98.9	2.1185	4	437	21.2	395.04
## 132	1.19294	0.0	21.89	0	0.6240	6.326	NA	2.2710	4	437	21.2	396.90
## 133	0.59005	0.0	21.89	0	0.6240	6.372	97.9	2.3274	4	437	21.2	NA
## 134	0.32982	0.0	NA	0	0.6240	5.822	NA	NA	4	437	21.2	388.69
## 135	0.97617	0.0	21.89	0	0.6240	NA	98.4	2.3460	4	437	21.2	262.76
## 136	0.55778	0.0	21.89	0	0.6240	6.335	98.2	2.1107	4	437	21.2	394.67
## 137	NA	0.0	21.89	0	0.6240	5.942	93.5	1.9669	NA	NA	21.2	378.25
## 138	0.35233	0.0	21.89	0	0.6240	6.454	98.4	1.8498	4	437	NA	394.08
## 139	0.24980	0.0	21.89	NA	0.6240	NA	98.2	1.6686	4	437	21.2	392.04
## 140	0.54452	0.0	NA	0	0.6240	6.151	97.9	1.6687	4	437	21.2	396.90
## 141	NA	0.0	NA	0	0.6240	6.174	93.6	1.6119	NA	437	21.2	NA
## 142	1.62864	NA	21.89	0	0.6240	5.019	100.0	1.4394	NA	437	21.2	396.90
## 143	NA	0.0	19.58	1	0.8710	NA	100.0	1.3216	5	403	14.7	396.90
## 144	4.09740	NA	19.58	0	0.8710	5.468	100.0	1.4118	5	403	NA	396.90
## 145	2.77974	0.0	19.58	0	0.8710	4.903	97.8	1.3459	5	NA	14.7	396.90
## 146	NA	0.0	19.58	NA	NA	6.130	100.0	1.4191	5	NA	14.7	172.91
## 147	2.15505	0.0	19.58	0	0.8710	5.628	100.0	1.5166	5	403	14.7	169.27
## 148	2.36862	0.0	19.58	0	0.8710	4.926	95.7	1.4608	NA	403	14.7	391.71
## 149	2.33099	0.0	19.58	0	0.8710	5.186	93.8	1.5296	5	403	14.7	356.99
## 150	2.73397	0.0	19.58	0	0.8710	5.597	94.9	1.5257	5	403	14.7	351.85
## 151	1.65660	0.0	19.58	0	0.8710	6.122	97.3	1.6180	5	403	14.7	372.80
## 152	1.49632	0.0	NA	0	0.8710	5.404	100.0	1.5916	5	403	14.7	341.60

## 153	1.12658	0.0	19.58	1	0.8710	5.012	88.0	1.6102	5	403	14.7	343.28
## 154	2.14918	0.0	19.58	0	0.8710	5.709	98.5	NA	5	403	14.7	261.95
## 155	1.41385	0.0	19.58	1	0.8710	6.129	96.0	1.7494	5	403	14.7	321.02
## 156	NA	0.0	19.58	1	0.8710	6.152	82.6	1.7455	5	403	14.7	88.01
## 157	2.44668	0.0	19.58	0	0.8710	5.272	94.0	1.7364	5	403	14.7	88.63
## 158	1.22358	NA	19.58	0	0.6050	6.943	97.4	1.8773	5	403	14.7	363.43
## 159	1.34284	NA	19.58	0	0.6050	6.066	100.0	1.7573	5	403	14.7	353.89
## 160	1.42502	0.0	19.58	NA	0.8710	6.510	100.0	NA	5	403	NA	364.31
## 161	1.27346	0.0	19.58	1	0.6050	6.250	92.6	1.7984	5	403	NA	338.92
## 162	1.46336	0.0	19.58	0	0.6050	7.489	90.8	1.9709	5	403	NA	374.43
## 163	1.83377	0.0	19.58	1	0.6050	7.802	98.2	2.0407	5	NA	14.7	389.61
## 164	1.51902	0.0	19.58	1	NA	8.375	93.9	NA	5	NA	14.7	388.45
## 165	2.24236	NA	19.58	0	0.6050	5.854	NA	2.4220	5	403	14.7	395.11
## 166	NA	0.0	19.58	0	0.6050	6.101	93.0	2.2834	5	403	14.7	240.16
## 167	2.01019	0.0	19.58	0	0.6050	7.929	96.2	2.0459	5	403	14.7	369.30
## 168	1.80028	0.0	19.58	0	0.6050	NA	79.2	2.4259	5	NA	14.7	227.61
## 169	2.30040	0.0	19.58	NA	0.6050	6.319	96.1	2.1000	5	403	14.7	297.09
## 170	2.44953	0.0	19.58	0	0.6050	6.402	95.2	2.2625	5	403	14.7	330.04
## 171	NA	0.0	19.58	0	0.6050	NA	94.6	2.4259	NA	403	14.7	292.29
## 172	NA	0.0	19.58	0	0.6050	5.880	NA	2.3887	5	403	14.7	348.13
## 173	0.13914	0.0	4.05	0	NA	NA	88.5	2.5961	5	296	16.6	396.90
## 174	0.09178	0.0	NA	0	0.5100	6.416	84.1	2.6463	5	296	16.6	395.50
## 175	0.08447	0.0	NA	0	0.5100	NA	68.7	2.7019	5	296	16.6	393.23
## 176	0.06664	0.0	4.05	0	0.5100	6.546	33.1	3.1323	5	296	16.6	390.96
## 177	NA	0.0	4.05	0	0.5100	6.020	NA	3.5549	5	296	16.6	393.23
## 178	0.05425	0.0	4.05	0	0.5100	6.315	73.4	3.3175	5	296	16.6	395.60
## 179	NA	0.0	4.05	0	0.5100	6.860	74.4	2.9153	5	296	16.6	391.27
## 180	0.05780	0.0	2.46	0	0.4880	6.980	58.4	2.8290	3	193	17.8	396.90
## 181	0.06588	0.0	2.46	0	NA	7.765	83.3	2.7410	3	NA	17.8	395.56
## 182	0.06888	0.0	NA	0	0.4880	6.144	62.2	2.5979	3	NA	17.8	396.90
## 183	0.09103	0.0	2.46	0	0.4880	7.155	92.2	NA	3	193	17.8	394.12
## 184	0.10008	0.0	2.46	0	0.4880	6.563	95.6	2.8470	NA	193	17.8	396.90
## 185	0.08308	0.0	2.46	0	0.4880	5.604	89.8	2.9879	3	193	17.8	391.00
## 186	0.06047	0.0	2.46	0	0.4880	6.153	68.8	3.2797	3	NA	17.8	387.11
## 187	0.05602	0.0	2.46	0	0.4880	NA	53.6	3.1992	3	193	17.8	392.63
## 188	0.07875	45.0	3.44	0	0.4370	NA	41.1	3.7886	5	398	15.2	393.87
## 189	0.12579	45.0	3.44	0	0.4370	6.556	29.1	4.5667	5	398	15.2	382.84
## 190	0.08370	45.0	3.44	0	0.4370	7.185	38.9	NA	NA	398	15.2	396.90
## 191	0.09068	45.0	3.44	0	0.4370	NA	21.5	6.4798	5	398	15.2	377.68
## 192	NA	45.0	3.44	NA	0.4370	6.739	30.8	6.4798	5	398	15.2	389.71
## 193	0.08664	45.0	3.44	0	0.4370	7.178	26.3	6.4798	NA	398	15.2	390.49
## 194	0.02187	60.0	2.93	0	0.4010	6.800	9.9	6.2196	1	265	15.6	NA
## 195	0.01439	60.0	2.93	0	0.4010	NA	NA	6.2196	1	265	15.6	376.70
## 196	0.01381	80.0	0.46	0	0.4220	7.875	32.0	5.6484	4	NA	14.4	394.23
## 197	0.04011	80.0	1.52	NA	0.4040	7.287	34.1	7.3090	2	329	12.6	396.90
## 198	0.04666	80.0	1.52	NA	0.4040	7.107	36.6	7.3090	2	329	12.6	354.31
## 199	NA	80.0	1.52	0	0.4040	7.274	38.3	NA	2	329	NA	392.20
## 200	0.03150	95.0	1.47	0	0.4030	6.975	15.3	7.6534	3	402	17.0	396.90
## 201	0.01778	95.0	1.47	0	0.4030	7.135	NA	7.6534	3	402	17.0	384.30
## 202	0.03445	82.5	2.03	0	0.4150	6.162	38.4	6.2700	2	348	14.7	393.77
## 203	0.02177	82.5	2.03	0	0.4150	7.610	15.7	6.2700	2	348	14.7	395.38
## 204	0.03510	95.0	2.68	0	0.4161	7.853	33.2	5.1180	4	NA	14.7	392.78
## 205	0.02009	95.0	2.68	0	0.4161	8.034	31.9	5.1180	4	224	NA	390.55
## 206	0.13642	0.0	10.59	0	NA	5.891	22.3	3.9454	4	277	18.6	396.90

##	207	0.22969	0.0	10.59	0	0.4890	6.326	52.5	4.3549	4	277	NA	394.87
##	208	0.25199	0.0	10.59	0	0.4890	5.783	72.7	4.3549	4	277	18.6	389.43
##	209	0.13587	0.0	10.59	1	0.4890	6.064	NA	4.2392	4	277	18.6	381.32
##	210	0.43571	0.0	10.59	1	0.4890	5.344	100.0	NA	4	NA	18.6	396.90
##	211	0.17446	0.0	10.59	1	0.4890	5.960	92.1	3.8771	4	277	NA	393.25
##	212	0.37578	0.0	10.59	1	0.4890	5.404	88.6	3.6650	4	277	18.6	NA
##	213	0.21719	0.0	10.59	1	0.4890	5.807	53.8	3.6526	4	277	18.6	390.94
##	214	0.14052	0.0	10.59	0	0.4890	6.375	NA	NA	4	277	NA	385.81
##	215	0.28955	0.0	10.59	0	0.4890	5.412	9.8	3.5875	4	277	NA	348.93
##	216	0.19802	0.0	10.59	0	0.4890	6.182	42.4	3.9454	4	277	18.6	393.63
##	217	NA	0.0	13.89	1	0.5500	5.888	56.0	3.1121	5	276	16.4	392.80
##	218	0.07013	NA	13.89	0	0.5500	6.642	85.1	3.4211	5	276	16.4	392.78
##	219	0.11069	0.0	13.89	1	NA	5.951	NA	2.8893	5	276	16.4	396.90
##	220	0.11425	0.0	13.89	1	0.5500	6.373	92.4	3.3633	5	276	16.4	393.74
##	221	0.35809	0.0	6.20	1	0.5070	6.951	88.5	2.8617	8	307	17.4	391.70
##	222	0.40771	0.0	6.20	1	0.5070	NA	91.3	3.0480	8	307	17.4	395.24
##	223	0.62356	0.0	6.20	1	0.5070	6.879	77.7	3.2721	8	307	17.4	390.39
##	224	0.61470	NA	6.20	0	0.5070	6.618	80.8	3.2721	8	307	17.4	396.90
##	225	0.31533	0.0	6.20	0	0.5040	8.266	NA	2.8944	8	307	17.4	385.05
##	226	0.52693	0.0	6.20	0	0.5040	8.725	NA	2.8944	8	307	17.4	382.00
##	227	0.38214	0.0	6.20	0	0.5040	8.040	86.5	3.2157	8	307	17.4	387.38
##	228	0.41238	0.0	6.20	0	0.5040	7.163	79.9	3.2157	NA	307	17.4	372.08
##	229	0.29819	NA	6.20	0	0.5040	7.686	17.0	3.3751	8	307	17.4	377.51
##	230	0.44178	0.0	6.20	0	0.5040	6.552	21.4	3.3751	8	307	17.4	380.34
##	231	0.53700	NA	NA	0	0.5040	5.981	68.1	3.6715	8	307	NA	378.35
##	232	0.46296	0.0	6.20	0	0.5040	7.412	NA	3.6715	8	307	17.4	376.14
##	233	0.57529	NA	NA	0	0.5070	8.337	73.3	3.8384	8	307	17.4	385.91
##	234	0.33147	0.0	6.20	0	0.5070	8.247	70.4	3.6519	8	307	17.4	378.95
##	235	0.44791	0.0	6.20	1	0.5070	6.726	NA	3.6519	8	307	17.4	NA
##	236	0.33045	0.0	NA	0	0.5070	6.086	61.5	3.6519	8	307	17.4	376.75
##	237	0.52058	0.0	6.20	1	0.5070	6.631	76.5	4.1480	8	307	17.4	388.45
##	238	0.51183	0.0	6.20	0	0.5070	7.358	71.6	4.1480	NA	307	17.4	390.07
##	239	0.08244	NA	4.93	0	0.4280	6.481	18.5	6.1899	6	300	16.6	379.41
##	240	0.09252	30.0	4.93	0	0.4280	6.606	42.2	6.1899	6	300	16.6	383.78
##	241	NA	30.0	4.93	0	0.4280	6.897	NA	6.3361	6	300	16.6	391.25
##	242	0.10612	30.0	4.93	0	0.4280	6.095	65.1	NA	NA	300	16.6	394.62
##	243	0.10290	30.0	4.93	0	0.4280	6.358	NA	7.0355	NA	300	16.6	372.75
##	244	0.12757	30.0	4.93	0	0.4280	6.393	7.8	7.0355	6	300	16.6	374.71
##	245	0.20608	22.0	5.86	0	0.4310	5.593	76.5	7.9549	7	330	19.1	372.49
##	246	0.19133	22.0	5.86	0	0.4310	5.605	70.2	7.9549	NA	330	NA	389.13
##	247	0.33983	22.0	5.86	0	0.4310	6.108	34.9	NA	NA	330	19.1	390.18
##	248	0.19657	22.0	5.86	NA	0.4310	NA	79.2	8.0555	NA	330	19.1	376.14
##	249	0.16439	22.0	5.86	0	0.4310	6.433	49.1	7.8265	7	330	19.1	374.71
##	250	0.19073	NA	5.86	0	0.4310	6.718	17.5	7.8265	7	330	19.1	393.74
##	251	NA	22.0	5.86	0	0.4310	6.487	13.0	7.3967	7	330	19.1	396.28
##	252	0.21409	22.0	NA	NA	0.4310	6.438	8.9	NA	7	330	19.1	377.07
##	253	0.08221	22.0	5.86	0	0.4310	6.957	6.8	8.9067	7	330	19.1	NA
##	254	0.36894	22.0	5.86	0	0.4310	8.259	8.4	8.9067	7	330	19.1	396.90
##	255	0.04819	80.0	3.64	0	0.3920	6.108	32.0	9.2203	1	315	16.4	392.89
##	256	0.03548	80.0	3.64	0	0.3920	5.876	NA	9.2203	1	315	16.4	395.18
##	257	0.01538	90.0	3.75	NA	0.3940	7.454	34.2	6.3361	3	244	15.9	386.34
##	258	0.61154	20.0	3.97	0	0.6470	8.704	86.9	1.8010	5	264	13.0	389.70
##	259	0.66351	20.0	3.97	0	0.6470	NA	100.0	1.8946	5	264	13.0	383.29
##	260	0.65665	20.0	3.97	0	NA	6.842	100.0	2.0107	5	264	13.0	391.93



## 261	0.54011	20.0	3.97	0 0.6470	7.203	81.8	2.1121	5 264	13.0	392.80
## 262	0.53412	20.0	NA	0 0.6470	7.520	89.4	2.1398	5 264	13.0	388.37
## 263	0.52014	20.0	3.97	0 0.6470	8.398	NA	2.2885	5 264	13.0	386.86
## 264	0.82526	20.0	3.97	0 0.6470	NA	94.5	2.0788	5 264	13.0	393.42
## 265	0.55007	20.0	3.97	0 0.6470	7.206	91.6	1.9301	5 264	13.0	387.89
## 266	0.76162	NA	3.97	0 0.6470	5.560	62.8	1.9865	5 264	13.0	392.40
## 267	0.78570	20.0	3.97	0 0.6470	7.014	84.6	2.1329	NA 264	13.0	384.07
## 268	0.57834	20.0	3.97	0 0.5750	8.297	67.0	2.4216	5 264	NA	384.54
## 269	0.54050	20.0	3.97	0 0.5750	7.470	52.6	2.8720	5 264	13.0	390.30
## 270	0.09065	20.0	6.96	1 0.4640	5.920	61.5	3.9175	3 223	18.6	391.34
## 271	0.29916	20.0	6.96	0	NA 5.856	NA	4.4290	3 223	18.6	388.65
## 272	0.16211	NA	NA	0 0.4640	6.240	16.3	4.4290	3 NA	18.6	396.90
## 273	0.11460	20.0	6.96	0 0.4640	6.538	58.7	3.9175	3 223	18.6	394.96
## 274	0.22188	20.0	6.96	1 0.4640	7.691	51.8	4.3665	3 NA	18.6	390.77
## 275	0.05644	NA	6.41	1 0.4470	6.758	32.9	4.0776	4 254	17.6	396.90
## 276	0.09604	40.0	NA	0 0.4470	6.854	42.8	4.2673	4 NA	NA	396.90
## 277	NA	40.0	6.41	1 0.4470	7.267	49.0	4.7872	4 254	17.6	389.25
## 278	0.06127	NA	NA	1 0.4470	6.826	27.6	4.8628	4 254	17.6	393.45
## 279	0.07978	40.0	NA	0 0.4470	NA	32.1	4.1403	4 254	17.6	NA
## 280	0.21038	20.0	NA	0 0.4429	6.812	32.2	NA	5 216	14.9	396.90
## 281	0.03578	20.0	3.33	0 0.4429	7.820	64.5	4.6947	5 216	14.9	387.31
## 282	0.03705	20.0	3.33	0 0.4429	6.968	37.2	5.2447	NA 216	14.9	392.23
## 283	0.06129	20.0	3.33	1 0.4429	7.645	49.7	NA	5 216	14.9	377.07
## 284	0.01501	90.0	1.21	1 0.4010	7.923	24.8	NA	1 198	13.6	395.52
## 285	0.00906	NA	2.97	0 0.4000	7.088	20.8	7.3073	1 285	15.3	394.72
## 286	0.01096	55.0	2.25	0 0.3890	6.453	31.9	7.3073	1 300	15.3	394.72
## 287	0.01965	80.0	1.76	0 0.3850	6.230	31.5	9.0892	1 241	18.2	341.60
## 288	NA	52.5	5.32	0 0.4050	6.209	31.3	7.3172	6 293	16.6	396.90
## 289	0.04590	52.5	5.32	0 0.4050	6.315	45.6	7.3172	6 293	16.6	NA
## 290	0.04297	52.5	5.32	0 0.4050	6.565	22.9	7.3172	6 293	16.6	371.72
## 291	0.03502	80.0	4.95	0 0.4110	6.861	27.9	NA	4 NA	NA	396.90
## 292	0.07886	NA	4.95	0 0.4110	7.148	27.7	NA	4 245	19.2	396.90
## 293	0.03615	80.0	4.95	0 0.4110	6.630	23.4	5.1167	4 245	19.2	396.90
## 294	NA	0.0	13.92	0 0.4370	6.127	18.4	5.5027	4 289	16.0	NA
## 295	0.08199	0.0	13.92	0 0.4370	6.009	42.3	NA	4 NA	16.0	396.90
## 296	0.12932	0.0	13.92	0 0.4370	6.678	31.1	5.9604	4 289	16.0	NA
## 297	0.05372	0.0	13.92	NA 0.4370	6.549	51.0	5.9604	4 289	16.0	392.85
## 298	0.14103	0.0	13.92	NA 0.4370	5.790	58.0	6.3200	4 289	16.0	396.90
## 299	0.06466	NA	2.24	0 0.4000	6.345	20.1	7.8278	5 358	14.8	368.24
## 300	0.05561	70.0	2.24	0 0.4000	7.041	10.0	NA	5 358	14.8	371.58
## 301	0.04417	70.0	2.24	0 0.4000	6.871	47.4	7.8278	5 358	14.8	390.86
## 302	0.03537	34.0	NA	0 0.4330	6.590	40.4	5.4917	7 NA	16.1	395.75
## 303	0.09266	34.0	6.09	NA 0.4330	6.495	18.4	5.4917	7 329	16.1	383.61
## 304	0.10000	34.0	6.09	0 0.4330	6.982	NA	5.4917	7 329	16.1	NA
## 305	0.05515	33.0	2.18	0 0.4720	7.236	41.1	4.0220	7 222	18.4	393.68
## 306	0.05479	33.0	2.18	0 0.4720	6.616	58.1	3.3700	7 222	18.4	393.36
## 307	0.07503	33.0	NA	0 0.4720	7.420	71.9	3.0992	7 222	18.4	396.90
## 308	0.04932	33.0	2.18	0 0.4720	NA	70.3	3.1827	7 222	18.4	NA
## 309	0.49298	0.0	9.90	0 0.5440	6.635	NA	3.3175	NA 304	18.4	396.90
## 310	0.34940	0.0	9.90	0 0.5440	5.972	76.7	3.1025	4 304	18.4	396.24
## 311	2.63548	0.0	9.90	0 0.5440	4.973	37.8	2.5194	4 304	18.4	NA
## 312	NA	0.0	9.90	0	NA 6.122	52.8	2.6403	4 304	18.4	NA
## 313	0.26169	NA	9.90	0 0.5440	6.023	NA	2.8340	4 304	18.4	NA
## 314	0.26938	0.0	9.90	0 0.5440	6.266	82.8	3.2628	4 304	NA	393.39

## 315	0.36920	0.0	9.90	0	0.5440	6.567	87.3	NA	4	304	18.4	395.69
## 316	0.25356	0.0	9.90	0	0.5440	5.705	77.7	3.9450	4	304	18.4	396.42
## 317	0.31827	0.0	9.90	0	0.5440	5.914	83.2	3.9986	NA	NA	18.4	390.70
## 318	NA	0.0	9.90	NA	0.5440	5.782	71.7	4.0317	4	304	18.4	396.90
## 319	0.40202	0.0	9.90	0	0.5440	6.382	67.2	3.5325	4	304	18.4	395.21
## 320	0.47547	0.0	9.90	NA	NA	6.113	58.8	4.0019	4	304	18.4	396.23
## 321	0.16760	0.0	7.38	0	0.4930	6.426	52.3	4.5404	5	287	19.6	396.90
## 322	0.18159	0.0	7.38	0	0.4930	6.376	54.3	4.5404	5	287	19.6	396.90
## 323	0.35114	0.0	7.38	0	0.4930	6.041	49.9	4.7211	5	287	19.6	396.90
## 324	0.28392	0.0	7.38	0	0.4930	5.708	74.3	4.7211	NA	287	19.6	391.13
## 325	0.34109	0.0	7.38	0	0.4930	6.415	40.1	NA	NA	287	19.6	396.90
## 326	0.19186	NA	7.38	0	NA	6.431	14.7	5.4159	5	287	19.6	393.68
## 327	0.30347	0.0	7.38	0	0.4930	NA	28.9	5.4159	5	287	19.6	396.90
## 328	0.24103	NA	NA	0	0.4930	6.083	43.7	5.4159	5	287	19.6	396.90
## 329	0.06617	NA	3.24	0	0.4600	5.868	25.8	5.2146	4	NA	16.9	382.44
## 330	0.06724	0.0	3.24	0	0.4600	6.333	17.2	5.2146	4	430	16.9	375.21
## 331	0.04544	0.0	3.24	0	0.4600	6.144	32.2	5.8736	4	430	16.9	NA
## 332	0.05023	NA	6.06	0	0.4379	5.706	NA	6.6407	1	NA	16.9	394.02
## 333	0.03466	35.0	6.06	0	0.4379	6.031	23.3	6.6407	1	304	16.9	362.25
## 334	0.05083	0.0	5.19	0	NA	6.316	38.1	6.4584	5	224	NA	389.71
## 335	0.03738	NA	5.19	0	0.5150	NA	38.5	6.4584	5	224	20.2	389.40
## 336	0.03961	0.0	5.19	NA	0.5150	6.037	34.5	5.9853	NA	224	20.2	396.90
## 337	0.03427	NA	5.19	NA	0.5150	5.869	46.3	5.2311	5	224	20.2	396.90
## 338	NA	0.0	NA	0	0.5150	5.895	59.6	5.6150	5	224	20.2	394.81
## 339	0.03306	0.0	5.19	0	0.5150	6.059	37.3	4.8122	5	224	20.2	396.14
## 340	0.05497	0.0	5.19	0	NA	5.985	45.4	4.8122	5	224	20.2	396.90
## 341	0.06151	0.0	5.19	0	0.5150	5.968	58.5	4.8122	5	224	20.2	396.90
## 342	0.01301	35.0	NA	NA	0.4420	7.241	49.3	7.0379	1	284	15.5	394.74
## 343	0.02498	0.0	NA	NA	NA	6.540	59.7	6.2669	1	422	15.9	389.96
## 344	0.02543	NA	3.78	0	0.4840	6.696	56.4	5.7321	5	370	17.6	396.90
## 345	0.03049	55.0	3.78	0	0.4840	6.874	28.1	NA	5	370	17.6	387.97
## 346	0.03113	0.0	4.39	0	0.4420	6.014	48.5	8.0136	3	352	18.8	385.64
## 347	0.06162	0.0	4.39	0	0.4420	NA	52.3	8.0136	3	352	18.8	364.61
## 348	0.01870	85.0	4.15	NA	0.4290	6.516	27.7	8.5353	4	351	17.9	392.43
## 349	0.01501	NA	2.01	0	0.4350	6.635	29.7	8.3440	4	280	17.0	390.94
## 350	0.02899	40.0	1.25	0	0.4290	6.939	34.5	8.7921	1	335	NA	389.85
## 351	0.06211	40.0	1.25	0	0.4290	NA	44.4	8.7921	1	335	19.7	396.90
## 352	0.07950	NA	NA	0	0.4110	6.579	35.9	10.7103	4	411	18.3	370.78
## 353	0.07244	60.0	NA	0	NA	5.884	18.5	10.7103	4	411	18.3	392.33
## 354	0.01709	90.0	2.02	0	0.4100	6.728	36.1	12.1265	5	187	17.0	384.46
## 355	0.04301	NA	1.91	0	0.4130	5.663	21.9	10.5857	4	334	22.0	382.80
## 356	0.10659	80.0	NA	0	0.4130	5.936	19.5	10.5857	4	334	22.0	NA
## 357	8.98296	0.0	18.10	1	0.7700	6.212	97.4	2.1222	NA	666	20.2	377.73
## 358	3.84970	0.0	18.10	1	0.7700	6.395	91.0	2.5052	24	666	20.2	391.34
## 359	NA	0.0	18.10	1	NA	6.127	83.4	2.7227	24	666	20.2	395.43
## 360	NA	0.0	18.10	0	0.7700	6.112	81.3	2.5091	24	NA	20.2	390.74
## 361	4.54192	0.0	18.10	0	0.7700	6.398	NA	2.5182	NA	666	20.2	374.56
## 362	3.83684	0.0	18.10	0	NA	6.251	91.1	2.2955	24	666	20.2	350.65
## 363	3.67822	0.0	18.10	0	0.7700	5.362	NA	2.1036	24	666	NA	380.79
## 364	4.22239	0.0	18.10	1	0.7700	NA	89.0	1.9047	24	666	20.2	353.04
## 365	3.47428	0.0	18.10	1	0.7180	8.780	82.9	1.9047	24	666	20.2	354.55
## 366	NA	0.0	NA	0	0.7180	3.561	87.9	1.6132	24	666	20.2	354.70
## 367	3.69695	0.0	18.10	0	0.7180	4.963	91.4	1.7523	24	666	20.2	316.03
## 368	13.52220	0.0	18.10	0	0.6310	3.863	100.0	1.5106	24	666	20.2	131.42

## 369	NA	0.0	18.10	0	0.6310	4.970	100.0	1.3325	24	666	20.2	375.52
## 370	5.66998	0.0	18.10	1	0.6310	6.683	96.8	1.3567	24	666	20.2	375.33
## 371	6.53876	NA	18.10	1	0.6310	7.016	97.5	1.2024	NA	NA	20.2	392.05
## 372	NA	NA	18.10	0	0.6310	6.216	100.0	1.1691	24	666	20.2	366.15
## 373	8.26725	0.0	18.10	1	NA	5.875	89.6	1.1296	24	666	20.2	347.88
## 374	11.10810	0.0	18.10	NA	0.6680	4.906	100.0	1.1742	24	666	20.2	396.90
## 375	18.49820	0.0	18.10	0	0.6680	4.138	100.0	1.1370	24	666	20.2	396.90
## 376	19.60910	0.0	18.10	0	0.6710	7.313	97.9	1.3163	24	666	20.2	396.90
## 377	15.28800	0.0	18.10	NA	0.6710	6.649	93.3	1.3449	24	666	20.2	363.02
## 378	9.82349	0.0	18.10	0	0.6710	6.794	98.8	1.3580	24	666	20.2	396.90
## 379	NA	0.0	18.10	0	0.6710	6.380	96.2	NA	24	666	20.2	396.90
## 380	17.86670	0.0	18.10	0	0.6710	6.223	100.0	1.3861	24	666	20.2	393.74
## 381	88.97620	NA	18.10	0	0.6710	6.968	NA	1.4165	24	666	20.2	396.90
## 382	15.87440	0.0	18.10	0	0.6710	6.545	99.1	1.5192	24	666	20.2	396.90
## 383	9.18702	0.0	18.10	NA	0.7000	5.536	100.0	1.5804	24	666	20.2	396.90
## 384	7.99248	0.0	18.10	0	0.7000	5.520	100.0	1.5331	24	666	20.2	396.90
## 385	20.08490	0.0	18.10	0	0.7000	NA	91.2	1.4395	24	666	NA	285.83
## 386	16.81180	0.0	18.10	NA	0.7000	5.277	98.1	1.4261	24	NA	20.2	396.90
## 387	24.39380	0.0	18.10	0	0.7000	4.652	100.0	1.4672	24	666	NA	396.90
## 388	22.59710	0.0	18.10	0	0.7000	5.000	89.5	1.5184	24	NA	20.2	396.90
## 389	14.33370	0.0	18.10	0	NA	4.880	100.0	1.5895	24	666	20.2	372.92
## 390	8.15174	0.0	18.10	0	0.7000	5.390	98.9	1.7281	24	666	20.2	NA
## 391	6.96215	0.0	18.10	0	0.7000	5.713	97.0	1.9265	24	666	20.2	NA
## 392	5.29305	0.0	18.10	0	0.7000	6.051	82.5	2.1678	24	666	20.2	378.38
## 393	NA	0.0	18.10	0	0.7000	5.036	97.0	1.7700	24	666	20.2	396.90
## 394	8.64476	0.0	18.10	0	0.6930	NA	92.6	1.7912	24	NA	20.2	NA
## 395	13.35980	0.0	18.10	0	NA	5.887	94.7	1.7821	24	666	20.2	396.90
## 396	8.71675	0.0	18.10	0	0.6930	6.471	NA	1.7257	24	666	20.2	391.98
## 397	5.87205	NA	18.10	0	0.6930	6.405	96.0	NA	24	666	20.2	396.90
## 398	7.67202	0.0	18.10	0	0.6930	5.747	98.9	1.6334	24	666	20.2	393.10
## 399	38.35180	0.0	18.10	NA	0.6930	5.453	100.0	1.4896	24	666	20.2	396.90
## 400	9.91655	0.0	18.10	0	0.6930	5.852	77.8	1.5004	24	666	20.2	338.16
## 401	25.04610	0.0	18.10	0	0.6930	5.987	100.0	1.5888	24	666	20.2	396.90
## 402	14.23620	0.0	18.10	0	0.6930	6.343	100.0	1.5741	24	666	20.2	396.90
## 403	9.59571	0.0	18.10	0	0.6930	6.404	100.0	1.6390	24	666	20.2	376.11
## 404	24.80170	0.0	18.10	0	0.6930	5.349	96.0	1.7028	NA	666	NA	396.90
## 405	41.52920	0.0	18.10	0	0.6930	5.531	85.4	1.6074	24	666	20.2	329.46
## 406	67.92080	0.0	18.10	0	0.6930	5.683	100.0	1.4254	NA	666	20.2	384.97
## 407	20.71620	0.0	NA	0	0.6590	4.138	NA	1.1781	24	666	20.2	370.22
## 408	11.95110	NA	18.10	0	0.6590	5.608	100.0	1.2852	24	666	20.2	NA
## 409	7.40389	0.0	18.10	0	0.5970	NA	97.9	1.4547	NA	666	NA	314.64
## 410	14.43830	0.0	18.10	0	0.5970	6.852	100.0	1.4655	24	666	20.2	179.36
## 411	51.13580	0.0	18.10	0	NA	5.757	100.0	1.4130	24	666	20.2	2.60
## 412	NA	0.0	NA	0	NA	6.657	100.0	1.5275	24	666	20.2	35.05
## 413	18.81100	0.0	18.10	0	0.5970	4.628	NA	NA	24	666	20.2	28.79
## 414	28.65580	0.0	18.10	0	0.5970	5.155	100.0	1.5894	24	666	20.2	210.97
## 415	45.74610	0.0	18.10	0	0.6930	4.519	100.0	1.6582	24	666	20.2	88.27
## 416	18.08460	0.0	18.10	0	0.6790	NA	100.0	1.8347	24	666	20.2	27.25
## 417	10.83420	0.0	18.10	0	0.6790	6.782	90.8	1.8195	NA	666	20.2	21.57
## 418	25.94060	0.0	18.10	0	0.6790	5.304	89.1	1.6475	24	666	20.2	NA
## 419	73.53410	0.0	NA	0	NA	5.957	NA	1.8026	24	666	20.2	16.45
## 420	NA	0.0	18.10	0	0.7180	NA	NA	NA	24	666	20.2	48.45
## 421	NA	0.0	18.10	NA	0.7180	6.411	100.0	1.8589	24	666	20.2	318.75
## 422	7.02259	0.0	18.10	0	0.7180	NA	95.3	1.8746	24	666	20.2	319.98

## 423	12.04820	0.0	18.10	0	0.6140	5.648	87.6	1.9512	24	666	20.2	291.55
## 424	7.05042	0.0	18.10	0	0.6140	6.103	85.1	2.0218	24	666	20.2	2.52
## 425	8.79212	0.0	18.10	0	0.5840	5.565	70.6	2.0635	24	666	NA	3.65
## 426	15.86030	0.0	18.10	0	0.6790	5.896	95.4	1.9096	24	666	20.2	7.68
## 427	12.24720	0.0	18.10	0	0.5840	5.837	59.7	1.9976	24	666	20.2	24.65
## 428	37.66190	0.0	NA	0	0.6790	6.202	78.7	1.8629	24	666	20.2	18.82
## 429	NA	0.0	NA	0	0.6790	6.193	78.1	1.9356	24	666	20.2	96.73
## 430	9.33889	0.0	18.10	0	0.6790	6.380	95.6	1.9682	24	666	20.2	60.72
## 431	8.49213	0.0	18.10	0	0.5840	6.348	86.1	2.0527	24	666	20.2	83.45
## 432	NA	0.0	18.10	0	0.5840	6.833	94.3	2.0882	24	666	NA	81.33
## 433	6.44405	0.0	18.10	NA	0.5840	6.425	74.8	2.2004	24	666	20.2	97.95
## 434	5.58107	0.0	18.10	0	0.7130	6.436	87.9	2.3158	24	666	20.2	100.19
## 435	13.91340	0.0	18.10	0	NA	6.208	95.0	2.2222	24	666	20.2	100.63
## 436	11.16040	NA	18.10	0	0.7400	6.629	94.6	2.1247	NA	666	20.2	109.85
## 437	14.42080	0.0	18.10	0	0.7400	6.461	93.3	NA	24	666	NA	27.49
## 438	15.17720	0.0	18.10	0	NA	6.152	100.0	1.9142	24	666	20.2	9.32
## 439	13.67810	0.0	18.10	0	0.7400	5.935	87.9	1.8206	24	666	20.2	NA
## 440	9.39063	0.0	18.10	0	0.7400	5.627	93.9	1.8172	24	666	20.2	396.90
## 441	22.05110	0.0	18.10	0	0.7400	5.818	92.4	1.8662	24	666	20.2	391.45
## 442	9.72418	0.0	NA	0	0.7400	6.406	97.2	2.0651	24	666	20.2	385.96
## 443	5.66637	0.0	18.10	NA	0.7400	6.219	100.0	NA	24	666	20.2	395.69
## 444	NA	0.0	18.10	0	0.7400	6.485	100.0	NA	NA	666	20.2	NA
## 445	12.80230	0.0	NA	0	0.7400	5.854	96.6	1.8956	24	666	20.2	240.52
## 446	10.67180	NA	18.10	NA	0.7400	NA	NA	NA	24	666	20.2	43.06
## 447	6.28807	0.0	18.10	0	0.7400	6.341	96.4	2.0720	24	666	20.2	318.01
## 448	9.92485	0.0	NA	0	0.7400	6.251	96.6	2.1980	NA	666	20.2	388.52
## 449	9.32909	0.0	18.10	0	NA	NA	98.7	2.2616	24	666	20.2	396.90
## 450	7.52601	0.0	18.10	NA	0.7130	6.417	98.3	2.1850	24	666	20.2	304.21
## 451	6.71772	NA	18.10	0	0.7130	6.749	92.6	2.3236	24	666	20.2	0.32
## 452	5.44114	0.0	18.10	0	0.7130	NA	98.2	2.3552	NA	666	20.2	355.29
## 453	5.09017	0.0	18.10	0	0.7130	6.297	91.8	2.3682	24	666	20.2	385.09
## 454	NA	0.0	18.10	0	0.7130	NA	99.3	2.4527	24	666	20.2	375.87
## 455	9.51363	0.0	18.10	0	0.7130	6.728	94.1	2.4961	24	666	20.2	6.68
## 456	4.75237	0.0	18.10	NA	0.7130	6.525	86.5	2.4358	24	666	20.2	50.92
## 457	4.66883	0.0	18.10	0	NA	NA	87.9	2.5806	24	666	20.2	10.48
## 458	8.20058	0.0	NA	0	0.7130	5.936	80.3	2.7792	24	666	20.2	3.50
## 459	7.75223	0.0	NA	0	0.7130	NA	83.7	2.7831	24	666	20.2	272.21
## 460	6.80117	0.0	18.10	0	0.7130	6.081	84.4	2.7175	24	666	20.2	396.90
## 461	4.81213	NA	18.10	0	0.7130	6.701	NA	2.5975	24	666	20.2	255.23
## 462	3.69311	0.0	18.10	0	0.7130	6.376	88.4	2.5671	24	666	20.2	391.43
## 463	NA	0.0	NA	0	NA	NA	NA	2.7344	24	666	20.2	396.90
## 464	5.82115	0.0	18.10	0	0.7130	6.513	89.9	2.8016	24	666	20.2	NA
## 465	7.83932	0.0	18.10	0	0.6550	6.209	65.4	2.9634	24	666	20.2	396.90
## 466	NA	0.0	18.10	0	0.6550	5.759	48.2	3.0665	24	666	20.2	334.40
## 467	3.77498	NA	18.10	0	0.6550	5.952	84.7	NA	24	666	20.2	22.01
## 468	4.42228	0.0	NA	0	0.5840	NA	94.5	2.5403	24	666	20.2	331.29
## 469	15.57570	0.0	18.10	0	0.5800	5.926	71.0	2.9084	NA	666	20.2	368.74
## 470	13.07510	0.0	NA	0	0.5800	5.713	56.7	2.8237	24	666	20.2	396.90
## 471	4.34879	0.0	18.10	0	0.5800	NA	84.0	3.0334	24	666	20.2	396.90
## 472	4.03841	0.0	18.10	0	0.5320	6.229	90.7	3.0993	24	666	20.2	395.33
## 473	3.56868	0.0	18.10	0	0.5800	6.437	75.0	2.8965	24	666	20.2	393.37
## 474	4.64689	0.0	18.10	NA	0.6140	6.980	NA	2.5329	24	666	NA	NA
## 475	8.05579	0.0	18.10	0	0.5840	5.427	95.4	NA	24	666	NA	352.58
## 476	NA	0.0	18.10	0	0.5840	6.162	97.4	2.2060	24	666	20.2	302.76

##	477	4.87141	0.0	18.10	0	0.6140	6.484	93.6	2.3053	24	666	NA	396.21
##	478	NA	0.0	18.10	NA	0.6140	5.304	97.3	2.1007	24	666	20.2	349.48
##	479	10.23300	0.0	18.10	0	0.6140	6.185	96.7	2.1705	24	666	NA	379.70
##	480	14.33370	0.0	18.10	0	NA	6.229	NA	1.9512	24	666	20.2	383.32
##	481	5.82401	0.0	18.10	0	0.5320	6.242	64.7	3.4242	NA	666	20.2	396.90
##	482	5.70818	NA	18.10	0	0.5320	6.750	74.9	3.3317	24	666	20.2	393.07
##	483	5.73116	0.0	18.10	0	0.5320	7.061	77.0	3.4106	24	666	20.2	395.28
##	484	2.81838	0.0	18.10	0	0.5320	5.762	40.3	4.0983	24	666	20.2	392.92
##	485	2.37857	NA	NA	0	0.5830	5.871	41.9	3.7240	NA	NA	20.2	370.73
##	486	NA	0.0	18.10	0	0.5830	6.312	51.9	3.9917	24	666	20.2	388.62
##	487	5.69175	0.0	18.10	0	0.5830	NA	79.8	3.5459	24	666	20.2	392.68
##	488	4.83567	0.0	18.10	0	0.5830	5.905	53.2	3.1523	24	666	20.2	388.22
##	489	0.15086	0.0	27.74	0	0.6090	5.454	92.7	1.8209	NA	711	NA	395.09
##	490	0.18337	0.0	27.74	0	0.6090	5.414	98.3	1.7554	4	711	20.1	344.05
##	491	0.20746	0.0	27.74	0	0.6090	5.093	98.0	1.8226	4	711	20.1	318.43
##	492	NA	0.0	27.74	0	NA	5.983	98.8	1.8681	4	711	20.1	390.11
##	493	0.11132	0.0	27.74	NA	NA	5.983	83.5	2.1099	4	711	20.1	396.90
##	494	0.17331	0.0	9.69	0	0.5850	NA	54.0	2.3817	6	391	NA	396.90
##	495	0.27957	0.0	9.69	0	0.5850	5.926	42.6	2.3817	6	391	19.2	396.90
##	496	NA	0.0	9.69	0	0.5850	5.670	28.8	2.7986	6	391	19.2	NA
##	497	0.28960	0.0	9.69	0	0.5850	5.390	72.9	2.7986	6	391	19.2	396.90
##	498	0.26838	NA	9.69	0	0.5850	5.794	70.6	2.8927	6	391	19.2	396.90
##	499	0.23912	0.0	9.69	0	0.5850	6.019	65.3	2.4091	6	391	19.2	396.90
##	500	0.17783	0.0	9.69	0	0.5850	5.569	73.5	2.3999	6	NA	19.2	395.77
##	501	0.22438	0.0	9.69	0	0.5850	6.027	79.7	2.4982	6	391	NA	396.90
##	502	0.06263	0.0	11.93	0	0.5730	6.593	69.1	2.4786	1	NA	21.0	391.99
##	503	0.04527	0.0	11.93	0	0.5730	6.120	76.7	2.2875	1	273	21.0	396.90
##	504	NA	0.0	11.93	0	0.5730	6.976	91.0	2.1675	NA	273	21.0	396.90
##	505	0.10959	0.0	11.93	0	0.5730	6.794	89.3	2.3889	1	273	21.0	393.45
##	506	0.04741	0.0	11.93	0	0.5730	6.030	80.8	2.5050	1	273	21.0	396.90
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## 437 18.05  
## 438 26.45  
## 439 34.02  
## 440 22.88  
## 441 22.11  
## 442 19.52  
## 443 16.59  
## 444 NA  
## 445 23.79  
## 446 23.98  
## 447 17.79  
## 448 16.44  
## 449 18.13  
## 450 NA  
## 451 17.44  
## 452 17.73  
## 453 17.27  
## 454 16.74  
## 455 18.71

```

## 456 18.13
## 457 19.01
## 458 16.94
## 459 16.23
## 460 14.70
## 461 16.42
## 462    NA
## 463 13.99
## 464 10.29
## 465 13.22
## 466 14.13
## 467 17.15
## 468 21.32
## 469 18.13
## 470 14.76
## 471    NA
## 472 12.87
## 473 14.36
## 474 11.66
## 475 18.14
## 476 24.10
## 477 18.68
## 478 24.91
## 479 18.03
## 480 13.11
## 481 10.74
## 482  7.74
## 483  7.01
## 484 10.42
## 485 13.34
## 486 10.58
## 487 14.98
## 488 11.45
## 489 18.06
## 490 23.97
## 491 29.68
## 492 18.07
## 493 13.35
## 494    NA
## 495    NA
## 496 17.60
## 497 21.14
## 498 14.10
## 499 12.92
## 500 15.10
## 501 14.33
## 502  9.67
## 503  9.08
## 504  5.64
## 505  6.48
## 506  7.88

```

Use a random forest modeling procedure to iteratively fill in the NA's by predicting each feature of X using every other feature of X. You need to start by filling in the holes to use RF. So fill them in with the average

of the feature.

```
pacman::p_load(missForest)
pacman::p_load(tidyr)
for(i in 1:nrow(Xmiss)){
  for(j in 1:ncol(Xmiss)){
    if (is.na(Xmiss[i,j])) {
      X_mean_imp = Xmiss %>%
        replace_na(as.list(colMeans(Xmiss, na.rm = TRUE)))

      rf_mod = randomForest(X_mean_imp[,j] ~ ., data = X_mean_imp, ntree = 100)

      Xmiss[i,j] = predict(rf_mod, X_mean_imp[i,])
    }
  }
}
```

```
## Warning in randomForest.default(m, y, ...): The response has five or fewer
## unique values. Are you sure you want to do regression?
```

```
## Warning in randomForest.default(m, y, ...): The response has five or fewer
## unique values. Are you sure you want to do regression?
```

```
## Warning in randomForest.default(m, y, ...): The response has five or fewer
## unique values. Are you sure you want to do regression?
```

Xmiss

##	crim	zn	indus	chas	nox	rm	age
## 1	0.006320	13.94473	2.310000	0.00000000	0.5380000	6.575000	65.20000
## 2	0.027310	0.00000	7.070000	0.00000000	0.4690000	6.421000	78.90000
## 3	0.027290	0.00000	7.070000	0.00000000	0.4690000	7.185000	61.10000
## 4	0.032370	0.00000	2.180000	0.09319126	0.4580000	6.998000	45.80000
## 5	0.069050	0.00000	2.180000	0.07406488	0.4580000	7.147000	54.20000
## 6	0.029850	0.00000	2.180000	0.00000000	0.4580000	6.430000	58.70000
## 7	3.571708	12.50000	7.870000	0.00000000	0.5240000	6.012000	66.60000
## 8	0.144550	12.50000	10.949652	0.00000000	0.5240000	6.172000	96.10000
## 9	3.462459	12.50000	7.870000	0.00000000	0.5240000	6.245555	100.00000
## 10	0.170040	11.68067	7.870000	0.00000000	0.5240000	6.004000	85.90000
## 11	0.224890	12.50000	7.870000	0.00000000	0.5240000	6.377000	94.30000
## 12	0.117470	12.50000	7.870000	0.07141421	0.5240000	6.009000	82.90000
## 13	0.093780	12.50000	7.870000	0.00000000	0.5240000	5.889000	39.00000
## 14	0.629760	10.76562	8.140000	0.00000000	0.5380000	5.949000	61.80000
## 15	0.637960	0.00000	8.140000	0.00000000	0.5380000	6.096000	84.50000
## 16	0.627390	0.00000	8.140000	0.07217432	0.5380000	5.834000	56.50000
## 17	1.053930	0.00000	8.140000	0.07264570	0.5485988	5.935000	29.30000
## 18	0.784200	0.00000	8.140000	0.00000000	0.5380000	5.990000	81.70000
## 19	0.802710	0.00000	8.140000	0.00000000	0.5380000	5.456000	36.60000
## 20	3.430794	0.00000	8.140000	0.00000000	0.5380000	5.727000	69.50000
## 21	1.251790	0.00000	8.140000	0.00000000	0.5380000	5.570000	98.10000
## 22	0.852040	0.00000	8.140000	0.00000000	0.5380000	5.965000	89.20000
## 23	1.232470	10.91867	8.140000	0.00000000	0.5380000	6.142000	91.70000
## 24	0.988430	0.00000	8.140000	0.00000000	0.5380000	5.813000	100.00000
## 25	0.750260	0.00000	8.140000	0.00000000	0.5380000	6.287762	94.10000
## 26	0.840540	0.00000	8.140000	0.07318725	0.5380000	6.281190	85.70000
## 27	0.671910	0.00000	8.140000	0.00000000	0.5380000	5.813000	90.30000

## 28	0.955770	0.00000	10.646243	0.00000000	0.5380000	6.047000	88.80000
## 29	0.772990	0.00000	8.140000	0.00000000	0.5380000	6.495000	94.40000
## 30	1.002450	0.00000	8.140000	0.00000000	0.5380000	6.674000	87.30000
## 31	1.130810	0.00000	8.140000	0.00000000	0.5380000	5.713000	69.57601
## 32	1.354720	0.00000	8.140000	0.00000000	0.5473427	6.072000	100.00000
## 33	1.387990	0.00000	8.140000	0.00000000	0.5380000	5.950000	82.00000
## 34	3.565464	0.00000	8.140000	0.00000000	0.5486664	5.701000	69.15018
## 35	1.612820	0.00000	8.140000	0.00000000	0.5380000	6.096000	96.90000
## 36	0.064170	0.00000	5.960000	0.07308664	0.4990000	5.933000	68.20000
## 37	3.463033	0.00000	5.960000	0.00000000	0.4990000	5.841000	68.10089
## 38	0.080140	0.00000	5.960000	0.00000000	0.5481625	5.850000	41.50000
## 39	0.175050	0.00000	5.960000	0.00000000	0.4990000	5.966000	30.20000
## 40	0.027630	75.00000	2.950000	0.00000000	0.4280000	6.595000	21.80000
## 41	0.033590	75.00000	2.950000	0.00000000	0.4280000	7.024000	15.80000
## 42	0.127440	0.00000	6.910000	0.00000000	0.4480000	6.770000	2.90000
## 43	3.381945	0.00000	6.910000	0.00000000	0.4480000	6.248914	6.60000
## 44	0.159360	0.00000	6.910000	0.00000000	0.4480000	6.211000	6.50000
## 45	0.122690	11.15599	6.910000	0.00000000	0.4480000	6.069000	66.66422
## 46	0.171420	0.00000	6.910000	0.07077767	0.4480000	5.682000	33.80000
## 47	0.188360	0.00000	6.910000	0.00000000	0.4480000	5.786000	33.30000
## 48	0.229270	0.00000	6.910000	0.00000000	0.4480000	6.030000	85.50000
## 49	0.253870	0.00000	6.910000	0.00000000	0.4480000	5.399000	95.30000
## 50	0.219770	0.00000	10.918617	0.00000000	0.4480000	5.602000	62.00000
## 51	0.088730	21.00000	5.640000	0.00000000	0.4390000	5.963000	45.70000
## 52	0.043370	21.00000	5.640000	0.00000000	0.4390000	6.115000	63.00000
## 53	0.053600	21.00000	5.640000	0.00000000	0.4390000	6.511000	21.10000
## 54	0.049810	21.00000	5.640000	0.00000000	0.4390000	6.294190	21.40000
## 55	0.013600	75.00000	4.000000	0.00000000	0.4100000	5.888000	47.60000
## 56	0.013110	90.00000	1.220000	0.07293196	0.5303848	6.355088	21.90000
## 57	0.020550	85.00000	0.740000	0.00000000	0.5364198	6.383000	35.70000
## 58	0.014320	100.00000	1.320000	0.00000000	0.4110000	6.816000	40.50000
## 59	3.428363	25.00000	5.130000	0.00000000	0.4530000	6.145000	29.20000
## 60	0.103280	12.46441	5.130000	0.00000000	0.5469097	5.927000	47.20000
## 61	3.396526	25.00000	5.130000	0.07078806	0.4530000	5.741000	66.20000
## 62	0.171710	25.00000	5.130000	0.07780918	0.4530000	6.274086	93.40000
## 63	0.110270	25.00000	5.130000	0.00000000	0.5340406	6.456000	67.80000
## 64	0.126500	11.91062	5.130000	0.00000000	0.4530000	6.762000	43.40000
## 65	0.019510	17.50000	1.380000	0.00000000	0.4161000	7.104000	59.50000
## 66	0.035840	80.00000	9.926629	0.00000000	0.3980000	6.290000	17.80000
## 67	0.043790	80.00000	3.370000	0.00000000	0.3980000	5.787000	66.40510
## 68	0.057890	12.50000	6.070000	0.00000000	0.5443137	5.878000	21.40000
## 69	0.135540	12.69245	6.070000	0.00000000	0.4090000	5.594000	36.80000
## 70	0.128160	12.50000	6.070000	0.00000000	0.4090000	5.885000	33.00000
## 71	0.088260	0.00000	10.810000	0.00000000	0.4130000	6.417000	6.60000
## 72	0.158760	0.00000	10.810000	0.00000000	0.4130000	5.961000	17.50000
## 73	0.091640	0.00000	10.810000	0.00000000	0.4130000	6.065000	7.80000
## 74	0.195390	0.00000	10.810000	0.00000000	0.4130000	6.245000	6.20000
## 75	0.078960	0.00000	12.830000	0.00000000	0.4370000	6.273000	6.00000
## 76	0.095120	0.00000	12.830000	0.00000000	0.4370000	6.286000	45.00000
## 77	0.101530	0.00000	12.830000	0.00000000	0.4370000	6.279000	74.50000
## 78	0.087070	10.62304	12.830000	0.00000000	0.4370000	6.140000	45.80000
## 79	0.056460	0.00000	12.830000	0.00000000	0.4370000	6.232000	53.70000
## 80	0.083870	0.00000	12.830000	0.00000000	0.4370000	5.874000	36.60000
## 81	0.041130	25.00000	10.820167	0.07356205	0.4260000	6.727000	66.30027



## 82	3.468171	25.00000	4.860000	0.00000000	0.4260000	6.266244	70.40000
## 83	0.036590	25.00000	4.860000	0.00000000	0.4260000	6.302000	32.20000
## 84	0.035510	25.00000	4.860000	0.00000000	0.4260000	6.167000	46.70000
## 85	0.050590	0.00000	4.490000	0.07128890	0.4490000	6.308306	48.00000
## 86	0.057350	0.00000	4.490000	0.00000000	0.4490000	6.630000	56.10000
## 87	0.051880	0.00000	10.697462	0.00000000	0.4490000	6.015000	45.10000
## 88	0.071510	0.00000	4.490000	0.00000000	0.5493076	6.121000	56.80000
## 89	0.056600	0.00000	10.603744	0.00000000	0.4890000	6.293599	67.73443
## 90	0.053020	0.00000	3.410000	0.00000000	0.4890000	7.079000	63.10000
## 91	0.046840	0.00000	3.410000	0.00000000	0.4890000	6.417000	66.10000
## 92	0.039320	0.00000	3.410000	0.06875270	0.4890000	6.405000	73.90000
## 93	0.042030	11.22973	15.040000	0.00000000	0.4640000	6.442000	53.60000
## 94	0.028750	28.00000	15.040000	0.08317732	0.4640000	6.211000	67.57838
## 95	0.042940	28.00000	15.040000	0.07132707	0.4640000	6.249000	77.30000
## 96	0.122040	0.00000	2.890000	0.00000000	0.4450000	6.625000	57.80000
## 97	3.533805	0.00000	2.890000	0.00000000	0.4450000	6.163000	69.60000
## 98	0.120830	0.00000	2.890000	0.00000000	0.4450000	8.069000	76.00000
## 99	0.081870	0.00000	2.890000	0.07879346	0.4450000	7.820000	36.90000
## 100	0.068600	0.00000	2.890000	0.00000000	0.4450000	7.416000	62.50000
## 101	0.148660	0.00000	11.015490	0.00000000	0.5200000	6.727000	79.90000
## 102	0.114320	10.24148	8.560000	0.00000000	0.5200000	6.290222	71.30000
## 103	0.228760	0.00000	8.560000	0.00000000	0.5200000	6.405000	85.40000
## 104	0.211610	0.00000	8.560000	0.00000000	0.5200000	6.137000	87.40000
## 105	0.139600	0.00000	8.560000	0.00000000	0.5200000	6.167000	90.00000
## 106	0.132620	0.00000	8.560000	0.00000000	0.5200000	5.851000	96.70000
## 107	0.171200	0.00000	8.560000	0.00000000	0.5200000	6.275448	91.90000
## 108	0.131170	0.00000	8.560000	0.00000000	0.5200000	6.275432	85.20000
## 109	0.128020	10.58130	10.859826	0.00000000	0.5200000	6.474000	68.67128
## 110	0.263630	0.00000	8.560000	0.00000000	0.5479223	6.229000	91.20000
## 111	0.107930	0.00000	8.560000	0.00000000	0.5200000	6.195000	54.40000
## 112	0.100840	10.72719	10.010000	0.00000000	0.5488054	6.715000	81.60000
## 113	0.123290	0.00000	10.010000	0.00000000	0.5470000	5.913000	92.90000
## 114	0.222120	0.00000	10.010000	0.00000000	0.5470000	6.280632	95.40000
## 115	0.142310	0.00000	10.010000	0.07283241	0.5470000	6.254000	84.20000
## 116	3.314736	0.00000	10.010000	0.00000000	0.5470000	5.928000	88.20000
## 117	0.131580	0.00000	10.010000	0.00000000	0.5470000	6.176000	72.50000
## 118	3.515738	0.00000	10.010000	0.00000000	0.5470000	6.288785	82.60000
## 119	0.130580	0.00000	10.010000	0.00000000	0.5470000	5.872000	73.10000
## 120	0.144760	0.00000	10.010000	0.00000000	0.5470000	5.731000	68.61237
## 121	0.068990	0.00000	25.650000	0.00000000	0.5579560	5.870000	69.70000
## 122	0.071650	0.00000	25.650000	0.00000000	0.5810000	6.004000	84.10000
## 123	0.092990	0.00000	25.650000	0.00000000	0.5810000	5.961000	92.90000
## 124	0.150380	0.00000	25.650000	0.00000000	0.5810000	5.856000	97.00000
## 125	0.098490	0.00000	25.650000	0.00000000	0.5810000	5.879000	95.80000
## 126	0.169020	0.00000	25.650000	0.00000000	0.5810000	5.986000	88.40000
## 127	0.387350	0.00000	25.650000	0.00000000	0.5810000	5.613000	68.43364
## 128	0.259150	0.00000	21.890000	0.00000000	0.6240000	5.693000	96.00000
## 129	0.325430	0.00000	21.890000	0.00000000	0.6240000	6.431000	98.80000
## 130	0.881250	0.00000	21.890000	0.00000000	0.6240000	5.637000	70.31789
## 131	0.340060	0.00000	21.890000	0.00000000	0.6240000	6.458000	98.90000
## 132	1.192940	0.00000	21.890000	0.00000000	0.6240000	6.326000	70.12766
## 133	0.590050	0.00000	21.890000	0.00000000	0.6240000	6.372000	97.90000
## 134	0.329820	0.00000	11.601371	0.00000000	0.6240000	5.822000	67.67357
## 135	0.976170	0.00000	21.890000	0.00000000	0.6240000	6.296139	98.40000

## 136	0.557780	0.00000	21.890000	0.00000000	0.6240000	6.335000	98.20000
## 137	3.423108	0.00000	21.890000	0.00000000	0.6240000	5.942000	93.50000
## 138	0.352330	0.00000	21.890000	0.00000000	0.6240000	6.454000	98.40000
## 139	0.249800	0.00000	21.890000	0.06983238	0.6240000	6.251975	98.20000
## 140	0.544520	0.00000	11.412206	0.00000000	0.6240000	6.151000	97.90000
## 141	4.471678	0.00000	11.461835	0.00000000	0.6240000	6.174000	93.60000
## 142	1.628640	10.29800	21.890000	0.00000000	0.6240000	5.019000	100.00000
## 143	4.156358	0.00000	19.580000	1.00000000	0.8710000	6.154711	100.00000
## 144	4.097400	10.51448	19.580000	0.00000000	0.8710000	5.468000	100.00000
## 145	2.779740	0.00000	19.580000	0.00000000	0.8710000	4.903000	97.80000
## 146	3.853427	0.00000	19.580000	0.08638868	0.5801165	6.130000	100.00000
## 147	2.155050	0.00000	19.580000	0.00000000	0.8710000	5.628000	100.00000
## 148	2.368620	0.00000	19.580000	0.00000000	0.8710000	4.926000	95.70000
## 149	2.330990	0.00000	19.580000	0.00000000	0.8710000	5.186000	93.80000
## 150	2.733970	0.00000	19.580000	0.00000000	0.8710000	5.597000	94.90000
## 151	1.656600	0.00000	19.580000	0.00000000	0.8710000	6.122000	97.30000
## 152	1.496320	0.00000	11.574221	0.00000000	0.8710000	5.404000	100.00000
## 153	1.126580	0.00000	19.580000	1.00000000	0.8710000	5.012000	88.00000
## 154	2.149180	0.00000	19.580000	0.00000000	0.8710000	5.709000	98.50000
## 155	1.413850	0.00000	19.580000	1.00000000	0.8710000	6.129000	96.00000
## 156	3.384670	0.00000	19.580000	1.00000000	0.8710000	6.152000	82.60000
## 157	2.446680	0.00000	19.580000	0.00000000	0.8710000	5.272000	94.00000
## 158	1.223580	10.64249	19.580000	0.00000000	0.6050000	6.943000	97.40000
## 159	1.342840	10.81313	19.580000	0.00000000	0.6050000	6.066000	100.00000
## 160	1.425020	0.00000	19.580000	0.12131325	0.8710000	6.510000	100.00000
## 161	1.273460	0.00000	19.580000	1.00000000	0.6050000	6.250000	92.60000
## 162	1.463360	0.00000	19.580000	0.00000000	0.6050000	7.489000	90.80000
## 163	1.833770	0.00000	19.580000	1.00000000	0.6050000	7.802000	98.20000
## 164	1.519020	0.00000	19.580000	1.00000000	0.5702861	8.375000	93.90000
## 165	2.242360	10.57755	19.580000	0.00000000	0.6050000	5.854000	69.64906
## 166	3.381919	0.00000	19.580000	0.00000000	0.6050000	6.101000	93.00000
## 167	2.010190	0.00000	19.580000	0.00000000	0.6050000	7.929000	96.20000
## 168	1.800280	0.00000	19.580000	0.00000000	0.6050000	6.291861	79.20000
## 169	2.300400	0.00000	19.580000	0.07785138	0.6050000	6.319000	96.10000
## 170	2.449530	0.00000	19.580000	0.00000000	0.6050000	6.402000	95.20000
## 171	3.395648	0.00000	19.580000	0.00000000	0.6050000	6.291651	94.60000
## 172	3.342647	0.00000	19.580000	0.00000000	0.6050000	5.880000	69.60241
## 173	0.139140	0.00000	4.050000	0.00000000	0.5487839	6.305963	88.50000
## 174	0.091780	0.00000	10.996844	0.00000000	0.5100000	6.416000	84.10000
## 175	0.084470	0.00000	11.237736	0.00000000	0.5100000	6.292440	68.70000
## 176	0.066640	0.00000	4.050000	0.00000000	0.5100000	6.546000	33.10000
## 177	3.556462	0.00000	4.050000	0.00000000	0.5100000	6.020000	68.13462
## 178	0.054250	0.00000	4.050000	0.00000000	0.5100000	6.315000	73.40000
## 179	3.522324	0.00000	4.050000	0.00000000	0.5100000	6.860000	74.40000
## 180	0.057800	0.00000	2.460000	0.00000000	0.4880000	6.980000	58.40000
## 181	0.065880	0.00000	2.460000	0.00000000	0.5456909	7.765000	83.30000
## 182	0.068880	0.00000	10.799723	0.00000000	0.4880000	6.144000	62.20000
## 183	0.091030	0.00000	2.460000	0.00000000	0.4880000	7.155000	92.20000
## 184	0.100080	0.00000	2.460000	0.00000000	0.4880000	6.563000	95.60000
## 185	0.083080	0.00000	2.460000	0.00000000	0.4880000	5.604000	89.80000
## 186	0.060470	0.00000	2.460000	0.00000000	0.4880000	6.153000	68.80000
## 187	0.056020	0.00000	2.460000	0.00000000	0.4880000	6.382176	53.60000
## 188	0.078750	45.00000	3.440000	0.00000000	0.4370000	6.322890	41.10000
## 189	0.125790	45.00000	3.440000	0.00000000	0.4370000	6.556000	29.10000

## 190	0.083700	45.00000	3.440000	0.00000000	0.4370000	7.185000	38.90000
## 191	0.090680	45.00000	3.440000	0.00000000	0.4370000	6.370250	21.50000
## 192	3.194231	45.00000	3.440000	0.07605787	0.4370000	6.739000	30.80000
## 193	0.086640	45.00000	3.440000	0.00000000	0.4370000	7.178000	26.30000
## 194	0.021870	60.00000	2.930000	0.00000000	0.4010000	6.800000	9.90000
## 195	0.014390	60.00000	2.930000	0.00000000	0.4010000	6.373372	64.83456
## 196	0.013810	80.00000	0.460000	0.00000000	0.4220000	7.875000	32.00000
## 197	0.040110	80.00000	1.520000	0.08328313	0.4040000	7.287000	34.10000
## 198	0.046660	80.00000	1.520000	0.07558799	0.4040000	7.107000	36.60000
## 199	3.293542	80.00000	1.520000	0.00000000	0.4040000	7.274000	38.30000
## 200	0.031500	95.00000	1.470000	0.00000000	0.4030000	6.975000	15.30000
## 201	0.017780	95.00000	1.470000	0.00000000	0.4030000	7.135000	64.89395
## 202	0.034450	82.50000	2.030000	0.00000000	0.4150000	6.162000	38.40000
## 203	0.021770	82.50000	2.030000	0.00000000	0.4150000	7.610000	15.70000
## 204	0.035100	95.00000	2.680000	0.00000000	0.4161000	7.853000	33.20000
## 205	0.020090	95.00000	2.680000	0.00000000	0.4161000	8.034000	31.90000
## 206	0.136420	0.00000	10.590000	0.00000000	0.5427737	5.891000	22.30000
## 207	0.229690	0.00000	10.590000	0.00000000	0.4890000	6.326000	52.50000
## 208	0.251990	0.00000	10.590000	0.00000000	0.4890000	5.783000	72.70000
## 209	0.135870	0.00000	10.590000	1.00000000	0.4890000	6.064000	67.99815
## 210	0.435710	0.00000	10.590000	1.00000000	0.4890000	5.344000	100.00000
## 211	0.174460	0.00000	10.590000	1.00000000	0.4890000	5.960000	92.10000
## 212	0.375780	0.00000	10.590000	1.00000000	0.4890000	5.404000	88.60000
## 213	0.217190	0.00000	10.590000	1.00000000	0.4890000	5.807000	53.80000
## 214	0.140520	0.00000	10.590000	0.00000000	0.4890000	6.375000	67.85186
## 215	0.289550	0.00000	10.590000	0.00000000	0.4890000	5.412000	9.80000
## 216	0.198020	0.00000	10.590000	0.00000000	0.4890000	6.182000	42.40000
## 217	3.452774	0.00000	13.890000	1.00000000	0.5500000	5.888000	56.00000
## 218	0.070130	10.18890	13.890000	0.00000000	0.5500000	6.642000	85.10000
## 219	0.110690	0.00000	13.890000	1.00000000	0.5504001	5.951000	69.75019
## 220	0.114250	0.00000	13.890000	1.00000000	0.5500000	6.373000	92.40000
## 221	0.358090	0.00000	6.200000	1.00000000	0.5070000	6.951000	88.50000
## 222	0.407710	0.00000	6.200000	1.00000000	0.5070000	6.361621	91.30000
## 223	0.623560	0.00000	6.200000	1.00000000	0.5070000	6.879000	77.70000
## 224	0.614700	10.30298	6.200000	0.00000000	0.5070000	6.618000	80.80000
## 225	0.315330	0.00000	6.200000	0.00000000	0.5040000	8.266000	68.63975
## 226	0.526930	0.00000	6.200000	0.00000000	0.5040000	8.725000	68.24478
## 227	0.382140	0.00000	6.200000	0.00000000	0.5040000	8.040000	86.50000
## 228	0.412380	0.00000	6.200000	0.00000000	0.5040000	7.163000	79.90000
## 229	0.298190	11.06336	6.200000	0.00000000	0.5040000	7.686000	17.00000
## 230	0.441780	0.00000	6.200000	0.00000000	0.5040000	6.552000	21.40000
## 231	0.537000	10.62857	11.059619	0.00000000	0.5040000	5.981000	68.10000
## 232	0.462960	0.00000	6.200000	0.00000000	0.5040000	7.412000	68.01244
## 233	0.575290	10.73085	10.642344	0.00000000	0.5070000	8.337000	73.30000
## 234	0.331470	0.00000	6.200000	0.00000000	0.5070000	8.247000	70.40000
## 235	0.447910	0.00000	6.200000	1.00000000	0.5070000	6.726000	69.37461
## 236	0.330450	0.00000	10.986895	0.00000000	0.5070000	6.086000	61.50000
## 237	0.520580	0.00000	6.200000	1.00000000	0.5070000	6.631000	76.50000
## 238	0.511830	0.00000	6.200000	0.00000000	0.5070000	7.358000	71.60000
## 239	0.082440	14.67285	4.930000	0.00000000	0.4280000	6.481000	18.50000
## 240	0.092520	30.00000	4.930000	0.00000000	0.4280000	6.606000	42.20000
## 241	3.530369	30.00000	4.930000	0.00000000	0.4280000	6.897000	66.86481
## 242	0.106120	30.00000	4.930000	0.00000000	0.4280000	6.095000	65.10000
## 243	0.102900	30.00000	4.930000	0.00000000	0.4280000	6.358000	68.50596

## 244	0.127570	30.00000	4.930000	0.00000000	0.4280000	6.393000	7.80000
## 245	0.206080	22.00000	5.860000	0.00000000	0.4310000	5.593000	76.50000
## 246	0.191330	22.00000	5.860000	0.00000000	0.4310000	5.605000	70.20000
## 247	0.339830	22.00000	5.860000	0.00000000	0.4310000	6.108000	34.90000
## 248	0.196570	22.00000	5.860000	0.07367995	0.4310000	6.255302	79.20000
## 249	0.164390	22.00000	5.860000	0.00000000	0.4310000	6.433000	49.10000
## 250	0.190730	12.58403	5.860000	0.00000000	0.4310000	6.718000	17.50000
## 251	3.263989	22.00000	5.860000	0.00000000	0.4310000	6.487000	13.00000
## 252	0.214090	22.00000	10.789517	0.07775361	0.4310000	6.438000	8.90000
## 253	0.082210	22.00000	5.860000	0.00000000	0.4310000	6.957000	6.80000
## 254	0.368940	22.00000	5.860000	0.00000000	0.4310000	8.259000	8.40000
## 255	0.048190	80.00000	3.640000	0.00000000	0.3920000	6.108000	32.00000
## 256	0.035480	80.00000	3.640000	0.00000000	0.3920000	5.876000	66.53824
## 257	0.015380	90.00000	3.750000	0.09351180	0.3940000	7.454000	34.20000
## 258	0.611540	20.00000	3.970000	0.00000000	0.6470000	8.704000	86.90000
## 259	0.663510	20.00000	3.970000	0.00000000	0.6470000	6.329761	100.00000
## 260	0.656650	20.00000	3.970000	0.00000000	0.5693043	6.842000	100.00000
## 261	0.540110	20.00000	3.970000	0.00000000	0.6470000	7.203000	81.80000
## 262	0.534120	20.00000	8.984103	0.00000000	0.6470000	7.520000	89.40000
## 263	0.520140	20.00000	3.970000	0.00000000	0.6470000	8.398000	69.30344
## 264	0.825260	20.00000	3.970000	0.00000000	0.6470000	6.392965	94.50000
## 265	0.550070	20.00000	3.970000	0.00000000	0.6470000	7.206000	91.60000
## 266	0.761620	12.75880	3.970000	0.00000000	0.6470000	5.560000	62.80000
## 267	0.785700	20.00000	3.970000	0.00000000	0.6470000	7.014000	84.60000
## 268	0.578340	20.00000	3.970000	0.00000000	0.5750000	8.297000	67.00000
## 269	0.540500	20.00000	3.970000	0.00000000	0.5750000	7.470000	52.60000
## 270	0.090650	20.00000	6.960000	1.00000000	0.4640000	5.920000	61.50000
## 271	0.299160	20.00000	6.960000	0.00000000	0.5441182	5.856000	67.70065
## 272	0.162110	11.37567	10.962029	0.00000000	0.4640000	6.240000	16.30000
## 273	0.114600	20.00000	6.960000	0.00000000	0.4640000	6.538000	58.70000
## 274	0.221880	20.00000	6.960000	1.00000000	0.4640000	7.691000	51.80000
## 275	0.056440	12.49013	6.410000	1.00000000	0.4470000	6.758000	32.90000
## 276	0.096040	40.00000	10.787864	0.00000000	0.4470000	6.854000	42.80000
## 277	3.322909	40.00000	6.410000	1.00000000	0.4470000	7.267000	49.00000
## 278	0.061270	12.22792	10.944893	1.00000000	0.4470000	6.826000	27.60000
## 279	0.079780	40.00000	10.866806	0.00000000	0.4470000	6.313807	32.10000
## 280	0.210380	20.00000	10.501278	0.00000000	0.4429000	6.812000	32.20000
## 281	0.035780	20.00000	3.330000	0.00000000	0.4429000	7.820000	64.50000
## 282	0.037050	20.00000	3.330000	0.00000000	0.4429000	6.968000	37.20000
## 283	0.061290	20.00000	3.330000	1.00000000	0.4429000	7.645000	49.70000
## 284	0.015010	90.00000	1.210000	1.00000000	0.4010000	7.923000	24.80000
## 285	0.009060	16.93661	2.970000	0.00000000	0.4000000	7.088000	20.80000
## 286	0.010960	55.00000	2.250000	0.00000000	0.3890000	6.453000	31.90000
## 287	0.019650	80.00000	1.760000	0.00000000	0.3850000	6.230000	31.50000
## 288	3.392343	52.50000	5.320000	0.00000000	0.4050000	6.209000	31.30000
## 289	0.045900	52.50000	5.320000	0.00000000	0.4050000	6.315000	45.60000
## 290	0.042970	52.50000	5.320000	0.00000000	0.4050000	6.565000	22.90000
## 291	0.035020	80.00000	4.950000	0.00000000	0.4110000	6.861000	27.90000
## 292	0.078860	13.99394	4.950000	0.00000000	0.4110000	7.148000	27.70000
## 293	0.036150	80.00000	4.950000	0.00000000	0.4110000	6.630000	23.40000
## 294	3.327775	0.00000	13.920000	0.00000000	0.4370000	6.127000	18.40000
## 295	0.081990	0.00000	13.920000	0.00000000	0.4370000	6.009000	42.30000
## 296	0.129320	0.00000	13.920000	0.00000000	0.4370000	6.678000	31.10000
## 297	0.053720	0.00000	13.920000	0.07296786	0.4370000	6.549000	51.00000

## 298	0.141030	0.00000	13.920000	0.07124062	0.4370000	5.790000	58.00000
## 299	0.064660	17.87304	2.240000	0.00000000	0.4000000	6.345000	20.10000
## 300	0.055610	70.00000	2.240000	0.00000000	0.4000000	7.041000	10.00000
## 301	0.044170	70.00000	2.240000	0.00000000	0.4000000	6.871000	47.40000
## 302	0.035370	34.00000	10.566831	0.00000000	0.4330000	6.590000	40.40000
## 303	0.092660	34.00000	6.090000	0.07252601	0.4330000	6.495000	18.40000
## 304	0.100000	34.00000	6.090000	0.00000000	0.4330000	6.982000	65.97604
## 305	0.055150	33.00000	2.180000	0.00000000	0.4720000	7.236000	41.10000
## 306	0.054790	33.00000	2.180000	0.00000000	0.4720000	6.616000	58.10000
## 307	0.075030	33.00000	10.933241	0.00000000	0.4720000	7.420000	71.90000
## 308	0.049320	33.00000	2.180000	0.00000000	0.4720000	6.345398	70.30000
## 309	0.492980	0.00000	9.900000	0.00000000	0.5440000	6.635000	67.97090
## 310	0.349400	0.00000	9.900000	0.00000000	0.5440000	5.972000	76.70000
## 311	2.635480	0.00000	9.900000	0.00000000	0.5440000	4.973000	37.80000
## 312	3.458171	0.00000	9.900000	0.00000000	0.5508518	6.122000	52.80000
## 313	0.261690	10.66211	9.900000	0.00000000	0.5440000	6.023000	67.36020
## 314	0.269380	0.00000	9.900000	0.00000000	0.5440000	6.266000	82.80000
## 315	0.369200	0.00000	9.900000	0.00000000	0.5440000	6.567000	87.30000
## 316	0.253560	0.00000	9.900000	0.00000000	0.5440000	5.705000	77.70000
## 317	0.318270	0.00000	9.900000	0.00000000	0.5440000	5.914000	83.20000
## 318	3.448148	0.00000	9.900000	0.06991261	0.5440000	5.782000	71.70000
## 319	0.402020	0.00000	9.900000	0.00000000	0.5440000	6.382000	67.20000
## 320	0.475470	0.00000	9.900000	0.07132734	0.5453051	6.113000	58.80000
## 321	0.167600	0.00000	7.380000	0.00000000	0.4930000	6.426000	52.30000
## 322	0.181590	0.00000	7.380000	0.00000000	0.4930000	6.376000	54.30000
## 323	0.351140	0.00000	7.380000	0.00000000	0.4930000	6.041000	49.90000
## 324	0.283920	0.00000	7.380000	0.00000000	0.4930000	5.708000	74.30000
## 325	0.341090	0.00000	7.380000	0.00000000	0.4930000	6.415000	40.10000
## 326	0.191860	11.29854	7.380000	0.00000000	0.5433740	6.431000	14.70000
## 327	0.303470	0.00000	7.380000	0.00000000	0.4930000	6.300076	28.90000
## 328	0.241030	10.90786	11.047004	0.00000000	0.4930000	6.083000	43.70000
## 329	0.066170	11.19117	3.240000	0.00000000	0.4600000	5.868000	25.80000
## 330	0.067240	0.00000	3.240000	0.00000000	0.4600000	6.333000	17.20000
## 331	0.045440	0.00000	3.240000	0.00000000	0.4600000	6.144000	32.20000
## 332	0.050230	11.83181	6.060000	0.00000000	0.4379000	5.706000	65.75257
## 333	0.034660	35.00000	6.060000	0.00000000	0.4379000	6.031000	23.30000
## 334	0.050830	0.00000	5.190000	0.00000000	0.5442902	6.316000	38.10000
## 335	0.037380	10.81433	5.190000	0.00000000	0.5150000	6.315877	38.50000
## 336	0.039610	0.00000	5.190000	0.07448007	0.5150000	6.037000	34.50000
## 337	0.034270	12.00298	5.190000	0.07042090	0.5150000	5.869000	46.30000
## 338	3.355483	0.00000	10.725901	0.00000000	0.5150000	5.895000	59.60000
## 339	0.033060	0.00000	5.190000	0.00000000	0.5150000	6.059000	37.30000
## 340	0.054970	0.00000	5.190000	0.00000000	0.5438608	5.985000	45.40000
## 341	0.061510	0.00000	5.190000	0.00000000	0.5150000	5.968000	58.50000
## 342	0.013010	35.00000	10.457839	0.07439075	0.4420000	7.241000	49.30000
## 343	0.024980	0.00000	11.492236	0.07034620	0.5384953	6.540000	59.70000
## 344	0.025430	13.11064	3.780000	0.00000000	0.4840000	6.696000	56.40000
## 345	0.030490	55.00000	3.780000	0.00000000	0.4840000	6.874000	28.10000
## 346	0.031130	0.00000	4.390000	0.00000000	0.4420000	6.014000	48.50000
## 347	0.061620	0.00000	4.390000	0.00000000	0.4420000	6.277434	52.30000
## 348	0.018700	85.00000	4.150000	0.06896642	0.4290000	6.516000	27.70000
## 349	0.015010	19.23764	2.010000	0.00000000	0.4350000	6.635000	29.70000
## 350	0.028990	40.00000	1.250000	0.00000000	0.4290000	6.939000	34.50000
## 351	0.062110	40.00000	1.250000	0.00000000	0.4290000	6.359788	44.40000

## 352	0.079500	13.86421	10.687498	0.00000000	0.4110000	6.579000	35.90000
## 353	0.072440	60.00000	10.418531	0.00000000	0.5306465	5.884000	18.50000
## 354	0.017090	90.00000	2.020000	0.00000000	0.4100000	6.728000	36.10000
## 355	0.043010	20.19106	1.910000	0.00000000	0.4130000	5.663000	21.90000
## 356	0.106590	80.00000	10.526733	0.00000000	0.4130000	5.936000	19.50000
## 357	8.982960	0.00000	18.100000	1.00000000	0.7700000	6.212000	97.40000
## 358	3.849700	0.00000	18.100000	1.00000000	0.7700000	6.395000	91.00000
## 359	3.780520	0.00000	18.100000	1.00000000	0.5544256	6.127000	83.40000
## 360	4.371861	0.00000	18.100000	0.00000000	0.7700000	6.112000	81.30000
## 361	4.541920	0.00000	18.100000	0.00000000	0.7700000	6.398000	70.04230
## 362	3.836840	0.00000	18.100000	0.00000000	0.5618378	6.251000	91.10000
## 363	3.678220	0.00000	18.100000	0.00000000	0.7700000	5.362000	69.89141
## 364	4.222390	0.00000	18.100000	1.00000000	0.7700000	6.280678	89.00000
## 365	3.474280	0.00000	18.100000	1.00000000	0.7180000	8.780000	82.90000
## 366	5.707168	0.00000	11.519958	0.00000000	0.7180000	3.561000	87.90000
## 367	3.696950	0.00000	18.100000	0.00000000	0.7180000	4.963000	91.40000
## 368	13.522200	0.00000	18.100000	0.00000000	0.6310000	3.863000	100.00000
## 369	6.158321	0.00000	18.100000	0.00000000	0.6310000	4.970000	100.00000
## 370	5.669980	0.00000	18.100000	1.00000000	0.6310000	6.683000	96.80000
## 371	6.538760	11.37261	18.100000	1.00000000	0.6310000	7.016000	97.50000
## 372	5.998649	10.76176	18.100000	0.00000000	0.6310000	6.216000	100.00000
## 373	8.267250	0.00000	18.100000	1.00000000	0.5581806	5.875000	89.60000
## 374	11.108100	0.00000	18.100000	0.08248982	0.6680000	4.906000	100.00000
## 375	18.498200	0.00000	18.100000	0.00000000	0.6680000	4.138000	100.00000
## 376	19.609100	0.00000	18.100000	0.00000000	0.6710000	7.313000	97.90000
## 377	15.288000	0.00000	18.100000	0.08596366	0.6710000	6.649000	93.30000
## 378	9.823490	0.00000	18.100000	0.00000000	0.6710000	6.794000	98.80000
## 379	4.268170	0.00000	18.100000	0.00000000	0.6710000	6.380000	96.20000
## 380	17.866700	0.00000	18.100000	0.00000000	0.6710000	6.223000	100.00000
## 381	88.976200	10.87581	18.100000	0.00000000	0.6710000	6.968000	71.82590
## 382	15.874400	0.00000	18.100000	0.00000000	0.6710000	6.545000	99.10000
## 383	9.187020	0.00000	18.100000	0.07174904	0.7000000	5.536000	100.00000
## 384	7.992480	0.00000	18.100000	0.00000000	0.7000000	5.520000	100.00000
## 385	20.084900	0.00000	18.100000	0.00000000	0.7000000	6.098546	91.20000
## 386	16.811800	0.00000	18.100000	0.07019382	0.7000000	5.277000	98.10000
## 387	24.393800	0.00000	18.100000	0.00000000	0.7000000	4.652000	100.00000
## 388	22.597100	0.00000	18.100000	0.00000000	0.7000000	5.000000	89.50000
## 389	14.333700	0.00000	18.100000	0.00000000	0.5648706	4.880000	100.00000
## 390	8.151740	0.00000	18.100000	0.00000000	0.7000000	5.390000	98.90000
## 391	6.962150	0.00000	18.100000	0.00000000	0.7000000	5.713000	97.00000
## 392	5.293050	0.00000	18.100000	0.00000000	0.7000000	6.051000	82.50000
## 393	4.841584	0.00000	18.100000	0.00000000	0.7000000	5.036000	97.00000
## 394	8.644760	0.00000	18.100000	0.00000000	0.6930000	6.266040	92.60000
## 395	13.359800	0.00000	18.100000	0.00000000	0.5646095	5.887000	94.70000
## 396	8.716750	0.00000	18.100000	0.00000000	0.6930000	6.471000	71.29333
## 397	5.872050	10.80481	18.100000	0.00000000	0.6930000	6.405000	96.00000
## 398	7.672020	0.00000	18.100000	0.00000000	0.6930000	5.747000	98.90000
## 399	38.351800	0.00000	18.100000	0.07218987	0.6930000	5.453000	100.00000
## 400	9.916550	0.00000	18.100000	0.00000000	0.6930000	5.852000	77.80000
## 401	25.046100	0.00000	18.100000	0.00000000	0.6930000	5.987000	100.00000
## 402	14.236200	0.00000	18.100000	0.00000000	0.6930000	6.343000	100.00000
## 403	9.595710	0.00000	18.100000	0.00000000	0.6930000	6.404000	100.00000
## 404	24.801700	0.00000	18.100000	0.00000000	0.6930000	5.349000	96.00000
## 405	41.529200	0.00000	18.100000	0.00000000	0.6930000	5.531000	85.40000

## 406	67.920800	0.00000	18.100000	0.00000000	0.6930000	5.683000	100.00000
## 407	20.716200	0.00000	11.348319	0.00000000	0.6590000	4.138000	70.90479
## 408	11.951100	10.83040	18.100000	0.00000000	0.6590000	5.608000	100.00000
## 409	7.403890	0.00000	18.100000	0.00000000	0.5970000	6.250252	97.90000
## 410	14.438300	0.00000	18.100000	0.00000000	0.5970000	6.852000	100.00000
## 411	51.135800	0.00000	18.100000	0.00000000	0.5600374	5.757000	100.00000
## 412	6.574223	0.00000	11.429706	0.00000000	0.5613903	6.657000	100.00000
## 413	18.811000	0.00000	18.100000	0.00000000	0.5970000	4.628000	68.49474
## 414	28.655800	0.00000	18.100000	0.00000000	0.5970000	5.155000	100.00000
## 415	45.746100	0.00000	18.100000	0.00000000	0.6930000	4.519000	100.00000
## 416	18.084600	0.00000	18.100000	0.00000000	0.6790000	6.192498	100.00000
## 417	10.834200	0.00000	18.100000	0.00000000	0.6790000	6.782000	90.80000
## 418	25.940600	0.00000	18.100000	0.00000000	0.6790000	5.304000	89.10000
## 419	73.534100	0.00000	11.526735	0.00000000	0.5608403	5.957000	71.46486
## 420	4.347645	0.00000	18.100000	0.00000000	0.7180000	6.272664	71.22488
## 421	5.665834	0.00000	18.100000	0.07418824	0.7180000	6.411000	100.00000
## 422	7.022590	0.00000	18.100000	0.00000000	0.7180000	6.282470	95.30000
## 423	12.048200	0.00000	18.100000	0.00000000	0.6140000	5.648000	87.60000
## 424	7.050420	0.00000	18.100000	0.00000000	0.6140000	6.103000	85.10000
## 425	8.792120	0.00000	18.100000	0.00000000	0.5840000	5.565000	70.60000
## 426	15.860300	0.00000	18.100000	0.00000000	0.6790000	5.896000	95.40000
## 427	12.247200	0.00000	18.100000	0.00000000	0.5840000	5.837000	59.70000
## 428	37.661900	0.00000	11.452198	0.00000000	0.6790000	6.202000	78.70000
## 429	4.711944	0.00000	11.326418	0.00000000	0.6790000	6.193000	78.10000
## 430	9.338890	0.00000	18.100000	0.00000000	0.6790000	6.380000	95.60000
## 431	8.492130	0.00000	18.100000	0.00000000	0.5840000	6.348000	86.10000
## 432	4.790929	0.00000	18.100000	0.00000000	0.5840000	6.833000	94.30000
## 433	6.444050	0.00000	18.100000	0.07324290	0.5840000	6.425000	74.80000
## 434	5.581070	0.00000	18.100000	0.00000000	0.7130000	6.436000	87.90000
## 435	13.913400	0.00000	18.100000	0.00000000	0.5568828	6.208000	95.00000
## 436	11.160400	10.62870	18.100000	0.00000000	0.7400000	6.629000	94.60000
## 437	14.420800	0.00000	18.100000	0.00000000	0.7400000	6.461000	93.30000
## 438	15.177200	0.00000	18.100000	0.00000000	0.5595235	6.152000	100.00000
## 439	13.678100	0.00000	18.100000	0.00000000	0.7400000	5.935000	87.90000
## 440	9.390630	0.00000	18.100000	0.00000000	0.7400000	5.627000	93.90000
## 441	22.051100	0.00000	18.100000	0.00000000	0.7400000	5.818000	92.40000
## 442	9.724180	0.00000	11.363775	0.00000000	0.7400000	6.406000	97.20000
## 443	5.666370	0.00000	18.100000	0.07522276	0.7400000	6.219000	100.00000
## 444	4.729714	0.00000	18.100000	0.00000000	0.7400000	6.485000	100.00000
## 445	12.802300	0.00000	11.440102	0.00000000	0.7400000	5.854000	96.60000
## 446	10.671800	10.93531	18.100000	0.07174372	0.7400000	6.298556	69.77715
## 447	6.288070	0.00000	18.100000	0.00000000	0.7400000	6.341000	96.40000
## 448	9.924850	0.00000	11.406780	0.00000000	0.7400000	6.251000	96.60000
## 449	9.329090	0.00000	18.100000	0.00000000	0.5606268	6.259907	98.70000
## 450	7.526010	0.00000	18.100000	0.07588552	0.7130000	6.417000	98.30000
## 451	6.717720	10.64278	18.100000	0.00000000	0.7130000	6.749000	92.60000
## 452	5.441140	0.00000	18.100000	0.00000000	0.7130000	6.295751	98.20000
## 453	5.090170	0.00000	18.100000	0.00000000	0.7130000	6.297000	91.80000
## 454	4.244034	0.00000	18.100000	0.00000000	0.7130000	6.287089	99.30000
## 455	9.513630	0.00000	18.100000	0.00000000	0.7130000	6.728000	94.10000
## 456	4.752370	0.00000	18.100000	0.07221376	0.7130000	6.525000	86.50000
## 457	4.668830	0.00000	18.100000	0.00000000	0.5585719	6.299810	87.90000
## 458	8.200580	0.00000	11.496407	0.00000000	0.7130000	5.936000	80.30000
## 459	7.752230	0.00000	11.573992	0.00000000	0.7130000	6.287315	83.70000

##	460	6.801170	0.00000	18.100000	0.00000000	0.7130000	6.081000	84.40000
##	461	4.812130	10.88709	18.100000	0.00000000	0.7130000	6.701000	70.07571
##	462	3.693110	0.00000	18.100000	0.00000000	0.7130000	6.376000	88.40000
##	463	4.257308	0.00000	11.533076	0.00000000	0.5604894	6.277147	69.21918
##	464	5.821150	0.00000	18.100000	0.00000000	0.7130000	6.513000	89.90000
##	465	7.839320	0.00000	18.100000	0.00000000	0.6550000	6.209000	65.40000
##	466	3.992079	0.00000	18.100000	0.00000000	0.6550000	5.759000	48.20000
##	467	3.774980	10.32434	18.100000	0.00000000	0.6550000	5.952000	84.70000
##	468	4.422280	0.00000	11.637873	0.00000000	0.5840000	6.286113	94.50000
##	469	15.575700	0.00000	18.100000	0.00000000	0.5800000	5.926000	71.00000
##	470	13.075100	0.00000	11.444933	0.00000000	0.5800000	5.713000	56.70000
##	471	4.348790	0.00000	18.100000	0.00000000	0.5800000	6.285335	84.00000
##	472	4.038410	0.00000	18.100000	0.00000000	0.5320000	6.229000	90.70000
##	473	3.568680	0.00000	18.100000	0.00000000	0.5800000	6.437000	75.00000
##	474	4.646890	0.00000	18.100000	0.06933189	0.6140000	6.980000	69.90585
##	475	8.055790	0.00000	18.100000	0.00000000	0.5840000	5.427000	95.40000
##	476	4.248126	0.00000	18.100000	0.00000000	0.5840000	6.162000	97.40000
##	477	4.871410	0.00000	18.100000	0.00000000	0.6140000	6.484000	93.60000
##	478	4.805753	0.00000	18.100000	0.06883780	0.6140000	5.304000	97.30000
##	479	10.233000	0.00000	18.100000	0.00000000	0.6140000	6.185000	96.70000
##	480	14.333700	0.00000	18.100000	0.00000000	0.5640060	6.229000	70.47606
##	481	5.824010	0.00000	18.100000	0.00000000	0.5320000	6.242000	64.70000
##	482	5.708180	10.88725	18.100000	0.00000000	0.5320000	6.750000	74.90000
##	483	5.731160	0.00000	18.100000	0.00000000	0.5320000	7.061000	77.00000
##	484	2.818380	0.00000	18.100000	0.00000000	0.5320000	5.762000	40.30000
##	485	2.378570	10.53394	11.400649	0.00000000	0.5830000	5.871000	41.90000
##	486	3.819626	0.00000	18.100000	0.00000000	0.5830000	6.312000	51.90000
##	487	5.691750	0.00000	18.100000	0.00000000	0.5830000	6.289413	79.80000
##	488	4.835670	0.00000	18.100000	0.00000000	0.5830000	5.905000	53.20000
##	489	0.150860	0.00000	27.740000	0.00000000	0.6090000	5.454000	92.70000
##	490	0.183370	0.00000	27.740000	0.00000000	0.6090000	5.414000	98.30000
##	491	0.207460	0.00000	27.740000	0.00000000	0.6090000	5.093000	98.00000
##	492	3.369345	0.00000	27.740000	0.00000000	0.5589729	5.983000	98.80000
##	493	0.111320	0.00000	27.740000	0.07022840	0.5562470	5.983000	83.50000
##	494	0.173310	0.00000	9.690000	0.00000000	0.5850000	6.259177	54.00000
##	495	0.279570	0.00000	9.690000	0.00000000	0.5850000	5.926000	42.60000
##	496	3.464148	0.00000	9.690000	0.00000000	0.5850000	5.670000	28.80000
##	497	0.289600	0.00000	9.690000	0.00000000	0.5850000	5.390000	72.90000
##	498	0.268380	10.76734	9.690000	0.00000000	0.5850000	5.794000	70.60000
##	499	0.239120	0.00000	9.690000	0.00000000	0.5850000	6.019000	65.30000
##	500	0.177830	0.00000	9.690000	0.00000000	0.5850000	5.569000	73.50000
##	501	0.224380	0.00000	9.690000	0.00000000	0.5850000	6.027000	79.70000
##	502	0.062630	0.00000	11.930000	0.00000000	0.5730000	6.593000	69.10000
##	503	0.045270	0.00000	11.930000	0.00000000	0.5730000	6.120000	76.70000
##	504	3.539895	0.00000	11.930000	0.00000000	0.5730000	6.976000	91.00000
##	505	0.109590	0.00000	11.930000	0.00000000	0.5730000	6.794000	89.30000
##	506	0.047410	0.00000	11.930000	0.00000000	0.5730000	6.030000	80.80000
##		dis	rad	tax	ptratio	black	lstat	
##	1	4.090000	1.000000	296.0000	15.30000	396.9000	4.98000	
##	2	4.967100	8.571248	242.0000	18.42391	396.9000	9.14000	
##	3	4.967100	2.000000	242.0000	17.80000	392.8300	4.03000	
##	4	6.062200	3.000000	222.0000	18.36397	394.6300	2.94000	
##	5	6.062200	3.000000	222.0000	18.70000	396.9000	5.33000	
##	6	6.062200	3.000000	407.9653	18.70000	394.1200	5.21000	



## 7	5.560500	5.000000	311.0000	18.46068	395.6000	12.43000
## 8	5.950500	9.255751	311.0000	15.20000	396.9000	19.15000
## 9	6.082100	5.000000	413.0400	15.20000	386.6300	29.93000
## 10	6.592100	5.000000	412.9954	15.20000	386.7100	17.10000
## 11	6.346700	5.000000	311.0000	15.20000	392.5200	20.45000
## 12	6.226700	5.000000	409.5009	15.20000	358.6878	13.27000
## 13	5.450900	5.000000	311.0000	15.20000	390.5000	12.74491
## 14	4.707500	4.000000	307.0000	21.00000	396.9000	12.78176
## 15	3.775007	4.000000	414.7047	21.00000	380.0200	10.26000
## 16	4.498600	4.000000	307.0000	21.00000	395.6200	8.47000
## 17	4.498600	4.000000	307.0000	21.00000	386.8500	6.58000
## 18	4.257900	4.000000	307.0000	21.00000	355.3198	14.67000
## 19	3.796500	4.000000	409.7086	21.00000	288.9900	11.69000
## 20	3.796500	4.000000	307.0000	21.00000	390.9500	11.28000
## 21	3.797900	9.412323	307.0000	21.00000	376.5700	21.02000
## 22	4.012300	4.000000	307.0000	21.00000	392.5300	13.83000
## 23	3.976900	4.000000	307.0000	18.58938	396.9000	18.72000
## 24	3.839084	4.000000	414.2100	21.00000	354.7166	19.88000
## 25	4.399600	4.000000	307.0000	21.00000	394.3300	16.30000
## 26	4.454600	4.000000	409.8097	21.00000	303.4200	16.51000
## 27	4.682000	9.139266	307.0000	21.00000	355.5970	14.81000
## 28	4.453400	4.000000	307.0000	21.00000	352.8996	17.28000
## 29	4.454700	4.000000	307.0000	21.00000	387.9400	12.80000
## 30	3.834460	4.000000	307.0000	21.00000	380.2300	11.98000
## 31	4.233000	4.000000	307.0000	21.00000	360.1700	22.60000
## 32	4.175000	9.229761	307.0000	21.00000	376.7300	13.04000
## 33	3.990000	4.000000	307.0000	21.00000	232.6000	27.71000
## 34	3.787200	4.000000	307.0000	21.00000	358.7700	12.86534
## 35	3.759800	4.000000	412.8608	21.00000	248.3100	20.34000
## 36	3.360300	5.000000	279.0000	19.20000	357.9032	9.68000
## 37	3.377900	5.000000	279.0000	19.20000	377.5600	11.41000
## 38	3.801363	5.000000	279.0000	19.20000	396.9000	8.77000
## 39	3.847300	5.000000	279.0000	19.20000	357.9428	10.13000
## 40	5.401100	3.000000	252.0000	18.40859	395.6300	4.32000
## 41	5.401100	3.000000	408.8919	18.35775	357.5002	1.98000
## 42	5.720900	3.000000	233.0000	17.90000	385.4100	4.84000
## 43	5.720900	3.000000	233.0000	17.90000	383.3700	12.65318
## 44	5.720900	3.000000	233.0000	17.90000	394.4600	7.44000
## 45	5.720900	3.000000	233.0000	17.90000	389.3900	9.55000
## 46	5.100400	3.000000	233.0000	17.90000	396.9000	10.21000
## 47	5.100400	3.000000	233.0000	18.42172	396.9000	14.15000
## 48	5.689400	3.000000	233.0000	17.90000	392.7400	18.80000
## 49	5.870000	3.000000	233.0000	17.90000	396.9000	30.81000
## 50	6.087700	3.000000	233.0000	17.90000	357.8165	16.20000
## 51	3.856551	4.000000	243.0000	16.80000	395.5600	13.45000
## 52	6.814700	4.000000	243.0000	16.80000	393.9700	12.51832
## 53	6.814700	4.000000	243.0000	16.80000	396.9000	5.28000
## 54	6.814700	4.000000	243.0000	16.80000	356.6077	12.42967
## 55	7.319700	3.000000	469.0000	21.10000	396.9000	12.49342
## 56	8.696600	5.000000	226.0000	17.90000	395.9300	4.81000
## 57	9.187600	2.000000	313.0000	17.30000	396.9000	5.77000
## 58	8.324800	5.000000	256.0000	15.10000	392.9000	12.30482
## 59	7.814800	8.000000	284.0000	19.70000	390.6800	6.86000
## 60	6.932000	8.000000	284.0000	19.70000	396.9000	9.22000

## 61	7.225400	8.000000	405.9352	19.70000	395.1100	13.15000
## 62	6.818500	8.000000	284.0000	19.70000	378.0800	14.44000
## 63	7.225500	8.000000	284.0000	19.70000	396.9000	6.73000
## 64	7.980900	8.000000	284.0000	18.50856	395.5800	9.50000
## 65	3.881734	3.000000	216.0000	18.60000	393.2400	8.05000
## 66	6.611500	4.000000	337.0000	16.10000	396.9000	4.67000
## 67	6.611500	4.000000	337.0000	18.49202	396.9000	10.24000
## 68	6.498000	4.000000	345.0000	18.90000	396.2100	12.37559
## 69	6.498000	4.000000	345.0000	18.90000	396.9000	13.09000
## 70	4.017278	4.000000	345.0000	18.90000	396.9000	8.79000
## 71	5.287300	4.000000	305.0000	19.20000	383.7300	6.72000
## 72	5.287300	4.000000	305.0000	19.20000	376.9400	9.88000
## 73	5.287300	4.000000	408.7840	19.20000	390.9100	5.52000
## 74	5.287300	4.000000	305.0000	19.20000	377.1700	12.23277
## 75	4.251500	5.000000	409.3326	18.70000	394.9200	6.78000
## 76	4.502600	5.000000	398.0000	18.70000	383.2300	8.94000
## 77	4.052200	5.000000	398.0000	18.70000	373.6600	11.97000
## 78	4.090500	5.000000	398.0000	18.70000	386.9600	10.27000
## 79	5.014100	5.000000	398.0000	18.70000	357.5839	12.34000
## 80	4.502600	5.000000	398.0000	18.70000	396.0600	9.10000
## 81	5.400700	4.000000	281.0000	19.00000	396.9000	5.29000
## 82	5.400700	4.000000	281.0000	19.00000	395.6300	7.22000
## 83	5.400700	4.000000	281.0000	19.00000	396.9000	6.72000
## 84	5.400700	4.000000	408.7805	19.00000	390.6400	7.51000
## 85	4.779400	8.740652	411.5788	18.50000	396.9000	9.62000
## 86	3.808437	8.999365	247.0000	18.50000	392.3000	6.53000
## 87	4.427200	3.000000	412.7352	18.50000	395.9900	12.86000
## 88	3.747600	3.000000	247.0000	18.50000	395.1500	8.44000
## 89	3.807738	2.000000	270.0000	17.80000	396.9000	5.50000
## 90	3.414500	2.000000	270.0000	17.80000	396.0600	5.70000
## 91	3.092300	2.000000	270.0000	17.80000	392.1800	8.81000
## 92	3.092100	2.000000	270.0000	17.80000	358.0959	8.20000
## 93	3.665900	4.000000	270.0000	18.20000	395.0100	8.16000
## 94	3.665900	4.000000	414.1334	18.20000	396.3300	6.21000
## 95	3.615000	4.000000	270.0000	18.20000	396.9000	12.38369
## 96	3.495200	2.000000	276.0000	18.00000	357.9800	6.65000
## 97	3.495200	2.000000	276.0000	18.00000	391.8300	11.34000
## 98	3.495200	8.679178	276.0000	18.00000	396.9000	4.21000
## 99	3.495200	2.000000	276.0000	18.00000	393.5300	3.57000
## 100	3.495200	2.000000	276.0000	18.00000	396.9000	6.19000
## 101	2.777800	5.000000	412.2289	18.43584	394.7600	9.42000
## 102	2.856100	5.000000	384.0000	20.90000	356.8415	7.67000
## 103	2.714700	5.000000	384.0000	20.90000	70.8000	10.63000
## 104	2.714700	5.000000	384.0000	20.90000	394.4700	13.44000
## 105	2.421000	5.000000	384.0000	20.90000	392.6900	12.33000
## 106	3.761839	5.000000	384.0000	20.90000	394.0500	16.47000
## 107	2.211000	5.000000	384.0000	20.90000	395.6700	18.66000
## 108	2.122400	9.201001	384.0000	20.90000	387.6900	14.09000
## 109	2.432900	5.000000	384.0000	20.90000	395.2400	12.27000
## 110	3.751346	5.000000	410.7279	20.90000	391.2300	12.94442
## 111	2.777800	5.000000	384.0000	20.90000	393.4900	13.00000
## 112	2.677500	6.000000	432.0000	17.80000	395.5900	10.16000
## 113	2.353400	6.000000	432.0000	17.80000	394.9500	16.21000
## 114	2.548000	6.000000	432.0000	17.80000	396.9000	17.09000

## 115	2.256500	6.000000	432.0000	17.80000	388.7400	10.45000
## 116	3.690652	9.311855	432.0000	17.80000	344.9100	15.76000
## 117	2.730100	6.000000	432.0000	17.80000	393.3000	12.76698
## 118	2.747400	6.000000	432.0000	17.80000	394.5100	10.30000
## 119	2.477500	6.000000	432.0000	17.80000	338.6300	15.37000
## 120	2.759200	6.000000	413.7805	17.80000	391.5000	13.61000
## 121	2.257700	2.000000	188.0000	19.10000	389.1500	14.37000
## 122	2.197400	2.000000	188.0000	19.10000	377.6700	14.27000
## 123	2.086900	2.000000	188.0000	19.10000	378.0900	17.93000
## 124	1.944400	2.000000	387.2228	19.10000	370.3100	25.41000
## 125	2.006300	2.000000	188.0000	19.10000	379.3800	13.17683
## 126	1.992900	2.000000	188.0000	19.10000	360.6875	14.81000
## 127	3.743354	2.000000	188.0000	18.47100	359.2900	27.26000
## 128	1.788300	4.000000	437.0000	21.20000	392.1100	17.19000
## 129	1.812500	4.000000	437.0000	21.20000	355.8570	15.39000
## 130	1.979900	9.507944	437.0000	18.71640	396.9000	18.34000
## 131	2.118500	4.000000	437.0000	21.20000	395.0400	12.60000
## 132	2.271000	4.000000	437.0000	21.20000	396.9000	12.26000
## 133	2.327400	4.000000	437.0000	21.20000	356.2564	11.12000
## 134	3.756853	4.000000	437.0000	21.20000	388.6900	15.03000
## 135	2.346000	4.000000	437.0000	21.20000	262.7600	17.31000
## 136	2.110700	4.000000	437.0000	21.20000	394.6700	16.96000
## 137	1.966900	9.005900	419.5640	21.20000	378.2500	16.90000
## 138	1.849800	4.000000	437.0000	18.91461	394.0800	14.59000
## 139	1.668600	4.000000	437.0000	21.20000	392.0400	21.32000
## 140	1.668700	4.000000	437.0000	21.20000	396.9000	18.46000
## 141	1.611900	9.866820	437.0000	21.20000	353.3339	24.16000
## 142	1.439400	9.601750	437.0000	21.20000	396.9000	34.41000
## 143	1.321600	5.000000	403.0000	14.70000	396.9000	26.82000
## 144	1.411800	5.000000	403.0000	18.28535	396.9000	26.42000
## 145	1.345900	5.000000	414.0177	14.70000	396.9000	29.29000
## 146	1.419100	5.000000	409.4914	14.70000	172.9100	27.80000
## 147	1.516600	5.000000	403.0000	14.70000	169.2700	16.65000
## 148	1.460800	9.365565	403.0000	14.70000	391.7100	29.53000
## 149	1.529600	5.000000	403.0000	14.70000	356.9900	28.32000
## 150	1.525700	5.000000	403.0000	14.70000	351.8500	21.45000
## 151	1.618000	5.000000	403.0000	14.70000	372.8000	14.10000
## 152	1.591600	5.000000	403.0000	14.70000	341.6000	13.28000
## 153	1.610200	5.000000	403.0000	14.70000	343.2800	12.12000
## 154	3.715852	5.000000	403.0000	14.70000	261.9500	15.79000
## 155	1.749400	5.000000	403.0000	14.70000	321.0200	15.12000
## 156	1.745500	5.000000	403.0000	14.70000	88.0100	13.07517
## 157	1.736400	5.000000	403.0000	14.70000	88.6300	16.14000
## 158	1.877300	5.000000	403.0000	14.70000	363.4300	4.59000
## 159	1.757300	5.000000	403.0000	14.70000	353.8900	6.43000
## 160	3.585330	5.000000	403.0000	18.25364	364.3100	7.39000
## 161	1.798400	5.000000	403.0000	18.17488	338.9200	5.50000
## 162	1.970900	5.000000	403.0000	18.34664	374.4300	1.73000
## 163	2.040700	5.000000	411.2332	14.70000	389.6100	1.92000
## 164	3.646772	5.000000	407.8521	14.70000	388.4500	11.53889
## 165	2.422000	5.000000	403.0000	14.70000	395.1100	11.64000
## 166	2.283400	5.000000	403.0000	14.70000	240.1600	9.81000
## 167	2.045900	5.000000	403.0000	14.70000	369.3000	3.70000
## 168	2.425900	5.000000	412.3455	14.70000	227.6100	12.14000

## 169	2.100000	5.000000	403.0000	14.70000	297.0900	11.10000
## 170	2.262500	5.000000	403.0000	14.70000	330.0400	11.32000
## 171	2.425900	9.214767	403.0000	14.70000	292.2900	14.43000
## 172	2.388700	5.000000	403.0000	14.70000	348.1300	12.03000
## 173	2.596100	5.000000	296.0000	16.60000	396.9000	14.69000
## 174	2.646300	5.000000	296.0000	16.60000	395.5000	9.04000
## 175	2.701900	5.000000	296.0000	16.60000	393.2300	9.64000
## 176	3.132300	5.000000	296.0000	16.60000	390.9600	5.33000
## 177	3.554900	5.000000	296.0000	16.60000	393.2300	10.11000
## 178	3.317500	5.000000	296.0000	16.60000	395.6000	6.29000
## 179	2.915300	5.000000	296.0000	16.60000	391.2700	6.92000
## 180	2.829000	3.000000	193.0000	17.80000	396.9000	5.04000
## 181	2.741000	3.000000	410.8021	17.80000	395.5600	7.56000
## 182	2.597900	3.000000	413.8671	17.80000	396.9000	9.45000
## 183	3.659096	3.000000	193.0000	17.80000	394.1200	4.82000
## 184	2.847000	8.896827	193.0000	17.80000	396.9000	12.61015
## 185	2.987900	3.000000	193.0000	17.80000	391.0000	12.69278
## 186	3.279700	3.000000	402.8629	17.80000	387.1100	13.15000
## 187	3.199200	3.000000	193.0000	17.80000	392.6300	4.45000
## 188	3.788600	5.000000	398.0000	15.20000	393.8700	6.68000
## 189	4.566700	5.000000	398.0000	15.20000	382.8400	4.56000
## 190	3.944687	9.007756	398.0000	15.20000	396.9000	5.39000
## 191	6.479800	5.000000	398.0000	15.20000	377.6800	5.10000
## 192	6.479800	5.000000	398.0000	15.20000	389.7100	4.69000
## 193	6.479800	8.989288	398.0000	15.20000	390.4900	2.87000
## 194	6.219600	1.000000	265.0000	15.60000	358.7760	5.03000
## 195	6.219600	1.000000	265.0000	15.60000	376.7000	4.38000
## 196	5.648400	4.000000	408.5798	14.40000	394.2300	12.02316
## 197	7.309000	2.000000	329.0000	12.60000	396.9000	4.08000
## 198	7.309000	2.000000	329.0000	12.60000	354.3100	8.61000
## 199	4.220541	2.000000	329.0000	18.25423	392.2000	11.91552
## 200	7.653400	3.000000	402.0000	17.00000	396.9000	4.56000
## 201	7.653400	3.000000	402.0000	17.00000	384.3000	4.45000
## 202	6.270000	2.000000	348.0000	14.70000	393.7700	7.43000
## 203	6.270000	2.000000	348.0000	14.70000	395.3800	3.11000
## 204	5.118000	4.000000	406.8235	14.70000	392.7800	3.81000
## 205	5.118000	4.000000	224.0000	18.21775	390.5500	2.88000
## 206	3.945400	4.000000	277.0000	18.60000	396.9000	10.87000
## 207	4.354900	4.000000	277.0000	18.49984	394.8700	10.97000
## 208	4.354900	4.000000	277.0000	18.60000	389.4300	18.06000
## 209	4.239200	4.000000	277.0000	18.60000	381.3200	14.66000
## 210	3.749145	4.000000	409.3114	18.60000	396.9000	23.09000
## 211	3.877100	4.000000	277.0000	18.42410	393.2500	17.27000
## 212	3.665000	4.000000	277.0000	18.60000	359.6795	23.98000
## 213	3.652600	4.000000	277.0000	18.60000	390.9400	16.03000
## 214	3.759690	4.000000	277.0000	18.45155	385.8100	9.38000
## 215	3.587500	4.000000	277.0000	18.52486	348.9300	29.55000
## 216	3.945400	4.000000	277.0000	18.60000	393.6300	12.63935
## 217	3.112100	5.000000	276.0000	16.40000	392.8000	13.51000
## 218	3.421100	5.000000	276.0000	16.40000	392.7800	9.69000
## 219	2.889300	5.000000	276.0000	16.40000	396.9000	17.92000
## 220	3.363300	5.000000	276.0000	16.40000	393.7400	10.50000
## 221	2.861700	8.000000	307.0000	17.40000	391.7000	9.71000
## 222	3.048000	8.000000	307.0000	17.40000	395.2400	21.46000

## 223	3.272100	8.000000	307.0000	17.40000	390.3900	9.93000
## 224	3.272100	8.000000	307.0000	17.40000	396.9000	7.60000
## 225	2.894400	8.000000	307.0000	17.40000	385.0500	12.08511
## 226	2.894400	8.000000	307.0000	17.40000	382.0000	4.63000
## 227	3.215700	8.000000	307.0000	17.40000	387.3800	3.13000
## 228	3.215700	9.197909	307.0000	17.40000	372.0800	6.36000
## 229	3.375100	8.000000	307.0000	17.40000	377.5100	3.92000
## 230	3.375100	8.000000	307.0000	17.40000	380.3400	3.76000
## 231	3.671500	8.000000	307.0000	18.40101	378.3500	11.65000
## 232	3.671500	8.000000	307.0000	17.40000	376.1400	5.25000
## 233	3.838400	8.000000	307.0000	17.40000	385.9100	2.47000
## 234	3.651900	8.000000	307.0000	17.40000	378.9500	3.95000
## 235	3.651900	8.000000	307.0000	17.40000	358.0803	8.05000
## 236	3.651900	8.000000	307.0000	17.40000	376.7500	10.88000
## 237	4.148000	8.000000	307.0000	17.40000	388.4500	9.54000
## 238	4.148000	9.204870	307.0000	17.40000	390.0700	4.73000
## 239	6.189900	6.000000	300.0000	16.60000	379.4100	6.36000
## 240	6.189900	6.000000	300.0000	16.60000	383.7800	7.37000
## 241	6.336100	6.000000	300.0000	16.60000	391.2500	11.38000
## 242	4.052551	8.999174	300.0000	16.60000	394.6200	12.40000
## 243	7.035500	8.952993	300.0000	16.60000	372.7500	11.22000
## 244	7.035500	6.000000	300.0000	16.60000	374.7100	5.19000
## 245	7.954900	7.000000	330.0000	19.10000	372.4900	12.50000
## 246	7.954900	9.124224	330.0000	18.60189	389.1300	18.46000
## 247	4.209716	9.014513	330.0000	19.10000	390.1800	9.16000
## 248	8.055500	9.028683	330.0000	19.10000	376.1400	10.15000
## 249	7.826500	7.000000	330.0000	19.10000	374.7100	9.52000
## 250	7.826500	7.000000	330.0000	19.10000	393.7400	6.56000
## 251	7.396700	7.000000	330.0000	19.10000	396.2800	5.90000
## 252	3.996861	7.000000	330.0000	19.10000	377.0700	3.59000
## 253	8.906700	7.000000	330.0000	19.10000	359.3807	3.53000
## 254	8.906700	7.000000	330.0000	19.10000	396.9000	3.54000
## 255	9.220300	1.000000	315.0000	16.40000	392.8900	6.57000
## 256	9.220300	1.000000	315.0000	16.40000	395.1800	9.25000
## 257	6.336100	3.000000	244.0000	15.90000	386.3400	3.11000
## 258	1.801000	5.000000	264.0000	13.00000	389.7000	5.12000
## 259	1.894600	5.000000	264.0000	13.00000	383.2900	7.79000
## 260	2.010700	5.000000	264.0000	13.00000	391.9300	6.90000
## 261	2.112100	5.000000	264.0000	13.00000	392.8000	9.59000
## 262	2.139800	5.000000	264.0000	13.00000	388.3700	7.26000
## 263	2.288500	5.000000	264.0000	13.00000	386.8600	12.36724
## 264	2.078800	5.000000	264.0000	13.00000	393.4200	11.25000
## 265	1.930100	5.000000	264.0000	13.00000	387.8900	8.10000
## 266	1.986500	5.000000	264.0000	13.00000	392.4000	10.45000
## 267	2.132900	9.108643	264.0000	13.00000	384.0700	14.79000
## 268	2.421600	5.000000	264.0000	17.97280	384.5400	7.44000
## 269	2.872000	5.000000	264.0000	13.00000	390.3000	3.16000
## 270	3.917500	3.000000	223.0000	18.60000	391.3400	13.65000
## 271	4.429000	3.000000	223.0000	18.60000	388.6500	13.00000
## 272	4.429000	3.000000	409.1554	18.60000	396.9000	12.55398
## 273	3.917500	3.000000	223.0000	18.60000	394.9600	7.73000
## 274	4.366500	3.000000	406.5667	18.60000	390.7700	6.58000
## 275	4.077600	4.000000	254.0000	17.60000	396.9000	3.53000
## 276	4.267300	4.000000	408.3539	18.34752	396.9000	2.98000

## 277	4.787200	4.000000	254.0000	17.60000	389.2500	6.05000
## 278	4.862800	4.000000	254.0000	17.60000	393.4500	11.92265
## 279	4.140300	4.000000	254.0000	17.60000	357.8770	7.19000
## 280	3.879041	5.000000	216.0000	14.90000	396.9000	4.85000
## 281	4.694700	5.000000	216.0000	14.90000	387.3100	3.76000
## 282	5.244700	8.542314	216.0000	14.90000	392.2300	4.59000
## 283	3.839592	5.000000	216.0000	14.90000	377.0700	3.01000
## 284	4.255309	1.000000	198.0000	13.60000	395.5200	3.16000
## 285	7.307300	1.000000	285.0000	15.30000	394.7200	11.73898
## 286	7.307300	1.000000	300.0000	15.30000	394.7200	8.23000
## 287	9.089200	1.000000	241.0000	18.20000	341.6000	12.93000
## 288	7.317200	6.000000	293.0000	16.60000	396.9000	7.14000
## 289	7.317200	6.000000	293.0000	16.60000	358.5330	7.60000
## 290	7.317200	6.000000	293.0000	16.60000	371.7200	9.51000
## 291	3.971546	4.000000	408.1601	18.40777	396.9000	3.33000
## 292	3.971544	4.000000	245.0000	19.20000	396.9000	3.56000
## 293	5.116700	4.000000	245.0000	19.20000	396.9000	4.70000
## 294	5.502700	4.000000	289.0000	16.00000	357.3492	8.58000
## 295	3.938631	4.000000	411.9315	16.00000	396.9000	10.40000
## 296	5.960400	4.000000	289.0000	16.00000	357.0833	6.27000
## 297	5.960400	4.000000	289.0000	16.00000	392.8500	7.39000
## 298	6.320000	4.000000	289.0000	16.00000	396.9000	15.84000
## 299	7.827800	5.000000	358.0000	14.80000	368.2400	4.97000
## 300	4.084190	5.000000	358.0000	14.80000	371.5800	4.74000
## 301	7.827800	5.000000	358.0000	14.80000	390.8600	6.07000
## 302	5.491700	7.000000	406.1068	16.10000	395.7500	9.50000
## 303	5.491700	7.000000	329.0000	16.10000	383.6100	8.67000
## 304	5.491700	7.000000	329.0000	16.10000	357.8202	4.86000
## 305	4.022000	7.000000	222.0000	18.40000	393.6800	6.93000
## 306	3.370000	7.000000	222.0000	18.40000	393.3600	8.93000
## 307	3.099200	7.000000	222.0000	18.40000	396.9000	11.96809
## 308	3.182700	7.000000	222.0000	18.40000	358.9647	7.53000
## 309	3.317500	9.096637	304.0000	18.40000	396.9000	4.54000
## 310	3.102500	4.000000	304.0000	18.40000	396.2400	12.62711
## 311	2.519400	4.000000	304.0000	18.40000	354.6146	12.64000
## 312	2.640300	4.000000	304.0000	18.40000	357.9860	5.98000
## 313	2.834000	4.000000	304.0000	18.40000	355.7854	11.72000
## 314	3.262800	4.000000	304.0000	18.41749	393.3900	7.90000
## 315	3.733353	4.000000	304.0000	18.40000	395.6900	9.28000
## 316	3.945000	4.000000	304.0000	18.40000	396.4200	11.50000
## 317	3.998600	9.275296	412.4069	18.40000	390.7000	18.33000
## 318	4.031700	4.000000	304.0000	18.40000	396.9000	12.70271
## 319	3.532500	4.000000	304.0000	18.40000	395.2100	10.36000
## 320	4.001900	4.000000	304.0000	18.40000	396.2300	12.73000
## 321	4.540400	5.000000	287.0000	19.60000	396.9000	7.20000
## 322	4.540400	5.000000	287.0000	19.60000	396.9000	6.87000
## 323	4.721100	5.000000	287.0000	19.60000	396.9000	7.70000
## 324	4.721100	9.090305	287.0000	19.60000	391.1300	11.74000
## 325	3.888486	8.984796	287.0000	19.60000	396.9000	6.12000
## 326	5.415900	5.000000	287.0000	19.60000	393.6800	5.08000
## 327	5.415900	5.000000	287.0000	19.60000	396.9000	6.15000
## 328	5.415900	5.000000	287.0000	19.60000	396.9000	12.79000
## 329	5.214600	4.000000	410.1987	16.90000	382.4400	9.97000
## 330	5.214600	4.000000	430.0000	16.90000	375.2100	7.34000

## 331	5.873600	4.000000	430.0000	16.90000	356.1527	9.09000
## 332	6.640700	1.000000	409.2553	16.90000	394.0200	12.43000
## 333	6.640700	1.000000	304.0000	16.90000	362.2500	7.83000
## 334	6.458400	5.000000	224.0000	18.48981	389.7100	5.68000
## 335	6.458400	5.000000	224.0000	20.20000	389.4000	6.75000
## 336	5.985300	8.797651	224.0000	20.20000	396.9000	8.01000
## 337	5.231100	5.000000	224.0000	20.20000	396.9000	9.80000
## 338	5.615000	5.000000	224.0000	20.20000	394.8100	10.56000
## 339	4.812200	5.000000	224.0000	20.20000	396.1400	8.51000
## 340	4.812200	5.000000	224.0000	20.20000	396.9000	9.74000
## 341	4.812200	5.000000	224.0000	20.20000	396.9000	9.29000
## 342	7.037900	1.000000	284.0000	15.50000	394.7400	5.49000
## 343	6.266900	1.000000	422.0000	15.90000	389.9600	8.65000
## 344	5.732100	5.000000	370.0000	17.60000	396.9000	11.94077
## 345	4.170877	5.000000	370.0000	17.60000	387.9700	4.61000
## 346	8.013600	3.000000	352.0000	18.80000	385.6400	10.53000
## 347	8.013600	3.000000	352.0000	18.80000	364.6100	12.67000
## 348	8.535300	4.000000	351.0000	17.90000	392.4300	6.36000
## 349	8.344000	4.000000	280.0000	17.00000	390.9400	5.99000
## 350	8.792100	1.000000	335.0000	18.51482	389.8500	5.89000
## 351	8.792100	1.000000	335.0000	19.70000	396.9000	5.98000
## 352	10.710300	4.000000	411.0000	18.30000	370.7800	5.49000
## 353	10.710300	4.000000	411.0000	18.30000	392.3300	7.79000
## 354	12.126500	5.000000	187.0000	17.00000	384.4600	4.50000
## 355	10.585700	4.000000	334.0000	22.00000	382.8000	8.05000
## 356	10.585700	4.000000	334.0000	22.00000	358.7630	5.57000
## 357	2.122200	10.030775	666.0000	20.20000	377.7300	17.60000
## 358	2.505200	24.000000	666.0000	20.20000	391.3400	13.27000
## 359	2.722700	24.000000	666.0000	20.20000	395.4300	11.48000
## 360	2.509100	24.000000	431.9789	20.20000	390.7400	12.67000
## 361	2.518200	10.304625	666.0000	20.20000	374.5600	12.71673
## 362	2.295500	24.000000	666.0000	20.20000	350.6500	14.19000
## 363	2.103600	24.000000	666.0000	18.63292	380.7900	10.19000
## 364	1.904700	24.000000	666.0000	20.20000	353.0400	12.41181
## 365	1.904700	24.000000	666.0000	20.20000	354.5500	5.29000
## 366	1.613200	24.000000	666.0000	20.20000	354.7000	7.12000
## 367	1.752300	24.000000	666.0000	20.20000	316.0300	14.00000
## 368	1.510600	24.000000	666.0000	20.20000	131.4200	13.33000
## 369	1.332500	24.000000	666.0000	20.20000	375.5200	3.26000
## 370	1.356700	24.000000	666.0000	20.20000	375.3300	3.73000
## 371	1.202400	10.220243	409.5017	20.20000	392.0500	2.96000
## 372	1.169100	24.000000	666.0000	20.20000	366.1500	9.53000
## 373	1.129600	24.000000	666.0000	20.20000	347.8800	8.88000
## 374	1.174200	24.000000	666.0000	20.20000	396.9000	34.77000
## 375	1.137000	24.000000	666.0000	20.20000	396.9000	37.97000
## 376	1.316300	24.000000	666.0000	20.20000	396.9000	13.44000
## 377	1.344900	24.000000	666.0000	20.20000	363.0200	23.24000
## 378	1.358000	24.000000	666.0000	20.20000	396.9000	21.24000
## 379	3.570392	24.000000	666.0000	20.20000	396.9000	23.69000
## 380	1.386100	24.000000	666.0000	20.20000	393.7400	13.44869
## 381	1.416500	24.000000	666.0000	20.20000	396.9000	17.21000
## 382	1.519200	24.000000	666.0000	20.20000	396.9000	21.08000
## 383	1.580400	24.000000	666.0000	20.20000	396.9000	23.60000
## 384	1.533100	24.000000	666.0000	20.20000	396.9000	24.56000

## 385	1.439500	24.000000	666.0000	18.53927	285.8300	30.63000
## 386	1.426100	24.000000	434.0163	20.20000	396.9000	13.76518
## 387	1.467200	24.000000	666.0000	18.60076	396.9000	28.28000
## 388	1.518400	24.000000	437.1237	20.20000	396.9000	31.99000
## 389	1.589500	24.000000	666.0000	20.20000	372.9200	30.62000
## 390	1.728100	24.000000	666.0000	20.20000	358.6089	20.85000
## 391	1.926500	24.000000	666.0000	20.20000	357.1516	17.11000
## 392	2.167800	24.000000	666.0000	20.20000	378.3800	18.76000
## 393	1.770000	24.000000	666.0000	20.20000	396.9000	25.68000
## 394	1.791200	24.000000	432.6897	20.20000	349.2598	15.17000
## 395	1.782100	24.000000	666.0000	20.20000	396.9000	16.35000
## 396	1.725700	24.000000	666.0000	20.20000	391.9800	17.12000
## 397	3.642834	24.000000	666.0000	20.20000	396.9000	19.37000
## 398	1.633400	24.000000	666.0000	20.20000	393.1000	19.92000
## 399	1.489600	24.000000	666.0000	20.20000	396.9000	30.59000
## 400	1.500400	24.000000	666.0000	20.20000	338.1600	29.97000
## 401	1.588800	24.000000	666.0000	20.20000	396.9000	26.77000
## 402	1.574100	24.000000	666.0000	20.20000	396.9000	20.32000
## 403	1.639000	24.000000	666.0000	20.20000	376.1100	20.31000
## 404	1.702800	10.528663	666.0000	18.65312	396.9000	13.87938
## 405	1.607400	24.000000	666.0000	20.20000	329.4600	27.38000
## 406	1.425400	10.469465	666.0000	20.20000	384.9700	22.98000
## 407	1.178100	24.000000	666.0000	20.20000	370.2200	23.34000
## 408	1.285200	24.000000	666.0000	20.20000	350.5701	12.13000
## 409	1.454700	10.643473	666.0000	18.58034	314.6400	26.40000
## 410	1.465500	24.000000	666.0000	20.20000	179.3600	19.78000
## 411	1.413000	24.000000	666.0000	20.20000	2.6000	10.11000
## 412	1.527500	24.000000	666.0000	20.20000	35.0500	21.22000
## 413	3.483733	24.000000	666.0000	20.20000	28.7900	34.37000
## 414	1.589400	24.000000	666.0000	20.20000	210.9700	20.08000
## 415	1.658200	24.000000	666.0000	20.20000	88.2700	36.98000
## 416	1.834700	24.000000	666.0000	20.20000	27.2500	29.05000
## 417	1.819500	9.907597	666.0000	20.20000	21.5700	13.03665
## 418	1.647500	24.000000	666.0000	20.20000	357.4817	26.64000
## 419	1.802600	24.000000	666.0000	20.20000	16.4500	20.62000
## 420	3.582979	24.000000	666.0000	20.20000	48.4500	22.74000
## 421	1.858900	24.000000	666.0000	20.20000	318.7500	15.02000
## 422	1.874600	24.000000	666.0000	20.20000	319.9800	15.70000
## 423	1.951200	24.000000	666.0000	20.20000	291.5500	14.10000
## 424	2.021800	24.000000	666.0000	20.20000	2.5200	23.29000
## 425	2.063500	24.000000	666.0000	18.54764	3.6500	17.16000
## 426	1.909600	24.000000	666.0000	20.20000	7.6800	24.39000
## 427	1.997600	24.000000	666.0000	20.20000	24.6500	15.69000
## 428	1.862900	24.000000	666.0000	20.20000	18.8200	14.52000
## 429	1.935600	24.000000	666.0000	20.20000	96.7300	21.52000
## 430	1.968200	24.000000	666.0000	20.20000	60.7200	24.08000
## 431	2.052700	24.000000	666.0000	20.20000	83.4500	17.64000
## 432	2.088200	24.000000	666.0000	18.48585	81.3300	19.69000
## 433	2.200400	24.000000	666.0000	20.20000	97.9500	12.03000
## 434	2.315800	24.000000	666.0000	20.20000	100.1900	16.22000
## 435	2.222200	24.000000	666.0000	20.20000	100.6300	15.17000
## 436	2.124700	9.982769	666.0000	20.20000	109.8500	23.27000
## 437	3.582867	24.000000	666.0000	18.53566	27.4900	18.05000
## 438	1.914200	24.000000	666.0000	20.20000	9.3200	26.45000



## 439	1.820600	24.000000	666.0000	20.20000	345.0336	34.02000
## 440	1.817200	24.000000	666.0000	20.20000	396.9000	22.88000
## 441	1.866200	24.000000	666.0000	20.20000	391.4500	22.11000
## 442	2.065100	24.000000	666.0000	20.20000	385.9600	19.52000
## 443	3.568560	24.000000	666.0000	20.20000	395.6900	16.59000
## 444	3.580196	9.866016	666.0000	20.20000	347.3532	13.22156
## 445	1.895600	24.000000	666.0000	20.20000	240.5200	23.79000
## 446	3.556706	24.000000	666.0000	20.20000	43.0600	23.98000
## 447	2.072000	24.000000	666.0000	20.20000	318.0100	17.79000
## 448	2.198000	10.871955	666.0000	20.20000	388.5200	16.44000
## 449	2.261600	24.000000	666.0000	20.20000	396.9000	18.13000
## 450	2.185000	24.000000	666.0000	20.20000	304.2100	12.86043
## 451	2.323600	24.000000	666.0000	20.20000	0.3200	17.44000
## 452	2.355200	10.829330	666.0000	20.20000	355.2900	17.73000
## 453	2.368200	24.000000	666.0000	20.20000	385.0900	17.27000
## 454	2.452700	24.000000	666.0000	20.20000	375.8700	16.74000
## 455	2.496100	24.000000	666.0000	20.20000	6.6800	18.71000
## 456	2.435800	24.000000	666.0000	20.20000	50.9200	18.13000
## 457	2.580600	24.000000	666.0000	20.20000	10.4800	19.01000
## 458	2.779200	24.000000	666.0000	20.20000	3.5000	16.94000
## 459	2.783100	24.000000	666.0000	20.20000	272.2100	16.23000
## 460	2.717500	24.000000	666.0000	20.20000	396.9000	14.70000
## 461	2.597500	24.000000	666.0000	20.20000	255.2300	16.42000
## 462	2.567100	24.000000	666.0000	20.20000	391.4300	12.86469
## 463	2.734400	24.000000	666.0000	20.20000	396.9000	13.99000
## 464	2.801600	24.000000	666.0000	20.20000	353.3064	10.29000
## 465	2.963400	24.000000	666.0000	20.20000	396.9000	13.22000
## 466	3.066500	24.000000	666.0000	20.20000	334.4000	14.13000
## 467	3.661836	24.000000	666.0000	20.20000	22.0100	17.15000
## 468	2.540300	24.000000	666.0000	20.20000	331.2900	21.32000
## 469	2.908400	9.913510	666.0000	20.20000	368.7400	18.13000
## 470	2.823700	24.000000	666.0000	20.20000	396.9000	14.76000
## 471	3.033400	24.000000	666.0000	20.20000	396.9000	12.96769
## 472	3.099300	24.000000	666.0000	20.20000	395.3300	12.87000
## 473	2.896500	24.000000	666.0000	20.20000	393.3700	14.36000
## 474	2.532900	24.000000	666.0000	18.55659	350.1183	11.66000
## 475	3.416246	24.000000	666.0000	18.50785	352.5800	18.14000
## 476	2.206000	24.000000	666.0000	20.20000	302.7600	24.10000
## 477	2.305300	24.000000	666.0000	18.53927	396.2100	18.68000
## 478	2.100700	24.000000	666.0000	20.20000	349.4800	24.91000
## 479	2.170500	24.000000	666.0000	18.56591	379.7000	18.03000
## 480	1.951200	24.000000	666.0000	20.20000	383.3200	13.11000
## 481	3.424200	11.207851	666.0000	20.20000	396.9000	10.74000
## 482	3.331700	24.000000	666.0000	20.20000	393.0700	7.74000
## 483	3.410600	24.000000	666.0000	20.20000	395.2800	7.01000
## 484	4.098300	24.000000	666.0000	20.20000	392.9200	10.42000
## 485	3.724000	9.226464	411.4657	20.20000	370.7300	13.34000
## 486	3.991700	24.000000	666.0000	20.20000	388.6200	10.58000
## 487	3.545900	24.000000	666.0000	20.20000	392.6800	14.98000
## 488	3.152300	24.000000	666.0000	20.20000	388.2200	11.45000
## 489	1.820900	9.271870	711.0000	18.58644	395.0900	18.06000
## 490	1.755400	4.000000	711.0000	20.10000	344.0500	23.97000
## 491	1.822600	4.000000	711.0000	20.10000	318.4300	29.68000
## 492	1.868100	4.000000	711.0000	20.10000	390.1100	18.07000

## 493	2.109900	4.000000	711.0000	20.10000	396.9000	13.35000
## 494	2.381700	6.000000	391.0000	18.56060	396.9000	12.79790
## 495	2.381700	6.000000	391.0000	19.20000	396.9000	12.74341
## 496	2.798600	6.000000	391.0000	19.20000	355.5148	17.60000
## 497	2.798600	6.000000	391.0000	19.20000	396.9000	21.14000
## 498	2.892700	6.000000	391.0000	19.20000	396.9000	14.10000
## 499	2.409100	6.000000	391.0000	19.20000	396.9000	12.92000
## 500	2.399900	6.000000	410.3919	19.20000	395.7700	15.10000
## 501	2.498200	6.000000	391.0000	18.53795	396.9000	14.33000
## 502	2.478600	1.000000	401.9878	21.00000	391.9900	9.67000
## 503	2.287500	1.000000	273.0000	21.00000	396.9000	9.08000
## 504	2.167500	9.071611	273.0000	21.00000	396.9000	5.64000
## 505	2.388900	1.000000	273.0000	21.00000	393.4500	6.48000
## 506	2.505000	1.000000	273.0000	21.00000	396.9000	7.88000