

## Reference: <https://archive.ics.uci.edu/ml/datasets/Wine+Quality>

```
In [1]: using CSV, DataFrames, GLM, RegressionTables, Plots, Gadfly, BoxCoxTrans, Statistics
```

```
In [2]: data = CSV.read("winequality-red.csv", DataFrame);
```

```
In [3]: names(data)
```

```
Out[3]: 12-element Vector{String}:
"fixed acidity"
"volatile acidity"
"citric acid"
"residual sugar"
"chlorides"
"free sulfur dioxide"
"total sulfur dioxide"
"density"
"pH"
"sulphates"
"alcohol"
"quality"
```

```
In [4]: sz = size(data)
```

```
Out[4]: (1599, 12)
```

```
In [5]: describe(data)
```

```
Out[5]: 12 rows × 7 columns
```

	<b>variable</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>nmissing</b>	<b>eltype</b>
	<b>Symbol</b>	<b>Float64</b>	<b>Real</b>	<b>Float64</b>	<b>Real</b>	<b>Int64</b>	<b>DataType</b>
<b>1</b>	fixed acidity	8.31964	4.6	7.9	15.9	0	Float64
<b>2</b>	volatile acidity	0.527821	0.12	0.52	1.58	0	Float64

	<b>variable</b>	<b>mean</b>	<b>min</b>	<b>median</b>	<b>max</b>	<b>nmissing</b>	<b>eltype</b>
	<b>Symbol</b>	<b>Float64</b>	<b>Real</b>	<b>Float64</b>	<b>Real</b>	<b>Int64</b>	<b>DataType</b>
<b>3</b>	citric acid	0.270976	0.0	0.26	1.0	0	Float64
<b>4</b>	residual sugar	2.53881	0.9	2.2	15.5	0	Float64
<b>5</b>	chlorides	0.0874665	0.012	0.079	0.611	0	Float64
<b>6</b>	free sulfur dioxide	15.8749	1.0	14.0	72.0	0	Float64
<b>7</b>	total sulfur dioxide	46.4678	6.0	38.0	289.0	0	Float64
<b>8</b>	density	0.996747	0.99007	0.99675	1.00369	0	Float64
<b>9</b>	pH	3.31111	2.74	3.31	4.01	0	Float64
<b>10</b>	sulphates	0.658149	0.33	0.62	2.0	0	Float64
<b>11</b>	alcohol	10.423	8.4	10.2	14.9	0	Float64
<b>12</b>	quality	5.63602	3	6.0	8	0	Int64

In [6]: `first(data, 10)`

Out[6]: 10 rows × 12 columns (omitted printing of 6 columns)

	<b>fixed acidity</b>	<b>volatile acidity</b>	<b>citric acid</b>	<b>residual sugar</b>	<b>chlorides</b>	<b>free sulfur dioxide</b>
	<b>Float64</b>	<b>Float64</b>	<b>Float64</b>	<b>Float64</b>	<b>Float64</b>	<b>Float64</b>
<b>1</b>	7.4	0.7	0.0	1.9	0.076	11.0
<b>2</b>	7.8	0.88	0.0	2.6	0.098	25.0
<b>3</b>	7.8	0.76	0.04	2.3	0.092	15.0
<b>4</b>	11.2	0.28	0.56	1.9	0.075	17.0
<b>5</b>	7.4	0.7	0.0	1.9	0.076	11.0
<b>6</b>	7.4	0.66	0.0	1.8	0.075	13.0
<b>7</b>	7.9	0.6	0.06	1.6	0.069	15.0
<b>8</b>	7.3	0.65	0.0	1.2	0.065	15.0

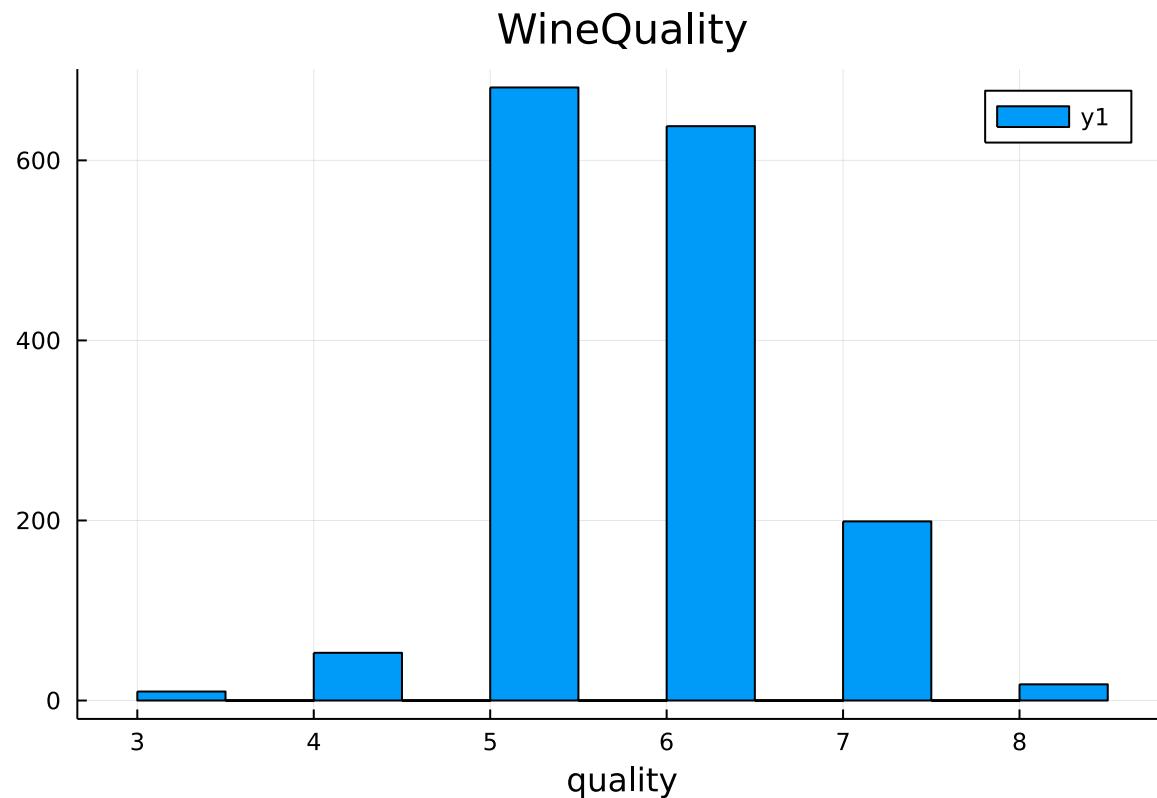
	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide
	Float64	Float64	Float64	Float64	Float64	Float64
9	7.8	0.58	0.02	2.0	0.073	9.0
10	7.5	0.5	0.36	6.1	0.071	17.0

## (a) WineQuality Distribution

In [7]:

```
h = Plots.histogram(data[!, :quality], bins = 20, xlabel = "quality", title = "WineQuality")
```

Out[7]:



The distribution of the histogram very likely symmetric. As the score represent the quality of the wine, there are not so many higher or lower quality of wine. The quality between (5-6) scales are the majority

## (b) Association

- Rename the Columns

In [8]:

```
rename!(data, Dict(
    :"fixed acidity" => :"fixed_acidity",
    :"volatile acidity" => :"volatile_acidity",
    :"citric acid" => :"citric_acid",
    :"free sulfur dioxide" => :"free_sulfur_dioxide",
    :"total sulfur dioxide" => :"total_sulfur_dioxide",
    :"residual sugar" => :"residual_sugar"));
```

In [9]:

```
println("fixed_acidity & quality Correlation: ", Statistics.cor(data.fixed_acidity, data.quality))
println("volatile_acidity & quality Correlation: ", Statistics.cor(data.volatle_acidity, data.quality))
println("citric_acid & quality Correlation: ", Statistics.cor(data.citric_acid, data.quality))
println("free_sulfur_dioxide & quality Correlation: ", Statistics.cor(data.free_sulfur_dioxide, data.quality))
println("total_sulfur_dioxide & quality Correlation: ", Statistics.cor(data.total_sulfur_dioxide, data.quality))
println("residual_sugar & quality Correlation: ", Statistics.cor(data.residual_sugar, data.quality))
println("chlorides & quality Correlation: ", Statistics.cor(data.chlorides, data.quality))
println("density & quality Correlation: ", Statistics.cor(data.density, data.quality))
println("pH & quality Correlation: ", Statistics.cor(data.pH, data.quality))
println("sulphates & quality Correlation: ", Statistics.cor(data.sulphates, data.quality))
println("alcohol & quality Correlation: ", Statistics.cor(data.alcohol, data.quality))
```

fixed\_acidity & quality Correlation: 0.12405164911322426  
 volatile\_acidity & quality Correlation: -0.39055778026400706  
 citric\_acid & quality Correlation: 0.2263725143180413  
 free\_sulfur\_dioxide & quality Correlation: -0.050656057244276305  
 total\_sulfur\_dioxide & quality Correlation: -0.1851002889265378  
 residual\_sugar & quality Correlation: 0.013731637340066261  
 chlorides & quality Correlation: -0.12890655993005268  
 density & quality Correlation: -0.1749192277833487  
 pH & quality Correlation: -0.05773139120538212  
 sulphates & quality Correlation: 0.25139707906926145  
 alcohol & quality Correlation: 0.4761663240011358

In [10]:

```
p1 = scatter(data[!,:alcohol], data[!,:quality], title = "alcohol VS quality");
p2 = scatter(data[!,:sulphates], data[!,:quality], title = "sulphates VS quality");
p3 = scatter(data[!,:pH], data[!,:quality], title = "pH VS quality");
p4 = scatter(data[!,:density], data[!,:quality], title = "density VS quality");
p5 = scatter(data[!,:chlorides], data[!,:quality], title = "chlorides VS quality");
```

```

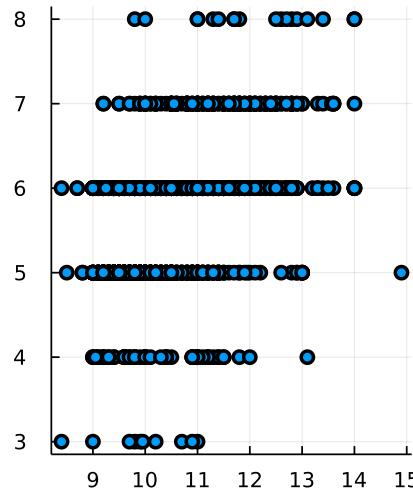
p6 = scatter(data[!,:fixed_acidity], data[!,:quality], title = "fixed_acidity VS quality");
p7 = scatter(data[!,:volatile_acidity], data[!,:quality], title = "volatile_acidity VS quality");
p8 = scatter(data[!,:citric_acid], data[!,:quality], title = "citric_acid VS quality");
p9 = scatter(data[!,:free_sulfur_dioxide], data[!,:quality], title = "free_sulfur_dioxide VS quality");
p10 = scatter(data[!,:total_sulfur_dioxide], data[!,:quality], title = "total_sulfur_dioxide VS quality");
p11 = scatter(data[!,:residual_sugar], data[!,:quality], title = "residual_sugar VS quality");

Plots.plot(p1, p2, p3, p4, p5, p6, p7, p8, p9, p10, p11, layout = 11, legend = false)
plot!(size=(1000, 1000))

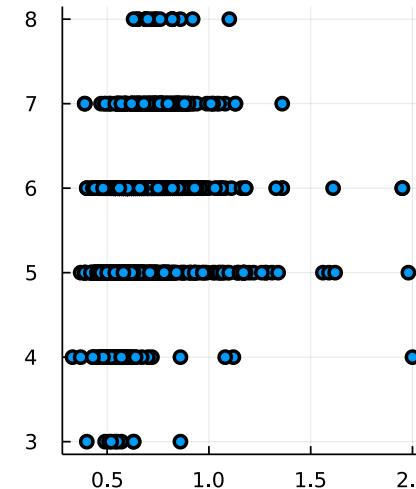
```

Out[10]:

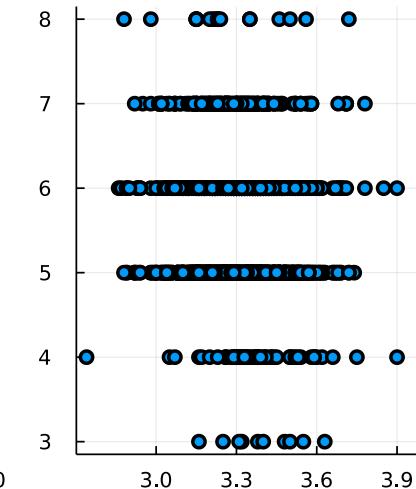
alcohol VS quality



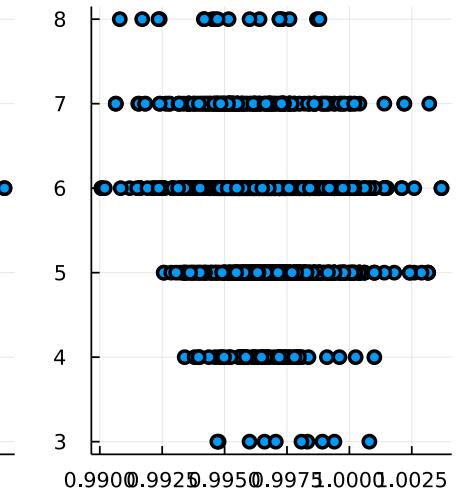
sulphates VS quality



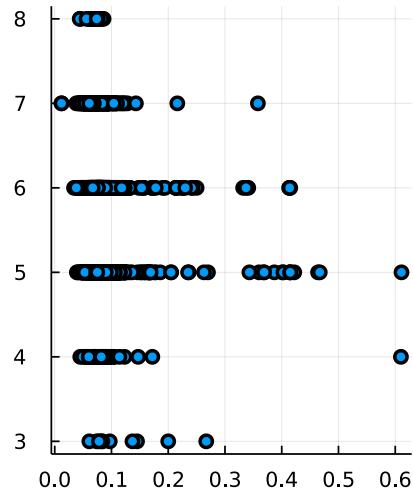
pH VS quality



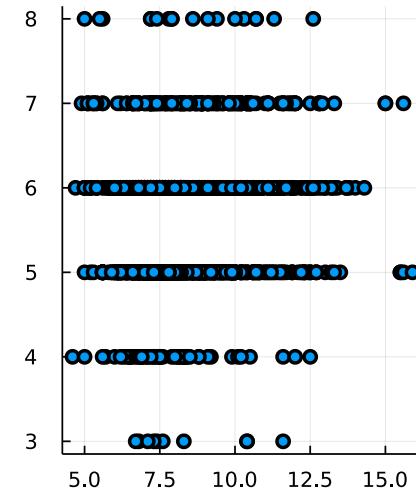
density VS quality



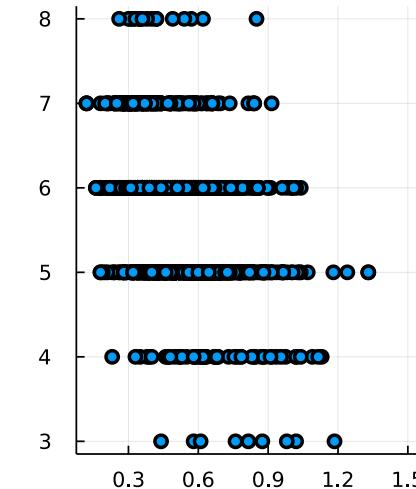
chlorides VS quality



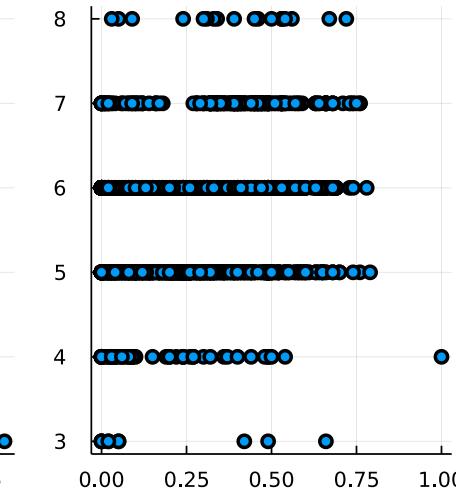
fixed\_acidity VS quality



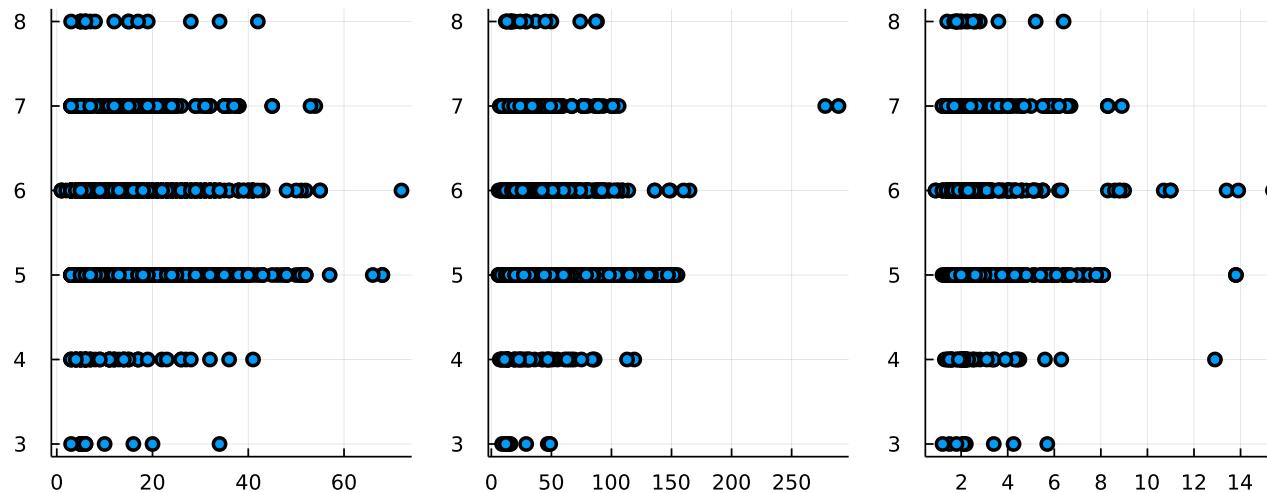
volatile\_acidity VS quality



citric\_acid VS quality



### ee\_sulfur\_dioxide VS quality sulfur\_dioxide VS quality residual\_sugar VS quality



Most of the predictors variables has comparatively weak association with the response variable (quality). sulphates, citric\_acid & alcohol seems to be more associated with the dependent variable. None of the relation showed the very strong linear relationship

### (c) Simple Linear Regression

```
In [11]: m1 = @formula(quality ~ sulphates)
```

```
Out[11]: FormulaTerm
Response:
    quality(unknown)
Predictors:
    sulphates(unknown)
```

```
In [12]: model1 = lm(m1, data)
```

```
Out[12]: StatsModels.TableRegressionModel{LinearModel{GLM.LmResp{Vector{Float64}}, GLM.DensePredChol{Float64, LinearAlgebra.CholeskyPivoted{Float64, Matrix{Float64}}}}, Matrix{Float64}}
```

$$\text{quality} \sim 1 + \text{sulphates}$$

Coefficients:

	Coef.	Std. Error	t	Pr(> t )	Lower 95%	Upper 95%
(Intercept)	4.84775	0.0784197	61.82	<1e-99	4.69393	5.00157
sulphates	1.19771	0.115389	10.38	<1e-23	0.971383	1.42404

The variable is significant, the t-Statistics value is greater than 2 & p value is also so small. So we can reject the H0 (Hypothesis) & say beta value is not zero(0). Thus there might be a association with Sulphate variable with quality.

## (d) Multiple Linear Regression

```
In [13]: m2 = @formula(quality ~ fixed_acidity + volatile_acidity + citric_acid + free_sulfur_dioxide + total_sulfur_dioxide + residual_sugar +
```

```
Out[13]: FormulaTerm
Response:
    quality(unknown)
Predictors:
    fixed_acidity(unknown)
    volatile_acidity(unknown)
    citric_acid(unknown)
    free_sulfur_dioxide(unknown)
    total_sulfur_dioxide(unknown)
    residual_sugar(unknown)
    chlorides(unknown)
    density(unknown)
    pH(unknown)
    sulphates(unknown)
    alcohol(unknown)
```

```
In [14]: model2 = lm(m2, data)
```

```
Out[14]: StatsModels.TableRegressionModel{LinearModel{GLM.LmResp{Vector{Float64}}, GLM.DensePredChol{Float64, LinearAlgebra.CholeskyPivoted{Float64, Matrix{Float64}}}}, Matrix{Float64}}
```

```
quality ~ 1 + fixed_acidity + volatile_acidity + citric_acid + free_sulfur_dioxide + total_sulfur_dioxide + residual_sugar + chlorides + density + pH + sulphates + alcohol
```

Coefficients:

## Midterm\_WineQuality

	Coef.	Std. Error	t	Pr(> t )	Lower 95%	Upper 95%
(Intercept)	21.9652	21.1946	1.04	0.3002	-19.6071	63.5375
fixed_acidity	0.0249906	0.0259485	0.96	0.3357	-0.0259064	0.0758875
volatile_acidity	-1.08359	0.121101	-8.95	<1e-18	-1.32113	-0.846055
citric_acid	-0.182564	0.147176	-1.24	0.2150	-0.471244	0.106116
free_sulfur_dioxide	0.00436133	0.00217129	2.01	0.0447	0.000102431	0.00862024
total_sulfur_dioxide	-0.00326458	0.000728729	-4.48	<1e-05	-0.00469395	-0.00183521
residual_sugar	0.0163313	0.0150021	1.09	0.2765	-0.0130947	0.0457573
chlorides	-1.87423	0.419283	-4.47	<1e-05	-2.69663	-1.05182
density	-17.8812	21.6331	-0.83	0.4086	-60.3136	24.5513
pH	-0.413653	0.191597	-2.16	0.0310	-0.789464	-0.0378426
sulphates	0.916334	0.114337	8.01	<1e-14	0.692066	1.1406
alcohol	0.276198	0.0264836	10.43	<1e-23	0.224251	0.328144

In [15]:

```
regtable(model2)
```

	quality
(1)	
(Intercept)	21.965 (21.195)
fixed_acidity	0.025 (0.026)
volatile_acidity	-1.084*** (0.121)
citric_acid	-0.183 (0.147)
free_sulfur_dioxide	0.004* (0.002)
total_sulfur_dioxide	-0.003*** (0.001)
residual_sugar	0.016 (0.015)
chlorides	-1.874*** (0.419)
density	-17.881 (21.633)
pH	-0.414* (0.192)
sulphates	0.916***

	(0.114)
alcohol	0.276***
	(0.026)
<hr/>	
Estimator	OLS
<hr/>	
N	1,599
R2	0.361
<hr/>	

## Regression Assumptions

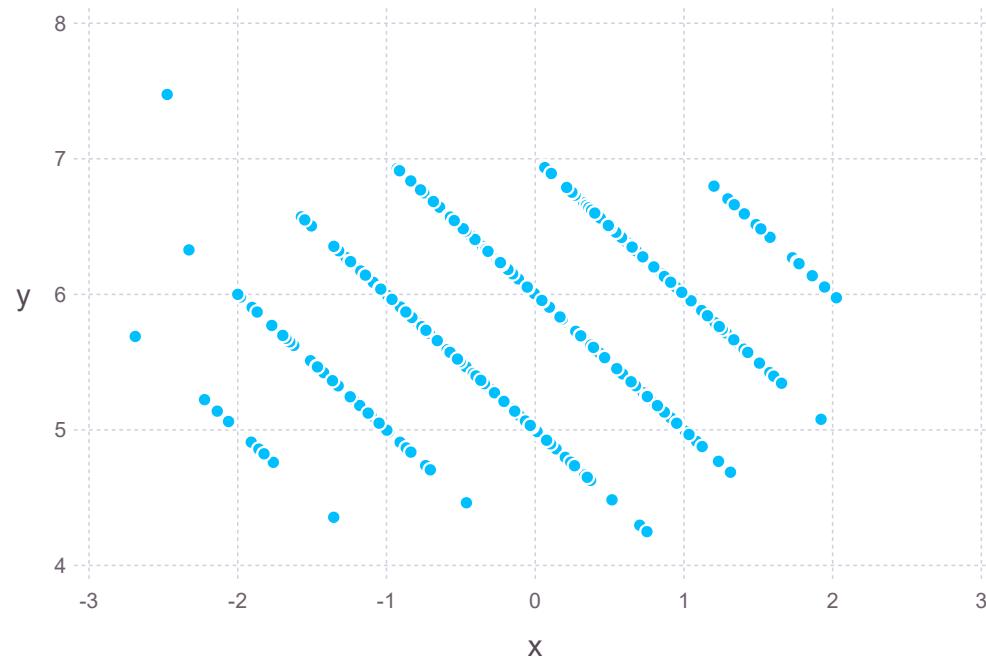
In [16]:

```
# predicted values
pred1 = predict(model2)
# residuals
red1 = data[!, :quality] - pred1;
```

In [17]:

```
# homoscedasticity Assumption
Gadfly.plot(x=red1,y=pred1, Geom.point)
```

Out[17]:

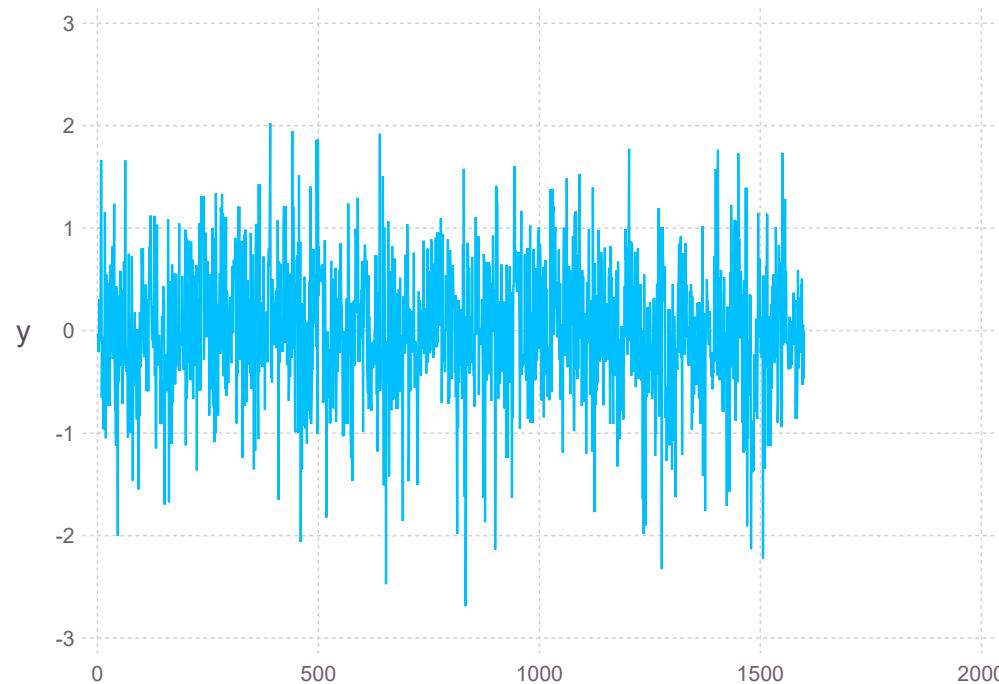


Here the variance is not same in different X value, so homoscedasticity assumption is not totally OK

In [18]:

```
# Independence Assumption  
Gadfly.plot(y=red1, Geom.line)
```

Out[18]:

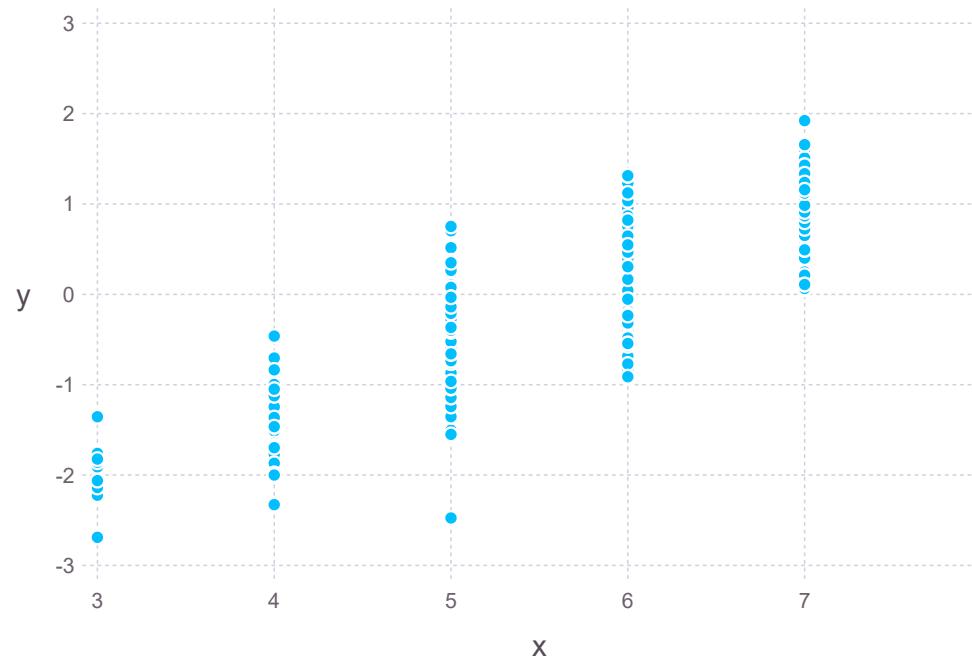


All the observations look random, So the independent assumption hold

In [19]:

```
# Exogeneity assumption  
Gadfly.plot(x = data[!, :quality], y=red1)
```

Out[19]:



We observed some pattern over the plot, so the Epsilon captured some information . It might violate the assumption mildly.

## Coefficient Significance

In [53]: `coef(model1)`

Out[53]:  
2-element Vector{Float64}:  
4.847749534389229  
1.197712323031245

In [54]: `stderror(model1)`

Out[54]:  
2-element Vector{Float64}:  
0.0784196995981123  
0.11538866788152756

In [55]:

```
vcov(model1)
```

```
Out[55]: 2x2 Matrix{Float64}:
 0.00614965 -0.00876295
 -0.00876295  0.0133145
```

The potential remedy for fixing the regression would be adding or filtering the predictors. Doing different types of transformation and iteratively observe the result. If it is not improved a lot, the Box-Cox transformation would be applied and checking the Coefficient Significance. For assure the predictive ability of the developed method, the R2 (R-square) value would be checked.

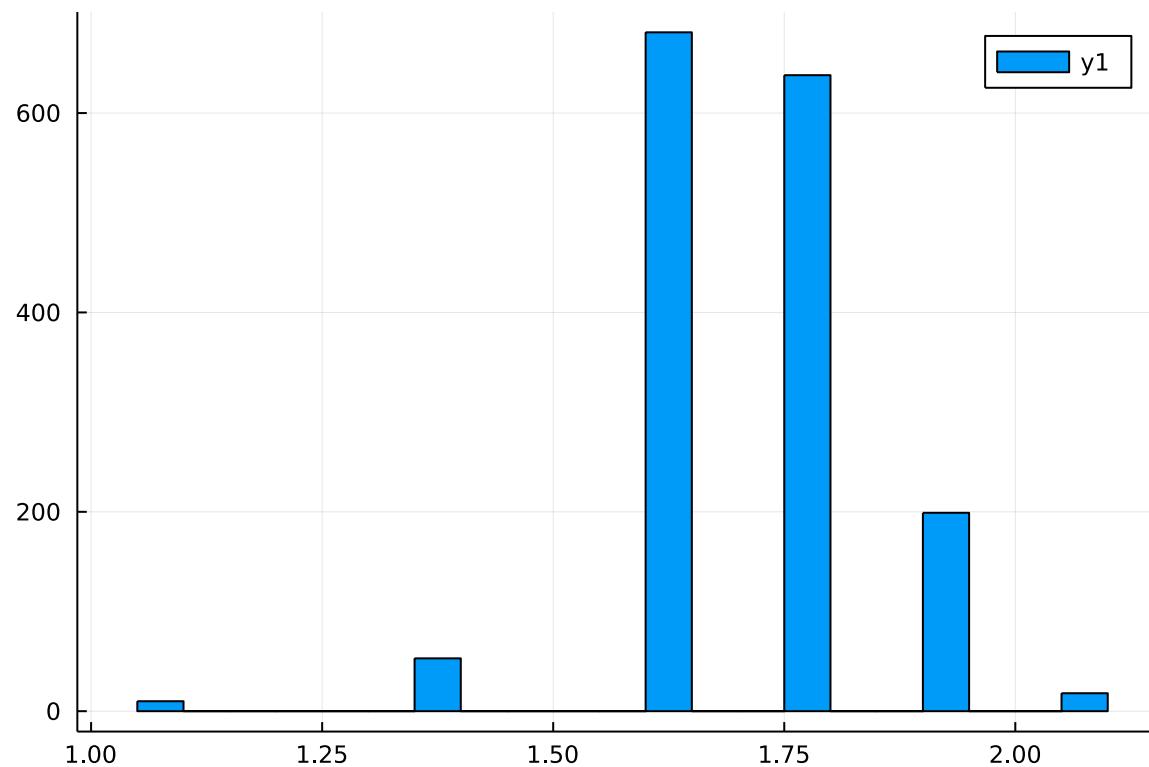
### (e) Box-Cox Transformation

```
In [20]: BoxCoxTrans.lambda(data.quality)
```

```
Out[20]: (value = 0.6199201096914126, details = Results of Optimization Algorithm
 * Algorithm: Brent's Method
 * Search Interval: [-2.000000, 2.000000]
 * Minimizer: 6.199201e-01
 * Minimum: 1.298245e+03
 * Iterations: 9
 * Convergence: max(|x - x_upper|, |x - x_lower|) <= 2*(1.5e-08*|x|+2.2e-16): true
 * Objective Function Calls: 10)
```

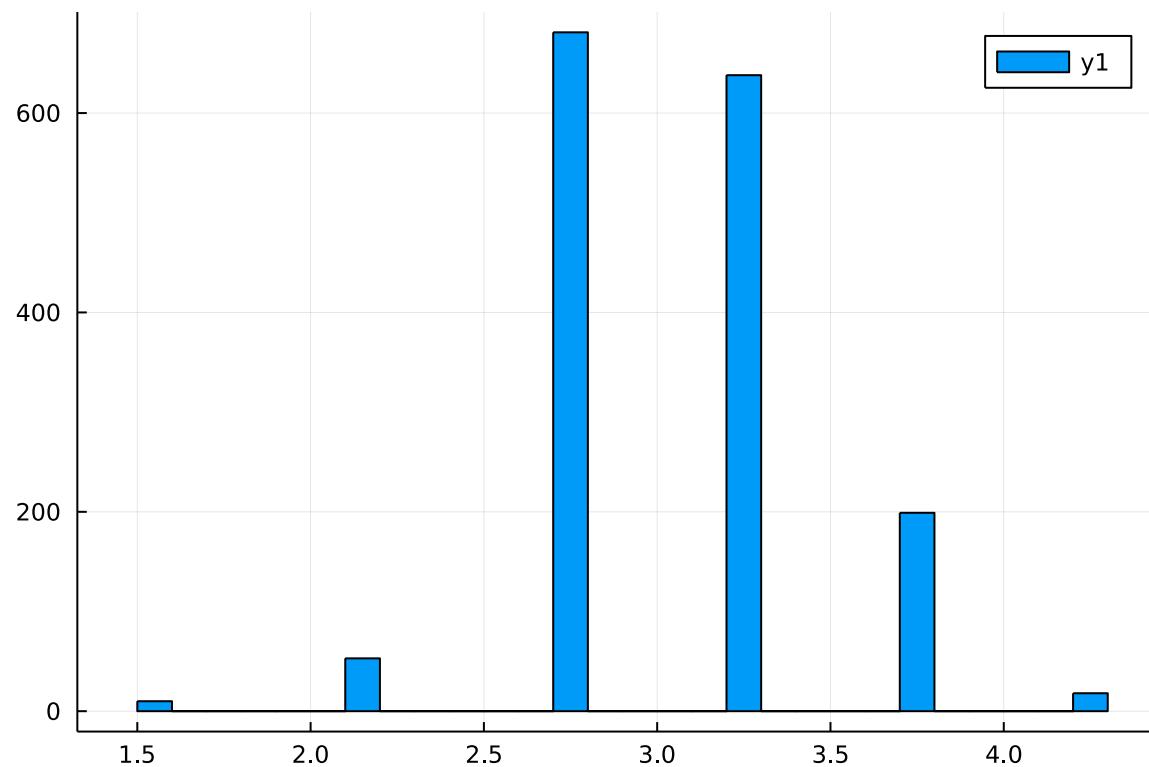
```
In [52]: # for Lambda=0
histogram(BoxCoxTrans.transform(data.quality, 0.0))
```

```
Out[52]:
```



In [21]: `histogram(BoxCoxTrans.transform(data.quality))`

Out[21]:



## optimal transformation

In [22]:

```
# optimal transformed  
BoxCoxTrans.lambda(data.quality).value
```

Out[22]:

```
0.6199201096914126
```

In [23]:

```
dt = copy(data)  
data[!, :bquality] = BoxCoxTrans.transform(data.quality);
```

In [24]:

```
m_bx = lm(bquality ~ fixed_acidity + volatile_acidity + citric_acid + free_sulfur_dioxide + total_sulfur_dioxide + residual_sugars + density + pH + sulphates + alcohol)
```

Out[24]:

```
FormulaTerm  
Response:  
bquality(unknown)
```

Predictors:

```
fixed_acidity(unknown)
volatile_acidity(unknown)
citric_acid(unknown)
free_sulfur_dioxide(unknown)
total_sulfur_dioxide(unknown)
residual_sugar(unknown)
chlorides(unknown)
density(unknown)
pH(unknown)
sulphates(unknown)
alcohol(unknown)
```

In [25]:

```
model_bx = lm(m_bx, data)
```

Out[25]:

```
StatsModels.TableRegressionModel{LinearModel{GLM.LmResp{Vector{Float64}}, GLM.DensePredChol{Float64, LinearAlgebra.CholeskyPivoted{Float64, Matrix{Float64}}}}, Matrix{Float64}}
```

```
bquality ~ 1 + fixed_acidity + volatile_acidity + citric_acid + free_sulfur_dioxide + total_sulfur_dioxide + residual_sugar + chlorides + density + pH + sulphates + alcohol
```

Coefficients:

	Coef.	Std. Error	t	Pr(> t )	Lower 95%	Upper 95%
(Intercept)	9.10412	11.0486	0.82	0.4101	-12.5672	30.7754
fixed_acidity	0.010735	0.0135267	0.79	0.4275	-0.0157972	0.0372672
volatile_acidity	-0.582253	0.0631291	-9.22	<1e-19	-0.706078	-0.458427
citric_acid	-0.107001	0.0767218	-1.39	0.1633	-0.257488	0.0434858
free_sulfur_dioxide	0.00231261	0.00113188	2.04	0.0412	9.24775e-5	0.00453274
total_sulfur_dioxide	-0.00164441	0.00037988	-4.33	<1e-04	-0.00238953	-0.000899295
residual_sugar	0.00689159	0.00782047	0.88	0.3783	-0.00844795	0.0222311
chlorides	-0.97004	0.218569	-4.44	<1e-05	-1.39875	-0.541326
density	-6.72217	11.2772	-0.60	0.5512	-28.8419	15.3975
pH	-0.229391	0.0998782	-2.30	0.0218	-0.425298	-0.033484
sulphates	0.466821	0.0596032	7.83	<1e-14	0.349912	0.58373
alcohol	0.142954	0.0138057	10.35	<1e-23	0.115875	0.170033

In [26]:

```
regtable(model2, model_bx)
```

quality	bquality
---------	----------

	(1)	(2)
(Intercept)	21.965 (21.195)	9.104 (11.049)
fixed_acidity	0.025 (0.026)	0.011 (0.014)
volatile_acidity	-1.084*** (0.121)	-0.582*** (0.063)
citric_acid	-0.183 (0.147)	-0.107 (0.077)
free_sulfur_dioxide	0.004* (0.002)	0.002* (0.001)
total_sulfur_dioxide	-0.003*** (0.001)	-0.002*** (0.000)
residual_sugar	0.016 (0.015)	0.007 (0.008)
chlorides	-1.874*** (0.419)	-0.970*** (0.219)
density	-17.881 (21.633)	-6.722 (11.277)
pH	-0.414* (0.192)	-0.229* (0.100)
sulphates	0.916*** (0.114)	0.467*** (0.060)
alcohol	0.276*** (0.026)	0.143*** (0.014)
Estimator	OLS	OLS
N	1,599	1,599
R2	0.361	0.355

The R2 value is not better from the previous model

In [27]:

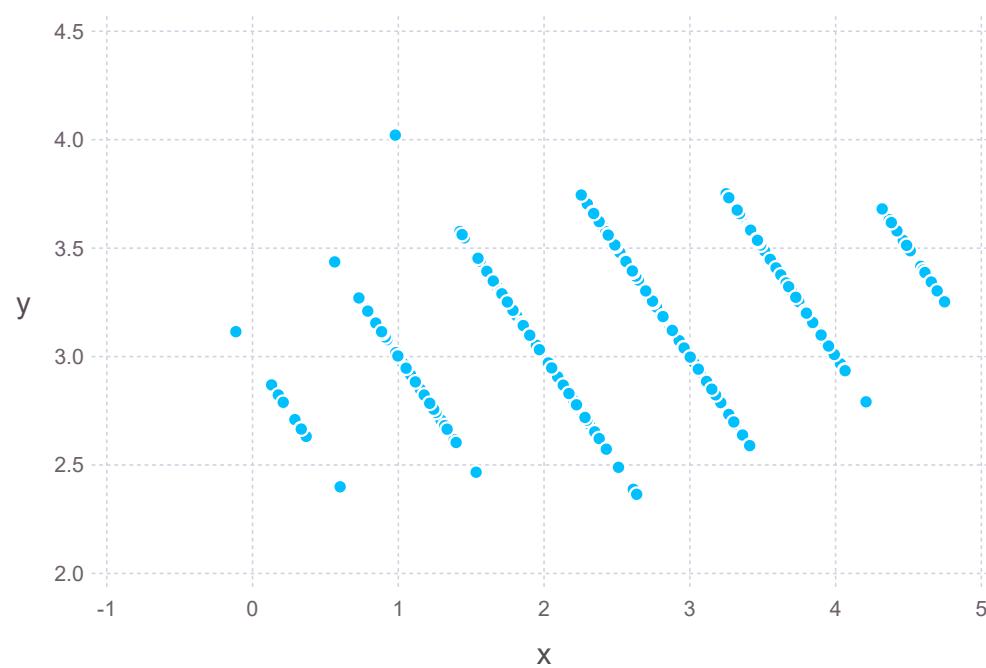
```
# predicted values
pred2 = predict(model_bx)
# residuals
red2 = data[!, :quality] - pred2;
```

In [28]:

```
# homoscedasticity Assumption
```

```
Gadfly.plot(x=red2,y=pred2, Geom.point)
```

Out[28]:

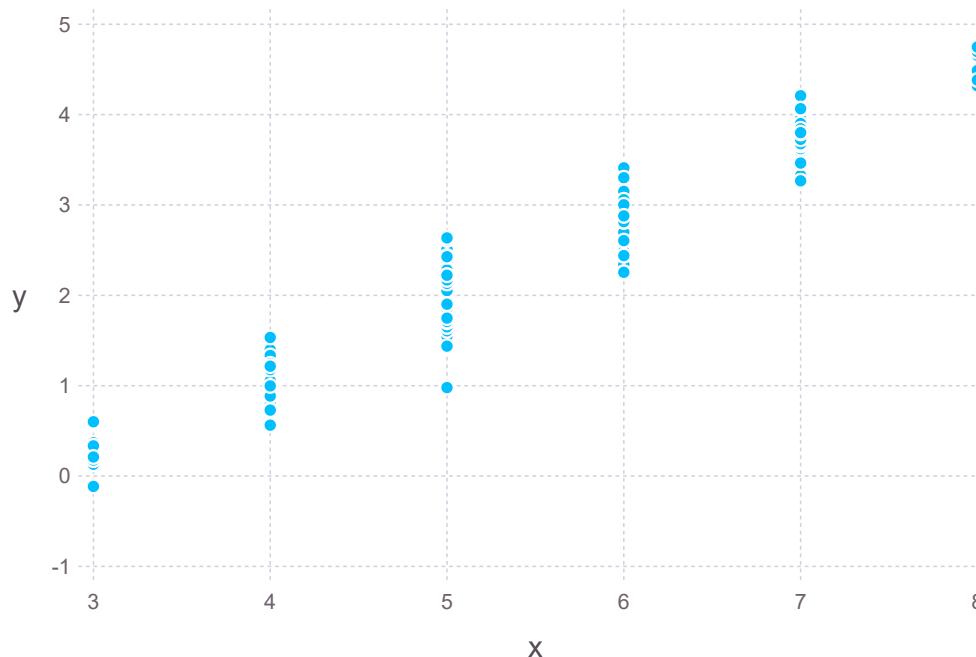


There is some improvement in homoscedasticity after performing Box-Cox Transformation, but not totally solved

In [29]:

```
# Exogeneity assumption  
Gadfly.plot(x = data[!, :quality], y=red2)
```

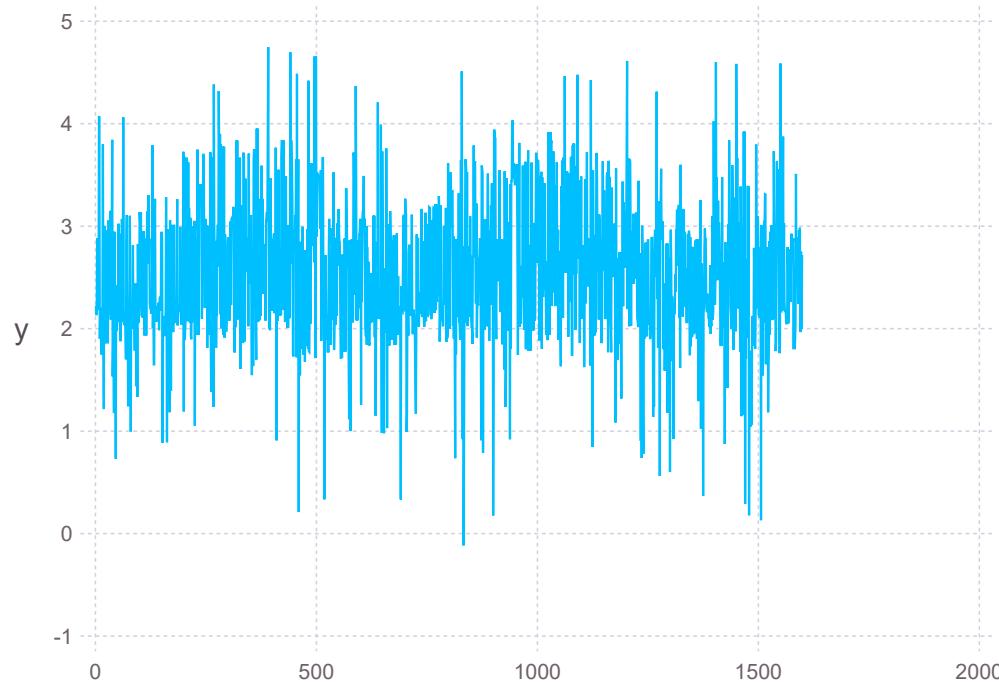
Out[29]:



In [30]:

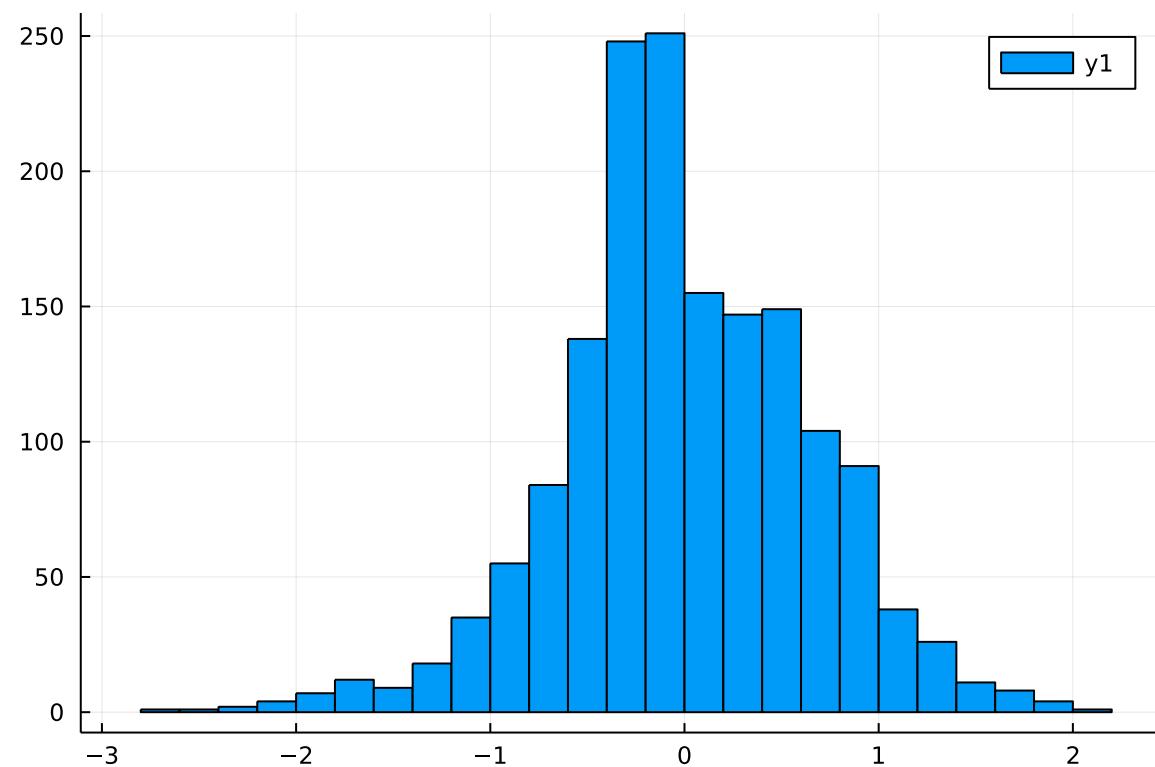
```
# Independence Assumption  
Gadfly.plot(y=red2, Geom.line)
```

Out[30]:



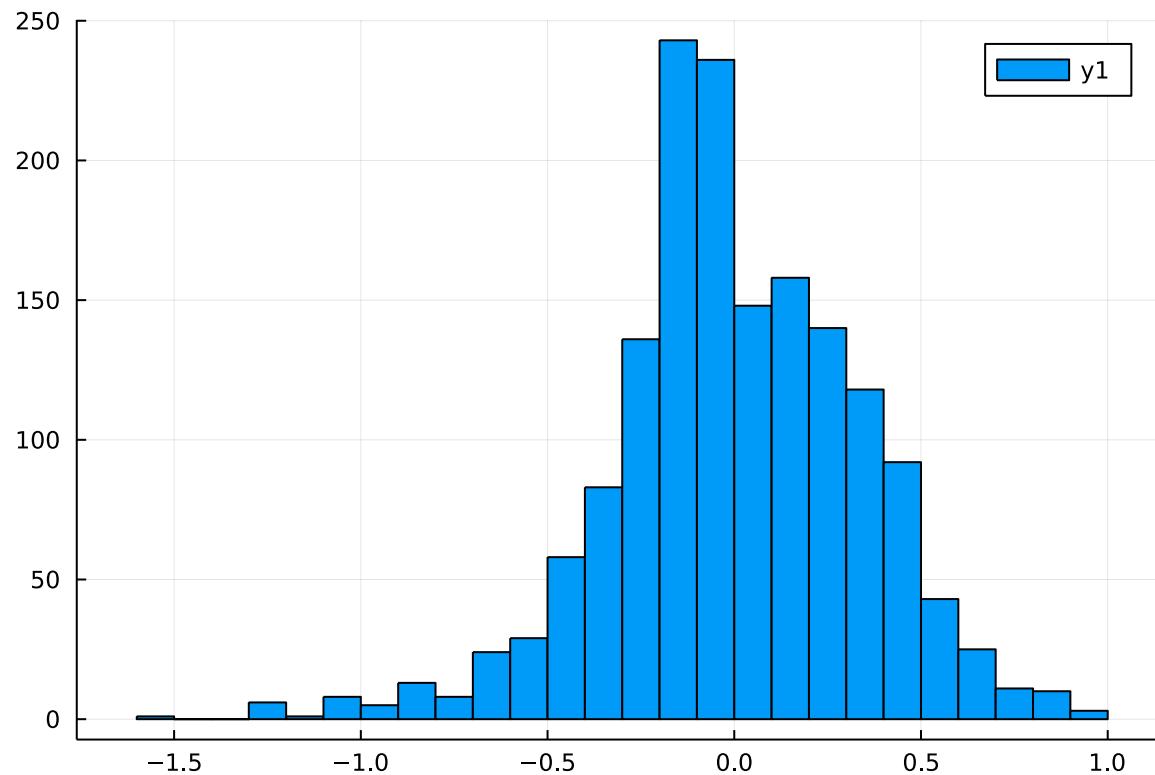
In [31]: `histogram(residuals(model2))`

Out[31]:



In [32]: `histogram(residuals(model_bx))`

Out[32]:



## (f) Alternating Conditional Expectation (ACE)

In [33]:

```
using RCall
@rput dt
R"str(dt)"
```

```
'data.frame': 1599 obs. of 12 variables:
 $ fixed_acidity      : num  7.4 7.8 7.8 11.2 7.4 7.4 7.9 7.3 7.8 7.5 ...
 $ volatile_acidity   : num  0.7 0.88 0.76 0.28 0.7 0.66 0.6 0.65 0.58 0.5 ...
 $ citric_acid        : num  0 0 0.04 0.56 0 0 0.06 0 0.02 0.36 ...
 $ residual_sugar     : num  1.9 2.6 2.3 1.9 1.9 1.8 1.6 1.2 2 6.1 ...
 $ chlorides          : num  0.076 0.098 0.092 0.075 0.076 0.075 0.075 0.069 0.065 0.073 0.071 ...
 $ free_sulfur_dioxide: num  11 25 15 17 11 13 15 15 9 17 ...
 $ total_sulfur_dioxide: num  34 67 54 60 34 40 59 21 18 102 ...
 $ density            : num  0.998 0.997 0.997 0.998 0.998 ...
 $ pH                 : num  3.51 3.2 3.26 3.16 3.51 3.51 3.3 3.39 3.36 3.35 ...
 $ sulphates          : num  0.56 0.68 0.65 0.58 0.56 0.56 0.46 0.47 0.57 0.8 ...
```

```
$ alcohol           : num 9.4 9.8 9.8 9.8 9.4 9.4 9.4 10 9.5 10.5 ...
$ quality          : int 5 5 5 6 5 5 5 7 7 5 ...
Out[33]: RObject{NilSxp}
NULL
```

```
In [34]: R"library(acepack)"
```

```
Out[34]: RObject{StrSxp}
[1] "acepack"      "stats"       "graphics"    "grDevices"   "utils"       "datasets"
[7] "methods"      "base"
```

```
In [35]: R"x <- dt"
R"y <- unlist(dt[, 12])"
R"amod <- ace(x,y)"
```

```
Out[35]: RObject{VecSxp}
$p
[1] 12

$n
[1] 1599

$x
      1     2     3     4     5     6     7
fixed_acidity 7.4000 7.8000 7.800 11.200 7.4000 7.4000 7.9000
volatile_acidity 0.7000 0.8800 0.760 0.280 0.7000 0.6600 0.6000
citric_acid 0.0000 0.0000 0.040 0.560 0.0000 0.0000 0.0600
residual_sugar 1.9000 2.6000 2.300 1.900 1.9000 1.8000 1.6000
chlorides 0.0760 0.0980 0.092 0.075 0.0760 0.0750 0.0690
free_sulfur_dioxide 11.0000 25.0000 15.000 17.000 11.0000 13.0000 15.0000
total_sulfur_dioxide 34.0000 67.0000 54.000 60.000 34.0000 40.0000 59.0000
density 0.9978 0.9968 0.997 0.998 0.9978 0.9978 0.9964
pH 3.5100 3.2000 3.260 3.160 3.5100 3.5100 3.3000
sulphates 0.5600 0.6800 0.650 0.580 0.5600 0.5600 0.4600
alcohol 9.4000 9.8000 9.800 9.800 9.4000 9.4000 9.4000
quality 5.0000 5.0000 5.000 6.000 5.0000 5.0000 5.0000
      8     9     10    11    12    13    14
fixed_acidity 7.3000 7.8000 7.5000 6.7000 7.5000 5.6000 7.8000
volatile_acidity 0.6500 0.5800 0.5000 0.5800 0.5000 0.6150 0.6100
citric_acid 0.0000 0.0200 0.3600 0.0800 0.3600 0.0000 0.2900
residual_sugar 1.2000 2.0000 6.1000 1.8000 6.1000 1.6000 1.6000
chlorides 0.0650 0.0730 0.0710 0.0970 0.0710 0.0890 0.1140
free_sulfur_dioxide 15.0000 9.0000 17.0000 15.0000 17.0000 16.0000 9.0000
total_sulfur_dioxide 21.0000 18.0000 102.0000 65.0000 102.0000 59.0000 29.0000
```

density	0.9946	0.9968	0.9978	0.9959	0.9978	0.9943	0.9974
pH	3.3900	3.3600	3.3500	3.2800	3.3500	3.5800	3.2600
sulphates	0.4700	0.5700	0.8000	0.5400	0.8000	0.5200	1.5600
alcohol	10.0000	9.5000	10.5000	9.2000	10.5000	9.9000	9.1000
quality	7.0000	7.0000	5.0000	5.0000	5.0000	5.0000	5.0000
	15	16	17	18	19	20	21
fixed_acidity	8.9000	8.9000	8.5000	8.1000	7.4000	7.9000	8.9000
volatile_acidity	0.6200	0.6200	0.2800	0.5600	0.5900	0.3200	0.2200
citric_acid	0.1800	0.1900	0.5600	0.2800	0.0800	0.5100	0.4800
residual_sugar	3.8000	3.9000	1.8000	1.7000	4.4000	1.8000	1.8000
chlorides	0.1760	0.1700	0.0920	0.3680	0.0860	0.3410	0.0770
free_sulfur_dioxide	52.0000	51.0000	35.0000	16.0000	6.0000	17.0000	29.0000
total_sulfur_dioxide	145.0000	148.0000	103.0000	56.0000	29.0000	56.0000	60.0000
density	0.9986	0.9986	0.9969	0.9968	0.9974	0.9969	0.9968
pH	3.1600	3.1700	3.3000	3.1100	3.3800	3.0400	3.3900
sulphates	0.8800	0.9300	0.7500	1.2800	0.5000	1.0800	0.5300
alcohol	9.2000	9.2000	10.5000	9.3000	9.0000	9.2000	9.4000
quality	5.0000	5.0000	7.0000	5.0000	4.0000	6.0000	6.0000
	22	23	24	25	26	27	28
fixed_acidity	7.6000	7.9000	8.5000	6.9000	6.3000	7.6000	7.9000
volatile_acidity	0.3900	0.4300	0.4900	0.4000	0.3900	0.4100	0.4300
citric_acid	0.3100	0.2100	0.1100	0.1400	0.1600	0.2400	0.2100
residual_sugar	2.3000	1.6000	2.3000	2.4000	1.4000	1.8000	1.6000
chlorides	0.0820	0.1060	0.0840	0.0850	0.0800	0.0800	0.1060
free_sulfur_dioxide	23.0000	10.0000	9.0000	21.0000	11.0000	4.0000	10.0000
total_sulfur_dioxide	71.0000	37.0000	67.0000	40.0000	23.0000	11.0000	37.0000
density	0.9982	0.9966	0.9968	0.9968	0.9955	0.9962	0.9966
pH	3.5200	3.1700	3.1700	3.4300	3.3400	3.2800	3.1700
sulphates	0.6500	0.9100	0.5300	0.6300	0.5600	0.5900	0.9100
alcohol	9.7000	9.5000	9.4000	9.7000	9.3000	9.5000	9.5000
quality	5.0000	5.0000	5.0000	6.0000	5.0000	5.0000	5.0000
	29	30	31	32	33	34	35
fixed_acidity	7.1000	7.8000	6.7000	6.9000	8.3000	6.9000	5.2000
volatile_acidity	0.7100	0.6450	0.6750	0.6850	0.6550	0.6050	0.3200
citric_acid	0.0000	0.0000	0.0700	0.0000	0.1200	0.1200	0.2500
residual_sugar	1.9000	2.0000	2.4000	2.5000	2.3000	10.7000	1.8000
chlorides	0.0800	0.0820	0.0890	0.1050	0.0830	0.0730	0.1030
free_sulfur_dioxide	14.0000	8.0000	17.0000	22.0000	15.0000	40.0000	13.0000
total_sulfur_dioxide	35.0000	16.0000	82.0000	37.0000	113.0000	83.0000	50.0000
density	0.9972	0.9964	0.9958	0.9966	0.9966	0.9993	0.9957
pH	3.4700	3.3800	3.3500	3.4600	3.1700	3.4500	3.3800
sulphates	0.5500	0.5900	0.5400	0.5700	0.6600	0.5200	0.5500
alcohol	9.4000	9.8000	10.1000	10.6000	9.8000	9.4000	9.2000
quality	5.0000	6.0000	5.0000	6.0000	5.0000	6.0000	5.0000
	36	37	38	39	40	41	42

fixed_acidity	7.8000	7.8000	8.1000	5.700	7.3000	7.3000	8.8000
volatile_acidity	0.6450	0.6000	0.3800	1.130	0.4500	0.4500	0.6100
citric_acid	0.0000	0.1400	0.2800	0.090	0.3600	0.3600	0.3000
residual_sugar	5.5000	2.4000	2.1000	1.500	5.9000	5.9000	2.8000
chlorides	0.0860	0.0860	0.0660	0.172	0.0740	0.0740	0.0880
free_sulfur_dioxide	5.0000	3.0000	13.0000	7.000	12.0000	12.0000	17.0000
total_sulfur_dioxide	18.0000	15.0000	30.0000	19.000	87.0000	87.0000	46.0000
density	0.9986	0.9975	0.9968	0.994	0.9978	0.9978	0.9976
pH	3.4000	3.4200	3.2300	3.500	3.3300	3.3300	3.2600
sulphates	0.5500	0.6000	0.7300	0.480	0.8300	0.8300	0.5100
alcohol	9.6000	10.8000	9.7000	9.800	10.5000	10.5000	9.3000
quality	6.0000	6.0000	7.0000	4.000	5.0000	5.0000	4.0000
	43	44	45	46	47	48	49
fixed_acidity	7.5000	8.1000	6.8000	4.6000	7.700	8.7000	6.4000
volatile_acidity	0.4900	0.6600	0.6700	0.5200	0.935	0.2900	0.4000
citric_acid	0.2000	0.2200	0.0200	0.1500	0.430	0.5200	0.2300
residual_sugar	2.6000	2.2000	1.8000	2.1000	2.200	1.6000	1.6000
chlorides	0.3320	0.0690	0.0500	0.0540	0.114	0.1130	0.0660
free_sulfur_dioxide	8.0000	9.0000	5.0000	8.0000	22.000	12.0000	5.0000
total_sulfur_dioxide	14.0000	23.0000	11.0000	65.0000	114.000	37.0000	12.0000
density	0.9968	0.9968	0.9962	0.9934	0.997	0.9969	0.9958
pH	3.2100	3.3000	3.4800	3.9000	3.250	3.2500	3.3400
sulphates	0.9000	1.2000	0.5200	0.5600	0.730	0.5800	0.5600
alcohol	10.5000	10.3000	9.5000	13.1000	9.200	9.5000	9.2000
quality	6.0000	5.0000	5.0000	4.0000	5.000	5.0000	5.0000
	50	51	52	53	54	55	56
fixed_acidity	5.6000	8.8000	6.6000	6.6000	8.600	7.6000	7.7000
volatile_acidity	0.3100	0.6600	0.5200	0.5000	0.380	0.5100	0.6200
citric_acid	0.3700	0.2600	0.0400	0.0400	0.360	0.1500	0.0400
residual_sugar	1.4000	1.7000	2.2000	2.1000	3.000	2.8000	3.8000
chlorides	0.0740	0.0740	0.0690	0.0680	0.081	0.1100	0.0840
free_sulfur_dioxide	12.0000	4.0000	8.0000	6.0000	30.000	33.0000	25.0000
total_sulfur_dioxide	96.0000	23.0000	15.0000	14.0000	119.000	73.0000	45.0000
density	0.9954	0.9971	0.9956	0.9955	0.997	0.9955	0.9978
pH	3.3200	3.1500	3.4000	3.3900	3.200	3.1700	3.3400
sulphates	0.5800	0.7400	0.6300	0.6400	0.560	0.6300	0.5300
alcohol	9.2000	9.2000	9.4000	9.4000	9.400	10.2000	9.5000
quality	5.0000	5.0000	6.0000	6.0000	5.000	6.0000	5.0000
	57	58	59	60	61	62	63
fixed_acidity	10.2000	7.5000	7.8000	7.3000	8.800	7.7000	7.5000
volatile_acidity	0.4200	0.6300	0.5900	0.3900	0.400	0.6900	0.5200
citric_acid	0.5700	0.1200	0.1800	0.3100	0.400	0.4900	0.1600
residual_sugar	3.4000	5.1000	2.3000	2.4000	2.200	1.8000	1.9000
chlorides	0.0700	0.1110	0.0760	0.0740	0.079	0.1150	0.0850
free_sulfur_dioxide	4.0000	50.0000	17.0000	9.0000	19.000	20.0000	12.0000

total_sulfur_dioxide	10.0000	110.0000	54.0000	46.0000	52.000	112.0000	35.0000
density	0.9971	0.9983	0.9975	0.9962	0.998	0.9968	0.9968
pH	3.0400	3.2600	3.4300	3.4100	3.440	3.2100	3.3800
sulphates	0.6300	0.7700	0.5900	0.5400	0.640	0.7100	0.6200
alcohol	9.6000	9.4000	10.0000	9.4000	9.200	9.3000	9.5000
quality	5.0000	5.0000	5.0000	6.0000	5.000	5.0000	7.0000
	64	65	66	67	68	69	70
fixed_acidity	7.0000	7.2000	7.2000	7.5000	6.6000	9.3000	8.0000
volatile_acidity	0.7350	0.7250	0.7250	0.5200	0.7050	0.3200	0.7050
citric_acid	0.0500	0.0500	0.0500	0.1100	0.0700	0.5700	0.0500
residual_sugar	2.0000	4.6500	4.6500	1.5000	1.6000	2.0000	1.9000
chlorides	0.0810	0.0860	0.0860	0.0790	0.0760	0.0740	0.0740
free_sulfur_dioxide	13.0000	4.0000	4.0000	11.0000	6.0000	27.0000	8.0000
total_sulfur_dioxide	54.0000	11.0000	11.0000	39.0000	15.0000	65.0000	19.0000
density	0.9966	0.9962	0.9962	0.9968	0.9962	0.9969	0.9962
pH	3.3900	3.4100	3.4100	3.4200	3.4400	3.2800	3.3400
sulphates	0.5700	0.3900	0.3900	0.5800	0.5800	0.7900	0.9500
alcohol	9.8000	10.9000	10.9000	9.6000	10.7000	10.7000	10.5000
quality	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	6.0000
	71	72	73	74	75	76	77
fixed_acidity	7.7000	7.7000	7.7000	8.3000	9.7000	8.8000	8.8000
volatile_acidity	0.6300	0.6700	0.6900	0.6750	0.3200	0.4100	0.4100
citric_acid	0.0800	0.2300	0.2200	0.2600	0.5400	0.6400	0.6400
residual_sugar	1.9000	2.1000	1.9000	2.1000	2.5000	2.2000	2.2000
chlorides	0.0760	0.0880	0.0840	0.0840	0.0940	0.0930	0.0930
free_sulfur_dioxide	15.0000	17.0000	18.0000	11.0000	28.0000	9.0000	9.0000
total_sulfur_dioxide	27.0000	96.0000	94.0000	43.0000	83.0000	42.0000	42.0000
density	0.9967	0.9962	0.9961	0.9976	0.9984	0.9986	0.9986
pH	3.3200	3.3200	3.3100	3.3100	3.2800	3.5400	3.5400
sulphates	0.5400	0.4800	0.4800	0.5300	0.8200	0.6600	0.6600
alcohol	9.5000	9.5000	9.5000	9.2000	9.6000	10.5000	10.5000
quality	6.0000	5.0000	5.0000	4.0000	5.0000	5.0000	5.0000
	78	79	80	81	82	83	84
fixed_acidity	6.8000	6.7000	8.3000	6.2000	7.8000	7.400	7.3000
volatile_acidity	0.7850	0.7500	0.6250	0.4500	0.4300	0.500	0.6700
citric_acid	0.0000	0.1200	0.2000	0.2000	0.7000	0.470	0.2600
residual_sugar	2.4000	2.0000	1.5000	1.6000	1.9000	2.000	1.8000
chlorides	0.1040	0.0860	0.0800	0.0690	0.4640	0.086	0.4010
free_sulfur_dioxide	14.0000	12.0000	27.0000	3.0000	22.0000	21.000	16.0000
total_sulfur_dioxide	30.0000	80.0000	119.0000	15.0000	67.0000	73.000	51.0000
density	0.9966	0.9958	0.9972	0.9958	0.9974	0.997	0.9969
pH	3.5200	3.3800	3.1600	3.4100	3.1300	3.360	3.1600
sulphates	0.5500	0.5200	1.1200	0.5600	1.2800	0.570	1.1400
alcohol	10.7000	10.1000	9.1000	9.2000	9.4000	9.100	9.4000
quality	6.0000	5.0000	4.0000	5.0000	5.0000	5.000	5.0000

## Midterm\_WineQuality

	85	86	87	88	89	90	91
fixed_acidity	6.3000	6.9000	8.6000	7.7000	9.3000	7.0000	7.9000
volatile_acidity	0.3000	0.5500	0.4900	0.4900	0.3900	0.6200	0.5200
citric_acid	0.4800	0.1500	0.2800	0.2600	0.4400	0.0800	0.2600
residual_sugar	1.8000	2.2000	1.9000	1.9000	2.1000	1.8000	1.9000
chlorides	0.0690	0.0760	0.1100	0.0620	0.1070	0.0760	0.0790
free_sulfur_dioxide	18.0000	19.0000	20.0000	9.0000	34.0000	8.0000	42.0000
total_sulfur_dioxide	61.0000	40.0000	136.0000	31.0000	125.0000	24.0000	140.0000
density	0.9959	0.9961	0.9972	0.9966	0.9978	0.9978	0.9964
pH	3.4400	3.4100	2.9300	3.3900	3.1400	3.4800	3.2300
sulphates	0.7800	0.5900	1.9500	0.6400	1.2200	0.5300	0.5400
alcohol	10.3000	10.1000	9.9000	9.6000	9.5000	9.0000	9.5000
quality	6.0000	5.0000	6.0000	5.0000	5.0000	5.0000	5.0000
	92	93	94	95	96	97	98
fixed_acidity	8.6000	8.6000	7.7000	5.0000	4.7000	6.8000	7.0000
volatile_acidity	0.4900	0.4900	0.4900	1.0200	0.6000	0.7750	0.5000
citric_acid	0.2800	0.2900	0.2600	0.0400	0.1700	0.0000	0.2500
residual_sugar	1.9000	2.0000	1.9000	1.4000	2.3000	3.0000	2.0000
chlorides	0.1100	0.1100	0.0620	0.0450	0.0580	0.1020	0.0700
free_sulfur_dioxide	20.0000	19.0000	9.0000	41.0000	17.0000	8.0000	3.0000
total_sulfur_dioxide	136.0000	133.0000	31.0000	85.0000	106.0000	23.0000	22.0000
density	0.9972	0.9972	0.9966	0.9938	0.9932	0.9965	0.9963
pH	2.9300	2.9300	3.3900	3.7500	3.8500	3.4500	3.2500
sulphates	1.9500	1.9800	0.6400	0.4800	0.6000	0.5600	0.6300
alcohol	9.9000	9.8000	9.6000	10.5000	12.9000	10.7000	9.2000
quality	6.0000	5.0000	5.0000	4.0000	6.0000	5.0000	5.0000
	99	100	101	102	103	104	105
fixed_acidity	7.6000	8.1000	8.3000	7.8000	8.1000	8.1000	7.200
volatile_acidity	0.9000	0.5450	0.6100	0.5000	0.5450	0.5750	0.490
citric_acid	0.0600	0.1800	0.3000	0.3000	0.1800	0.2200	0.240
residual_sugar	2.5000	1.9000	2.1000	1.9000	1.9000	2.1000	2.200
chlorides	0.0790	0.0800	0.0840	0.0750	0.0800	0.0770	0.070
free_sulfur_dioxide	5.0000	13.0000	11.0000	8.0000	13.0000	12.0000	5.000
total_sulfur_dioxide	10.0000	35.0000	50.0000	22.0000	35.0000	65.0000	36.000
density	0.9967	0.9972	0.9972	0.9959	0.9972	0.9967	0.996
pH	3.3900	3.3000	3.4000	3.3100	3.3000	3.2900	3.330
sulphates	0.5600	0.5900	0.6100	0.5600	0.5900	0.5100	0.480
alcohol	9.8000	9.0000	10.2000	10.4000	9.0000	9.2000	9.400
quality	5.0000	6.0000	6.0000	6.0000	6.0000	5.0000	5.000
	106	107	108	109	110	111	112
fixed_acidity	8.1000	7.8000	6.2000	8.0000	8.1000	7.8000	8.4000
volatile_acidity	0.5750	0.4100	0.6300	0.3300	0.7850	0.5600	0.6200
citric_acid	0.2200	0.6800	0.3100	0.5300	0.5200	0.1900	0.0900
residual_sugar	2.1000	1.7000	1.7000	2.5000	2.0000	1.8000	2.2000
chlorides	0.0770	0.4670	0.0880	0.0910	0.1220	0.1040	0.0840

free_sulfur_dioxide	12.0000	18.0000	15.0000	18.0000	37.0000	12.0000	11.0000
total_sulfur_dioxide	65.0000	69.0000	64.0000	80.0000	153.0000	47.0000	108.0000
density	0.9967	0.9973	0.9969	0.9976	0.9969	0.9964	0.9964
pH	3.2900	3.0800	3.4600	3.3700	3.2100	3.1900	3.1500
sulphates	0.5100	1.3100	0.7900	0.8000	0.6900	0.9300	0.6600
alcohol	9.2000	9.3000	9.3000	9.6000	9.3000	9.5000	9.8000
quality	5.0000	5.0000	5.0000	6.0000	5.0000	5.0000	5.0000
	113	114	115	116	117	118	119
fixed_acidity	8.4000	10.1000	7.8000	9.4000	8.3000	7.800	8.8000
volatile_acidity	0.6000	0.3100	0.5600	0.4000	0.5400	0.560	0.5500
citric_acid	0.1000	0.4400	0.1900	0.3100	0.2800	0.120	0.0400
residual_sugar	2.2000	2.3000	1.8000	2.2000	1.9000	2.000	2.2000
chlorides	0.0850	0.0800	0.1040	0.0900	0.0770	0.082	0.1190
free_sulfur_dioxide	14.0000	22.0000	12.0000	13.0000	11.0000	7.000	14.0000
total_sulfur_dioxide	111.0000	46.0000	47.0000	62.0000	40.0000	28.000	56.0000
density	0.9964	0.9988	0.9964	0.9966	0.9978	0.997	0.9962
pH	3.1500	3.3200	3.1900	3.0700	3.3900	3.370	3.2100
sulphates	0.6600	0.6700	0.9300	0.6300	0.6100	0.500	0.6000
alcohol	9.8000	9.7000	9.5000	10.5000	10.0000	9.400	10.9000
quality	5.0000	6.0000	5.0000	6.0000	6.0000	6.000	6.0000
	120	121	122	123	124	125	126
fixed_acidity	7.0000	7.3000	8.8000	7.300	8.0000	7.800	9.0000
volatile_acidity	0.6900	1.0700	0.5500	0.695	0.7100	0.500	0.6200
citric_acid	0.0800	0.0900	0.0400	0.000	0.0000	0.170	0.0400
residual_sugar	1.8000	1.7000	2.2000	2.500	2.6000	1.600	1.9000
chlorides	0.0970	0.1780	0.1190	0.075	0.0800	0.082	0.1460
free_sulfur_dioxide	22.0000	10.0000	14.0000	3.000	11.0000	21.000	27.0000
total_sulfur_dioxide	89.0000	89.0000	56.0000	13.000	34.0000	102.000	90.0000
density	0.9959	0.9962	0.9962	0.998	0.9976	0.996	0.9984
pH	3.3400	3.3000	3.2100	3.490	3.4400	3.390	3.1600
sulphates	0.5400	0.5700	0.6000	0.520	0.5300	0.480	0.7000
alcohol	9.2000	9.0000	10.9000	9.200	9.5000	9.500	9.4000
quality	6.0000	5.0000	6.0000	5.000	5.0000	5.000	5.0000
	127	128	129	130	131	132	133
fixed_acidity	8.2000	8.1000	8.0000	6.1000	8.0000	5.6000	5.6000
volatile_acidity	1.3300	1.3300	0.5900	0.3800	0.7450	0.5000	0.5000
citric_acid	0.0000	0.0000	0.1600	0.1500	0.5600	0.0900	0.0900
residual_sugar	1.7000	1.8000	1.8000	1.8000	2.0000	2.3000	2.3000
chlorides	0.0810	0.0820	0.0650	0.0720	0.1180	0.0490	0.0490
free_sulfur_dioxide	3.0000	3.0000	3.0000	6.0000	30.0000	17.0000	17.0000
total_sulfur_dioxide	12.0000	12.0000	16.0000	19.0000	134.0000	99.0000	99.0000
density	0.9964	0.9964	0.9962	0.9955	0.9968	0.9937	0.9937
pH	3.5300	3.5400	3.4200	3.4200	3.2400	3.6300	3.6300
sulphates	0.4900	0.4800	0.9200	0.5700	0.6600	0.6300	0.6300
alcohol	10.9000	10.9000	10.5000	9.4000	9.4000	13.0000	13.0000

quality	5.0000	5.0000	7.0000	5.0000	5.0000	5.0000	5.0000
	134	135	136	137	138	139	140
fixed_acidity	6.6000	7.9000	8.4000	8.3000	7.2000	7.8000	7.8000
volatile_acidity	0.5000	1.0400	0.7450	0.7150	0.4150	0.5600	0.5600
citric_acid	0.0100	0.0500	0.1100	0.1500	0.3600	0.1900	0.1900
residual_sugar	1.5000	2.2000	1.9000	1.8000	2.0000	2.1000	2.0000
chlorides	0.0600	0.0840	0.0900	0.0890	0.0810	0.0810	0.0810
free_sulfur_dioxide	17.0000	13.0000	16.0000	10.0000	13.0000	15.0000	17.0000
total_sulfur_dioxide	26.0000	29.0000	63.0000	52.0000	45.0000	105.0000	108.0000
density	0.9952	0.9959	0.9965	0.9968	0.9972	0.9962	0.9962
pH	3.4000	3.2200	3.1900	3.2300	3.4800	3.3300	3.3200
sulphates	0.5800	0.5500	0.8200	0.7700	0.6400	0.5400	0.5400
alcohol	9.8000	9.9000	9.6000	9.5000	9.2000	9.5000	9.5000
quality	6.0000	6.0000	5.0000	5.0000	5.0000	5.0000	5.0000
	141	142	143	144	145	146	147
fixed_acidity	8.4000	8.3000	5.2000	6.3000	5.2000	8.1000	5.8000
volatile_acidity	0.7450	0.7150	0.3400	0.3900	0.3400	0.6700	0.6800
citric_acid	0.1100	0.1500	0.0000	0.0800	0.0000	0.5500	0.0200
residual_sugar	1.9000	1.8000	1.8000	1.7000	1.8000	1.8000	1.8000
chlorides	0.0900	0.0890	0.0500	0.0660	0.0500	0.1170	0.0870
free_sulfur_dioxide	16.0000	10.0000	27.0000	3.0000	27.0000	32.0000	21.0000
total_sulfur_dioxide	63.0000	52.0000	63.0000	20.0000	63.0000	141.0000	94.0000
density	0.9965	0.9968	0.9916	0.9954	0.9916	0.9968	0.9944
pH	3.1900	3.2300	3.6800	3.3400	3.6800	3.1700	3.5400
sulphates	0.8200	0.7700	0.7900	0.5800	0.7900	0.6200	0.5200
alcohol	9.6000	9.5000	14.0000	9.4000	14.0000	9.4000	10.0000
quality	5.0000	5.0000	6.0000	5.0000	6.0000	5.0000	5.0000
	148	149	150	151	152	153	154
fixed_acidity	7.6000	6.9000	8.2000	7.3000	9.2000	7.500	7.500
volatile_acidity	0.4900	0.4900	0.4000	0.3300	0.5200	0.600	0.600
citric_acid	0.2600	0.1000	0.4400	0.4700	1.0000	0.030	0.030
residual_sugar	1.6000	2.3000	2.8000	2.1000	3.4000	1.800	1.800
chlorides	0.2360	0.0740	0.0890	0.0770	0.6100	0.095	0.095
free_sulfur_dioxide	10.0000	12.0000	11.0000	5.0000	32.0000	25.000	25.000
total_sulfur_dioxide	88.0000	30.0000	43.0000	11.0000	69.0000	99.000	99.000
density	0.9968	0.9959	0.9975	0.9958	0.9996	0.995	0.995
pH	3.1100	3.4200	3.5300	3.3300	2.7400	3.350	3.350
sulphates	0.8000	0.5800	0.6100	0.5300	2.0000	0.540	0.540
alcohol	9.3000	10.2000	10.5000	10.3000	9.4000	10.100	10.100
quality	5.0000	6.0000	6.0000	6.0000	4.0000	5.000	5.000
	155	156	157	158	159	160	
fixed_acidity	7.1000	7.1000	7.1000	7.1000	7.1000	6.8000	
volatile_acidity	0.4300	0.4300	0.4300	0.4300	0.6800	0.6000	
citric_acid	0.4200	0.4200	0.4200	0.4200	0.0000	0.1800	
residual_sugar	5.5000	5.5000	5.5000	5.5000	2.2000	1.9000	

chlorides	0.0700	0.0710	0.0700	0.0710	0.0730	0.0790	
free_sulfur_dioxide	29.0000	28.0000	29.0000	28.0000	12.0000	18.0000	
total_sulfur_dioxide	129.0000	128.0000	129.0000	128.0000	22.0000	86.0000	
density	0.9973	0.9973	0.9973	0.9973	0.9969	0.9968	
pH	3.4200	3.4200	3.4200	3.4200	3.4800	3.5900	
sulphates	0.7200	0.7100	0.7200	0.7100	0.5000	0.5700	
alcohol	10.5000	10.5000	10.5000	10.5000	9.3000	9.3000	
quality	5.0000	5.0000	5.0000	5.0000	5.0000	6.0000	
	161	162	163	164	165	166	167
fixed_acidity	7.6000	7.6000	7.8000	7.4000	7.3000	7.8000	6.8000
volatile_acidity	0.9500	0.6800	0.5300	0.6000	0.5900	0.6300	0.6400
citric_acid	0.0300	0.0200	0.0400	0.2600	0.2600	0.4800	0.1000
residual_sugar	2.0000	1.3000	1.7000	7.3000	7.2000	1.7000	2.1000
chlorides	0.0900	0.0720	0.0760	0.0700	0.0700	0.1000	0.0850
free_sulfur_dioxide	7.0000	9.0000	17.0000	36.0000	35.0000	14.0000	18.0000
total_sulfur_dioxide	20.0000	20.0000	31.0000	121.0000	121.0000	96.0000	101.0000
density	0.9959	0.9965	0.9964	0.9982	0.9981	0.9961	0.9956
pH	3.2000	3.1700	3.3300	3.3700	3.3700	3.1900	3.3400
sulphates	0.5600	1.0800	0.5600	0.4900	0.4900	0.6200	0.5200
alcohol	9.6000	9.2000	10.0000	9.4000	9.4000	9.5000	10.2000
quality	5.0000	4.0000	6.0000	5.0000	5.0000	5.0000	5.0000
	168	169	170	171	172	173	174
fixed_acidity	7.3000	6.8000	7.5000	7.9000	8.0000	8.0000	7.4000
volatile_acidity	0.5500	0.6300	0.7050	0.8850	0.4200	0.4200	0.6200
citric_acid	0.0300	0.0700	0.2400	0.0300	0.1700	0.1700	0.0500
residual_sugar	1.6000	2.1000	1.8000	1.8000	2.0000	2.0000	1.9000
chlorides	0.0720	0.0890	0.3600	0.0580	0.0730	0.0730	0.0680
free_sulfur_dioxide	17.0000	11.0000	15.0000	4.0000	6.0000	6.0000	24.0000
total_sulfur_dioxide	42.0000	44.0000	63.0000	8.0000	18.0000	18.0000	42.0000
density	0.9956	0.9953	0.9964	0.9972	0.9972	0.9972	0.9961
pH	3.3700	3.4700	3.0000	3.3600	3.2900	3.2900	3.4200
sulphates	0.4800	0.5500	1.5900	0.3300	0.6100	0.6100	0.5700
alcohol	9.0000	10.4000	9.5000	9.1000	9.2000	9.2000	11.5000
quality	4.0000	6.0000	5.0000	4.0000	6.0000	6.0000	6.0000
	175	176	177	178	179	180	181
fixed_acidity	7.3000	6.9000	7.3000	7.5000	7.0000	8.8000	8.8000
volatile_acidity	0.3800	0.5000	0.3800	0.5200	0.8050	0.6100	0.6100
citric_acid	0.2100	0.0400	0.2100	0.4200	0.0000	0.1400	0.1400
residual_sugar	2.0000	1.5000	2.0000	2.3000	2.5000	2.4000	2.4000
chlorides	0.0800	0.0850	0.0800	0.0870	0.0680	0.0670	0.0670
free_sulfur_dioxide	7.0000	19.0000	7.0000	8.0000	7.0000	10.0000	10.0000
total_sulfur_dioxide	35.0000	49.0000	35.0000	38.0000	20.0000	42.0000	42.0000
density	0.9961	0.9958	0.9961	0.9972	0.9969	0.9969	0.9969
pH	3.3300	3.3500	3.3300	3.5800	3.4800	3.1900	3.1900
sulphates	0.4700	0.7800	0.4700	0.6100	0.5600	0.5900	0.5900

alcohol	9.5000	9.5000	9.5000	10.5000	9.6000	9.5000	9.5000
quality	5.0000	5.0000	5.0000	6.0000	5.0000	5.0000	5.0000
	182	183	184	185	186	187	188
fixed_acidity	8.9000	7.2000	6.8000	6.700	8.9000	7.4000	7.7000
volatile_acidity	0.6100	0.7300	0.6100	0.620	0.3100	0.3900	0.7050
citric_acid	0.4900	0.0200	0.2000	0.210	0.5700	0.4800	0.1000
residual_sugar	2.0000	2.5000	1.8000	1.900	2.0000	2.0000	2.6000
chlorides	0.2700	0.0760	0.0770	0.079	0.1110	0.0820	0.0840
free_sulfur_dioxide	23.0000	16.0000	11.0000	8.000	26.0000	14.0000	9.0000
total_sulfur_dioxide	110.0000	42.0000	65.0000	62.000	85.0000	67.0000	26.0000
density	0.9972	0.9972	0.9971	0.997	0.9971	0.9972	0.9976
pH	3.1200	3.4400	3.5400	3.520	3.2600	3.3400	3.3900
sulphates	1.0200	0.5200	0.5800	0.580	0.5300	0.5500	0.4900
alcohol	9.3000	9.3000	9.3000	9.300	9.7000	9.2000	9.7000
quality	5.0000	5.0000	5.0000	6.000	5.0000	5.0000	5.0000
	189	190	191	192	193	194	
fixed_acidity	7.9000	7.9000	8.2000	6.4000	6.8000	7.6000	
volatile_acidity	0.5000	0.4900	0.5000	0.3700	0.6300	0.5500	
citric_acid	0.3300	0.3200	0.3500	0.2500	0.1200	0.2100	
residual_sugar	2.0000	1.9000	2.9000	1.9000	3.8000	2.2000	
chlorides	0.0840	0.0820	0.0770	0.0740	0.0990	0.0710	
free_sulfur_dioxide	15.0000	17.0000	21.0000	21.0000	16.0000	7.0000	
total_sulfur_dioxide	143.0000	144.0000	127.0000	49.0000	126.0000	28.0000	
density	0.9968	0.9968	0.9976	0.9974	0.9969	0.9964	
pH	3.2000	3.2000	3.2300	3.5700	3.2800	3.2800	
sulphates	0.5500	0.5500	0.6200	0.6200	0.6100	0.5500	
alcohol	9.5000	9.5000	9.4000	9.8000	9.5000	9.7000	
quality	5.0000	5.0000	5.0000	6.0000	5.0000	5.0000	
	195	196	197	198	199	200	201
fixed_acidity	7.6000	7.8000	7.3000	11.5000	5.4000	6.9000	9.60000
volatile_acidity	0.5500	0.5900	0.5800	0.3000	0.8350	1.0900	0.32000
citric_acid	0.2100	0.3300	0.3000	0.6000	0.0800	0.0600	0.47000
residual_sugar	2.2000	2.0000	2.4000	2.0000	1.2000	2.1000	1.40000
chlorides	0.0710	0.0740	0.0740	0.0670	0.0460	0.0610	0.05600
free_sulfur_dioxide	7.0000	24.0000	15.0000	12.0000	13.0000	12.0000	9.00000
total_sulfur_dioxide	28.0000	120.0000	55.0000	27.0000	93.0000	31.0000	24.00000
density	0.9964	0.9968	0.9968	0.9981	0.9924	0.9948	0.99695
pH	3.2800	3.2500	3.4600	3.1100	3.5700	3.5100	3.22000
sulphates	0.5500	0.5400	0.5900	0.9700	0.8500	0.4300	0.82000
alcohol	9.7000	9.4000	10.2000	10.1000	13.0000	11.4000	10.30000
quality	5.0000	5.0000	5.0000	6.0000	7.0000	4.0000	7.00000
	202	203	204	205	206	207	
fixed_acidity	8.8000	6.80000	7.0000	7.00000	12.8000	12.8000	
volatile_acidity	0.3700	0.50000	0.4200	0.43000	0.3000	0.3000	
citric_acid	0.4800	0.11000	0.3500	0.36000	0.7400	0.7400	

residual_sugar	2.1000	1.50000	1.6000	1.60000	2.6000	2.6000
chlorides	0.0970	0.07500	0.0880	0.08900	0.0950	0.0950
free_sulfur_dioxide	39.0000	16.00000	16.0000	14.00000	9.0000	9.0000
total_sulfur_dioxide	145.0000	49.00000	39.0000	37.00000	28.0000	28.0000
density	0.9975	0.99545	0.9961	0.99615	0.9994	0.9994
pH	3.0400	3.36000	3.3400	3.34000	3.2000	3.2000
sulphates	1.0300	0.79000	0.5500	0.56000	0.7700	0.7700
alcohol	9.3000	9.50000	9.2000	9.20000	10.8000	10.8000
quality	5.0000	5.00000	5.0000	6.00000	7.0000	7.0000
	208	209	210	211	212	213
fixed_acidity	7.80000	7.8000	11.000	9.70000	8.00000	11.600
volatile_acidity	0.57000	0.4400	0.300	0.53000	0.72500	0.440
citric_acid	0.31000	0.2800	0.580	0.60000	0.24000	0.640
residual_sugar	1.80000	2.7000	2.100	2.00000	2.80000	2.100
chlorides	0.06900	0.1000	0.054	0.03900	0.08300	0.059
free_sulfur_dioxide	26.00000	18.0000	7.000	5.00000	10.00000	5.000
total_sulfur_dioxide	120.00000	95.0000	19.000	19.00000	62.00000	15.000
density	0.99625	0.9966	0.998	0.99585	0.99685	0.998
pH	3.29000	3.2200	3.310	3.30000	3.35000	3.210
sulphates	0.53000	0.6700	0.880	0.86000	0.56000	0.670
alcohol	9.30000	9.4000	10.500	12.40000	10.00000	10.200
quality	5.00000	5.0000	7.000	6.00000	6.00000	6.000
	215	216	217	218	219	220
fixed_acidity	7.8000	7.0000	8.7000	8.1000	7.5000	7.80000
volatile_acidity	0.7350	0.4900	0.6250	0.7250	0.4900	0.53000
citric_acid	0.0800	0.4900	0.1600	0.2200	0.1900	0.33000
residual_sugar	2.4000	5.6000	2.0000	2.2000	1.9000	2.40000
chlorides	0.0920	0.0600	0.1010	0.0720	0.0760	0.08000
free_sulfur_dioxide	10.0000	26.0000	13.0000	11.0000	10.0000	24.00000
total_sulfur_dioxide	41.0000	121.0000	49.0000	41.0000	44.0000	144.00000
density	0.9974	0.9974	0.9962	0.9967	0.9957	0.99655
pH	3.2400	3.3400	3.1400	3.3600	3.3900	3.30000
sulphates	0.7100	0.7600	0.5700	0.5500	0.5400	0.60000
alcohol	9.8000	10.5000	11.0000	9.1000	9.7000	9.50000
quality	6.0000	5.0000	5.0000	5.0000	5.00000	6.0000
	222	223	224	225	226	227
fixed_acidity	7.4000	6.80000	8.60000	8.40000	7.70000	8.90000
volatile_acidity	0.5300	0.61000	0.64500	0.63500	0.43000	0.5900
citric_acid	0.2600	0.04000	0.25000	0.36000	0.25000	0.5000
residual_sugar	2.0000	1.50000	2.00000	2.00000	2.60000	2.0000
chlorides	0.1010	0.05700	0.08300	0.08900	0.07300	0.3370
free_sulfur_dioxide	16.0000	5.00000	8.00000	15.00000	29.00000	27.0000
total_sulfur_dioxide	72.0000	10.00000	28.00000	55.00000	63.00000	81.0000
density	0.9957	0.99525	0.99815	0.99745	0.99615	0.9964
pH	3.1500	3.42000	3.28000	3.31000	3.37000	3.0400

sulphates	0.5700	0.60000	0.60000	0.57000	0.58000	1.6100
alcohol	9.4000	9.50000	10.00000	10.40000	10.50000	9.5000
quality	5.0000	5.00000	6.00000	4.00000	6.00000	6.0000
	228	229	230	231	232	233
fixed_acidity	9.0000	7.70000	6.90000	5.2000	8.00000	8.500
volatile_acidity	0.8200	0.43000	0.52000	0.4800	0.38000	0.370
citric_acid	0.1400	0.25000	0.25000	0.0400	0.06000	0.200
residual_sugar	2.6000	2.60000	2.60000	1.6000	1.80000	2.800
chlorides	0.0890	0.07300	0.08100	0.0540	0.07800	0.090
free_sulfur_dioxide	9.0000	29.00000	10.00000	19.0000	12.00000	18.000
total_sulfur_dioxide	23.0000	63.00000	37.00000	106.0000	49.00000	58.000
density	0.9984	0.99615	0.99685	0.9927	0.99625	0.998
pH	3.3900	3.37000	3.46000	3.5400	3.37000	3.340
sulphates	0.6300	0.58000	0.50000	0.6200	0.52000	0.700
alcohol	9.8000	10.50000	11.00000	12.2000	9.90000	9.600
quality	5.0000	6.00000	5.00000	7.0000	6.00000	6.000
	234	235	236	237	238	239
fixed_acidity	6.90000	8.20000	7.20000	7.20000	7.20000	7.20000
volatile_acidity	0.52000	1.00000	0.63000	0.63000	0.64500	0.63000
citric_acid	0.25000	0.09000	0.00000	0.00000	0.00000	0.00000
residual_sugar	2.60000	2.30000	1.90000	1.90000	1.90000	1.90000
chlorides	0.08100	0.06500	0.09700	0.09700	0.09700	0.09700
free_sulfur_dioxide	10.00000	7.00000	14.00000	14.00000	15.00000	14.00000
total_sulfur_dioxide	37.00000	37.00000	38.00000	38.00000	39.00000	38.00000
density	0.99685	0.99685	0.99675	0.99675	0.99675	0.99675
pH	3.46000	3.32000	3.37000	3.37000	3.37000	3.37000
sulphates	0.50000	0.55000	0.58000	0.58000	0.58000	0.58000
alcohol	11.00000	9.00000	9.00000	9.00000	9.20000	9.00000
quality	5.00000	6.00000	6.00000	6.00000	6.00000	6.00000
	240	241	242	243	244	245
fixed_acidity	8.20000	8.9000	12.00000	7.70000	15.00000	15.00000
volatile_acidity	1.00000	0.6350	0.38000	0.58000	0.21000	0.21000
citric_acid	0.09000	0.3700	0.56000	0.10000	0.44000	0.44000
residual_sugar	2.30000	1.7000	2.10000	1.80000	2.20000	2.20000
chlorides	0.06500	0.2630	0.09300	0.10200	0.07500	0.07500
free_sulfur_dioxide	7.00000	5.0000	6.00000	28.00000	10.00000	10.00000
total_sulfur_dioxide	37.00000	62.0000	24.00000	109.00000	24.00000	24.00000
density	0.99685	0.9971	0.99925	0.99565	1.00005	1.00005
pH	3.32000	3.0000	3.14000	3.08000	3.07000	3.07000
sulphates	0.55000	1.0900	0.71000	0.49000	0.84000	0.84000
alcohol	9.00000	9.3000	10.90000	9.80000	9.20000	9.20000
quality	6.00000	5.0000	6.00000	6.00000	7.00000	7.00000
	246	247	248	249	250	251
fixed_acidity	7.3000	7.10000	8.2000	7.70000	7.3000	10.8000
volatile_acidity	0.6600	0.68000	0.6000	0.53000	0.6600	0.3200

citric_acid	0.0000	0.07000	0.1700	0.06000	0.0000	0.4400	0.0000
residual_sugar	2.0000	1.90000	2.3000	1.70000	2.0000	1.6000	1.8000
chlorides	0.0840	0.07500	0.0720	0.07400	0.0840	0.0630	0.0740
free_sulfur_dioxide	6.0000	16.00000	11.0000	9.00000	6.0000	16.0000	16.0000
total_sulfur_dioxide	23.0000	51.00000	73.0000	39.00000	23.0000	37.0000	34.0000
density	0.9983	0.99685	0.9963	0.99615	0.9983	0.9985	0.9972
pH	3.6100	3.38000	3.2000	3.35000	3.6100	3.2200	3.4700
sulphates	0.9600	0.52000	0.4500	0.48000	0.9600	0.7800	0.7000
alcohol	9.9000	9.50000	9.3000	9.80000	9.9000	10.0000	9.9000
quality	6.0000	5.00000	5.0000	6.00000	6.0000	6.0000	6.0000
	253	254	255	256	257	258	259
fixed_acidity	11.1000	7.7000	7.1000	8.00000	9.400	6.6000	7.7000
volatile_acidity	0.3500	0.7750	0.6000	0.57000	0.340	0.6950	0.4100
citric_acid	0.4800	0.4200	0.0000	0.23000	0.370	0.0000	0.7600
residual_sugar	3.1000	1.9000	1.8000	3.20000	2.200	2.1000	1.8000
chlorides	0.0900	0.0920	0.0740	0.07300	0.075	0.0750	0.6110
free_sulfur_dioxide	5.0000	8.0000	16.0000	17.00000	5.000	12.0000	8.0000
total_sulfur_dioxide	21.0000	86.0000	34.0000	119.00000	13.000	56.0000	45.0000
density	0.9986	0.9959	0.9972	0.99675	0.998	0.9968	0.9968
pH	3.1700	3.2300	3.4700	3.26000	3.220	3.4900	3.0600
sulphates	0.5300	0.5900	0.7000	0.57000	0.620	0.6700	1.2600
alcohol	10.5000	9.5000	9.9000	9.30000	9.200	9.2000	9.4000
quality	5.0000	5.0000	6.0000	5.00000	5.000	5.0000	5.0000
	260	261	262	263	264	265	
fixed_acidity	10.00000	7.90000	7.00000	8.00000	7.9000	12.5000	
volatile_acidity	0.31000	0.33000	0.97500	0.52000	0.3700	0.5600	
citric_acid	0.47000	0.23000	0.04000	0.03000	0.2300	0.4900	
residual_sugar	2.60000	1.70000	2.00000	1.70000	1.8000	2.4000	
chlorides	0.08500	0.07700	0.08700	0.07000	0.0770	0.0640	
free_sulfur_dioxide	14.00000	18.00000	12.00000	10.00000	23.0000	5.0000	
total_sulfur_dioxide	33.00000	45.00000	67.00000	35.00000	49.0000	27.0000	
density	0.99965	0.99625	0.99565	0.99575	0.9963	0.9999	
pH	3.36000	3.29000	3.35000	3.34000	3.2800	3.0800	
sulphates	0.80000	0.65000	0.60000	0.57000	0.6700	0.8700	
alcohol	10.50000	9.30000	9.40000	10.00000	9.3000	10.9000	
quality	7.00000	5.00000	4.00000	5.00000	5.0000	5.0000	
	266	267	268	269	270	271	272
fixed_acidity	11.8000	8.10000	7.9000	6.9000	11.5000	7.9000	11.5000
volatile_acidity	0.2600	0.87000	0.3500	0.5400	0.1800	0.5450	0.1800
citric_acid	0.5200	0.00000	0.4600	0.0400	0.5100	0.0600	0.5100
residual_sugar	1.8000	3.30000	3.6000	3.0000	4.0000	4.0000	4.0000
chlorides	0.0710	0.09600	0.0780	0.0770	0.1040	0.0870	0.1040
free_sulfur_dioxide	6.0000	26.00000	15.0000	7.0000	4.0000	27.0000	4.0000
total_sulfur_dioxide	10.0000	61.00000	37.0000	27.0000	23.0000	61.0000	23.0000
density	0.9968	1.00025	0.9973	0.9987	0.9996	0.9965	0.9996

pH	3.2000	3.60000	3.3500	3.6900	3.2800	3.3600	3.2800
sulphates	0.7200	0.72000	0.8600	0.9100	0.9700	0.6700	0.9700
alcohol	10.2000	9.80000	12.8000	9.4000	10.1000	10.7000	10.1000
quality	7.0000	4.00000	8.0000	6.0000	6.0000	6.0000	6.0000
	273	274	275	276	277	278	279
fixed_acidity	10.90000	8.40000	7.50000	7.9000	6.9000	11.5000	10.3000
volatile_acidity	0.37000	0.71500	0.65000	0.5450	0.5400	0.1800	0.3200
citric_acid	0.58000	0.20000	0.18000	0.0600	0.0400	0.5100	0.4500
residual_sugar	4.00000	2.40000	7.00000	4.0000	3.0000	4.0000	6.4000
chlorides	0.07100	0.07600	0.08800	0.0870	0.0770	0.1040	0.0730
free_sulfur_dioxide	17.00000	10.00000	27.00000	27.0000	7.0000	4.0000	5.0000
total_sulfur_dioxide	65.00000	38.00000	94.00000	61.0000	27.0000	23.0000	13.0000
density	0.99935	0.99735	0.99915	0.9965	0.9987	0.9996	0.9976
pH	3.22000	3.31000	3.38000	3.3600	3.6900	3.2800	3.2300
sulphates	0.78000	0.64000	0.77000	0.6700	0.9100	0.9700	0.8200
alcohol	10.10000	9.40000	9.40000	10.7000	9.4000	10.1000	12.6000
quality	5.00000	5.00000	5.00000	6.0000	6.0000	6.0000	8.0000
	280	281	282	283	284	285	286
fixed_acidity	8.9000	11.4000	7.7000	7.6000	8.9000	9.90000	9.90000
volatile_acidity	0.4000	0.2600	0.2700	0.5200	0.4000	0.59000	0.59000
citric_acid	0.3200	0.4400	0.6800	0.1200	0.3200	0.07000	0.07000
residual_sugar	5.6000	3.6000	3.5000	3.0000	5.6000	3.40000	3.40000
chlorides	0.0870	0.0710	0.3580	0.0670	0.0870	0.10200	0.10200
free_sulfur_dioxide	10.0000	6.0000	5.0000	12.0000	10.0000	32.00000	32.00000
total_sulfur_dioxide	47.0000	19.0000	10.0000	53.0000	47.0000	71.00000	71.00000
density	0.9991	0.9986	0.9972	0.9971	0.9991	1.00015	1.00015
pH	3.3800	3.1200	3.2500	3.3600	3.3800	3.31000	3.31000
sulphates	0.7700	0.8200	1.0800	0.5700	0.7700	0.71000	0.71000
alcohol	10.5000	9.3000	9.9000	9.1000	10.5000	9.80000	9.80000
quality	7.0000	6.0000	7.0000	5.0000	7.0000	5.00000	5.00000
	287	288	289	290	291	292	293
fixed_acidity	12.0000	7.5000	8.7000	11.600	8.7000	11.0000	10.4000
volatile_acidity	0.4500	0.4000	0.5200	0.420	0.5200	0.2000	0.5500
citric_acid	0.5500	0.1200	0.0900	0.530	0.0900	0.4800	0.2300
residual_sugar	2.0000	3.0000	2.5000	3.300	2.5000	2.0000	2.7000
chlorides	0.0730	0.0920	0.0910	0.105	0.0910	0.3430	0.0910
free_sulfur_dioxide	25.0000	29.0000	20.0000	33.000	20.0000	6.0000	18.0000
total_sulfur_dioxide	49.0000	53.0000	49.0000	98.000	49.0000	18.0000	48.0000
density	0.9997	0.9967	0.9976	1.001	0.9976	0.9979	0.9994
pH	3.1000	3.3700	3.3400	3.200	3.3400	3.3000	3.2200
sulphates	0.7600	0.7000	0.8600	0.950	0.8600	0.7100	0.6400
alcohol	10.3000	10.3000	10.6000	9.200	10.6000	10.5000	10.3000
quality	6.0000	6.0000	7.0000	5.000	7.0000	5.0000	6.0000
	294	295	296	297	298	299	300
fixed_acidity	6.9000	13.3000	10.8000	10.6000	7.10000	7.2000	6.90000

volatile_acidity	0.3600	0.3400	0.5000	0.8300	0.63000	0.6500	0.67000
citric_acid	0.2500	0.5200	0.4600	0.3700	0.06000	0.0200	0.06000
residual_sugar	2.4000	3.2000	2.5000	2.6000	2.00000	2.3000	2.10000
chlorides	0.0980	0.0940	0.0730	0.0860	0.08300	0.0940	0.08000
free_sulfur_dioxide	5.0000	17.0000	5.0000	26.0000	8.00000	5.0000	8.00000
total_sulfur_dioxide	16.0000	53.0000	27.0000	70.0000	29.00000	31.0000	33.00000
density	0.9964	1.0014	1.0001	0.9981	0.99855	0.9993	0.99845
pH	3.4100	3.0500	3.0500	3.1600	3.67000	3.6700	3.68000
sulphates	0.6000	0.8100	0.6400	0.5200	0.73000	0.8000	0.71000
alcohol	10.1000	9.5000	9.5000	9.9000	9.60000	9.7000	9.60000
quality	6.0000	6.0000	5.0000	5.0000	5.00000	5.0000	5.00000
	301	302	303	304	305	306	307
fixed_acidity	7.5000	11.1000	8.3000	7.400	8.4000	10.3000	7.6000
volatile_acidity	0.5300	0.1800	0.7050	0.670	0.6500	0.5300	0.6200
citric_acid	0.0600	0.4800	0.1200	0.120	0.6000	0.4800	0.3200
residual_sugar	2.6000	1.5000	2.6000	1.600	2.1000	2.5000	2.2000
chlorides	0.0860	0.0680	0.0920	0.186	0.1120	0.0630	0.0820
free_sulfur_dioxide	20.0000	7.0000	12.0000	5.000	12.0000	6.0000	7.0000
total_sulfur_dioxide	44.0000	15.0000	28.0000	21.000	90.0000	25.0000	54.0000
density	0.9965	0.9973	0.9994	0.996	0.9973	0.9998	0.9966
pH	3.3800	3.2200	3.5100	3.390	3.2000	3.1200	3.3600
sulphates	0.5900	0.6400	0.7200	0.540	0.5200	0.5900	0.5200
alcohol	10.7000	10.1000	10.0000	9.500	9.2000	9.3000	9.4000
quality	6.0000	6.0000	5.0000	5.000	5.0000	6.0000	5.0000
	308	309	310	311	312	313	314
fixed_acidity	10.3000	10.3000	7.4000	10.3000	7.900	9.00000	8.6000
volatile_acidity	0.4100	0.4300	0.2900	0.5300	0.530	0.46000	0.4700
citric_acid	0.4200	0.4400	0.3800	0.4800	0.240	0.31000	0.3000
residual_sugar	2.4000	2.4000	1.7000	2.5000	2.000	2.80000	3.0000
chlorides	0.2130	0.2140	0.0620	0.0630	0.072	0.09300	0.0760
free_sulfur_dioxide	6.0000	5.0000	9.0000	6.0000	15.000	19.00000	30.0000
total_sulfur_dioxide	14.0000	12.0000	30.0000	25.0000	105.000	98.00000	135.0000
density	0.9994	0.9994	0.9968	0.9998	0.996	0.99815	0.9976
pH	3.1900	3.1900	3.4100	3.1200	3.270	3.32000	3.3000
sulphates	0.6200	0.6300	0.5300	0.5900	0.540	0.63000	0.5300
alcohol	9.5000	9.5000	9.5000	9.3000	9.400	9.50000	9.4000
quality	6.0000	6.0000	6.0000	6.0000	6.000	6.00000	5.0000
	315	316	317	318	319	320	321
fixed_acidity	7.40000	7.1000	9.6000	9.60000	9.8000	9.60000	9.8000
volatile_acidity	0.36000	0.3500	0.5600	0.77000	0.6600	0.77000	0.6600
citric_acid	0.29000	0.2900	0.2300	0.12000	0.3900	0.12000	0.3900
residual_sugar	2.60000	2.5000	3.4000	2.90000	3.2000	2.90000	3.2000
chlorides	0.08700	0.0960	0.1020	0.08200	0.0830	0.08200	0.0830
free_sulfur_dioxide	26.00000	20.0000	37.0000	30.00000	21.0000	30.00000	21.0000
total_sulfur_dioxide	72.00000	53.0000	92.0000	74.00000	59.0000	74.00000	59.0000

density	0.99645	0.9962	0.9996	0.99865	0.9989	0.99865	0.9989
pH	3.39000	3.4200	3.3000	3.30000	3.3700	3.30000	3.3700
sulphates	0.68000	0.6500	0.6500	0.64000	0.7100	0.64000	0.7100
alcohol	11.00000	11.0000	10.1000	10.40000	11.5000	10.40000	11.5000
quality	5.00000	6.0000	5.0000	6.00000	7.0000	6.00000	7.0000
	322	323	324	325	326	327	328
fixed_acidity	9.30000	7.80000	10.300	10.0000	10.0000	11.6000	10.300
volatile_acidity	0.61000	0.62000	0.590	0.4900	0.4900	0.5300	0.440
citric_acid	0.26000	0.05000	0.420	0.2000	0.2000	0.6600	0.500
residual_sugar	3.40000	2.30000	2.800	11.0000	11.0000	3.6500	4.500
chlorides	0.09000	0.07900	0.090	0.0710	0.0710	0.1210	0.107
free_sulfur_dioxide	25.00000	6.00000	35.000	13.0000	13.0000	6.0000	5.000
total_sulfur_dioxide	87.00000	18.00000	73.000	50.0000	50.0000	14.0000	13.000
density	0.99975	0.99735	0.999	1.0015	1.0015	0.9978	0.998
pH	3.24000	3.29000	3.280	3.1600	3.1600	3.0500	3.280
sulphates	0.62000	0.63000	0.700	0.6900	0.6900	0.7400	0.830
alcohol	9.70000	9.30000	9.500	9.2000	9.2000	11.5000	11.500
quality	5.00000	5.00000	6.000	6.0000	6.0000	7.0000	5.000
	329	330	331	332	333	334	335
fixed_acidity	13.4000	10.7000	10.200	10.200	8.0000	8.4000	7.9000
volatile_acidity	0.2700	0.4600	0.360	0.360	0.5800	0.5600	0.6500
citric_acid	0.6200	0.3900	0.640	0.640	0.2800	0.0800	0.0100
residual_sugar	2.6000	2.0000	2.900	2.900	3.2000	2.1000	2.5000
chlorides	0.0820	0.0610	0.122	0.122	0.0660	0.1050	0.0780
free_sulfur_dioxide	6.0000	7.0000	10.000	10.000	21.0000	16.0000	17.0000
total_sulfur_dioxide	21.0000	15.0000	41.000	41.000	114.0000	44.0000	38.0000
density	1.0002	0.9981	0.998	0.998	0.9973	0.9958	0.9963
pH	3.1600	3.1800	3.230	3.230	3.2200	3.1300	3.3400
sulphates	0.6700	0.6200	0.660	0.660	0.5400	0.5200	0.7400
alcohol	9.7000	9.5000	12.500	12.500	9.4000	11.0000	11.7000
quality	6.0000	5.0000	6.000	6.000	6.0000	5.0000	7.0000
	336	337	338	339	340	341	342
fixed_acidity	11.9000	8.9000	7.8000	12.4000	12.5000	12.200	10.6000
volatile_acidity	0.6950	0.4300	0.4300	0.4900	0.2800	0.340	0.4200
citric_acid	0.5300	0.4500	0.3200	0.5800	0.5400	0.500	0.4800
residual_sugar	3.4000	1.9000	2.8000	3.0000	2.3000	2.400	2.7000
chlorides	0.1280	0.0520	0.0800	0.1030	0.0820	0.066	0.0650
free_sulfur_dioxide	7.0000	6.0000	29.0000	28.0000	12.0000	10.000	5.0000
total_sulfur_dioxide	21.0000	16.0000	58.0000	99.0000	29.0000	21.000	18.0000
density	0.9992	0.9948	0.9974	1.0008	0.9997	1.000	0.9972
pH	3.1700	3.3500	3.3100	3.1600	3.1100	3.120	3.2100
sulphates	0.8400	0.7000	0.6400	1.0000	1.3600	1.180	0.8700
alcohol	12.2000	12.5000	10.3000	11.5000	9.8000	9.200	11.3000
quality	7.0000	6.0000	5.0000	6.0000	7.0000	6.000	6.0000
	343	344	345	346	347	348	349

fixed_acidity	10.9000	10.9000	11.9000	7.0000	6.6000	13.8000	9.6000
volatile_acidity	0.3900	0.3900	0.5700	0.6850	0.8150	0.4900	0.5600
citric_acid	0.4700	0.4700	0.5000	0.0000	0.0200	0.6700	0.3100
residual_sugar	1.8000	1.8000	2.6000	1.9000	2.7000	3.0000	2.8000
chlorides	0.1180	0.1180	0.0820	0.0670	0.0720	0.0930	0.0890
free_sulfur_dioxide	6.0000	6.0000	6.0000	40.0000	17.0000	6.0000	15.0000
total_sulfur_dioxide	14.0000	14.0000	32.0000	63.0000	34.0000	15.0000	46.0000
density	0.9982	0.9982	1.0006	0.9979	0.9955	0.9986	0.9979
pH	3.3000	3.3000	3.1200	3.6000	3.5800	3.0200	3.1100
sulphates	0.7500	0.7500	0.7800	0.8100	0.8900	0.9300	0.9200
alcohol	9.8000	9.8000	10.7000	9.9000	12.3000	12.0000	10.0000
quality	6.0000	6.0000	6.0000	5.0000	7.0000	6.0000	6.0000
	350	351	352	353	354	355	356
fixed_acidity	9.1000	10.7000	9.1000	7.7000	13.5000	6.1000	6.7000
volatile_acidity	0.7850	0.6700	0.7950	0.6650	0.5300	0.2100	0.7500
citric_acid	0.0000	0.2200	0.0000	0.0000	0.7900	0.4000	0.0100
residual_sugar	2.6000	2.7000	2.6000	2.4000	4.8000	1.4000	2.4000
chlorides	0.0930	0.1070	0.0960	0.0900	0.1200	0.0660	0.0780
free_sulfur_dioxide	11.0000	17.0000	11.0000	8.0000	23.0000	40.5000	17.0000
total_sulfur_dioxide	28.0000	34.0000	26.0000	19.0000	77.0000	165.0000	32.0000
density	0.9994	1.0004	0.9994	0.9974	1.0018	0.9912	0.9955
pH	3.3600	3.2800	3.3500	3.2700	3.1800	3.2500	3.5500
sulphates	0.8600	0.9800	0.8300	0.7300	0.7700	0.5900	0.6100
alcohol	9.4000	9.9000	9.4000	9.3000	13.0000	11.9000	12.8000
quality	6.0000	6.0000	6.0000	5.0000	5.0000	6.0000	6.0000
	357	358	359	360	361	362	363
fixed_acidity	11.5000	10.500	11.900	12.600	8.2000	8.6000	11.9000
volatile_acidity	0.4100	0.420	0.430	0.380	0.7000	0.4500	0.5800
citric_acid	0.5200	0.660	0.660	0.660	0.2300	0.3100	0.6600
residual_sugar	3.0000	2.950	3.100	2.600	2.0000	2.6000	2.5000
chlorides	0.0800	0.116	0.109	0.088	0.0990	0.0860	0.0720
free_sulfur_dioxide	29.0000	12.000	10.000	10.000	14.0000	21.0000	6.0000
total_sulfur_dioxide	55.0000	29.000	23.000	41.000	81.0000	50.0000	37.0000
density	1.0001	0.997	1.000	1.001	0.9973	0.9982	0.9992
pH	3.2600	3.240	3.150	3.170	3.1900	3.3700	3.0500
sulphates	0.8800	0.750	0.850	0.680	0.7000	0.9100	0.5600
alcohol	11.0000	11.700	10.400	9.800	9.4000	9.9000	10.0000
quality	5.0000	7.000	7.000	6.000	5.0000	6.0000	5.0000
	364	365	366	367	368	369	370
fixed_acidity	12.5000	12.8000	10.0000	12.8000	10.400	10.3000	9.4000
volatile_acidity	0.4600	0.6150	0.4200	0.6150	0.575	0.3400	0.2700
citric_acid	0.6300	0.6600	0.5000	0.6600	0.610	0.5200	0.5300
residual_sugar	2.0000	5.8000	3.4000	5.8000	2.600	2.8000	2.4000
chlorides	0.0710	0.0830	0.1070	0.0830	0.076	0.1590	0.0740
free_sulfur_dioxide	6.0000	7.0000	7.0000	7.0000	11.000	15.0000	6.0000

total_sulfur_dioxide	15.0000	42.0000	21.0000	42.0000	24.000	75.0000	18.0000
density	0.9988	1.0022	0.9979	1.0022	1.000	0.9998	0.9962
pH	2.9900	3.0700	3.2600	3.0700	3.160	3.1800	3.2000
sulphates	0.8700	0.7300	0.9300	0.7300	0.690	0.6400	1.1300
alcohol	10.2000	10.0000	11.8000	10.0000	9.000	9.4000	12.0000
quality	5.0000	7.0000	6.0000	7.0000	5.000	5.0000	7.0000
	371	372	373	374	375	376	377
fixed_acidity	6.9000	7.9000	9.1000	7.4000	14.0000	11.5000	11.5000
volatile_acidity	0.7650	0.2400	0.2800	0.5500	0.4100	0.5400	0.4500
citric_acid	0.0200	0.4000	0.4800	0.2200	0.6300	0.7100	0.5000
residual_sugar	2.3000	1.6000	1.8000	2.2000	3.8000	4.4000	3.0000
chlorides	0.0630	0.0560	0.0670	0.1060	0.0890	0.1240	0.0780
free_sulfur_dioxide	35.0000	11.0000	26.0000	12.0000	6.0000	6.0000	19.0000
total_sulfur_dioxide	63.0000	25.0000	46.0000	72.0000	47.0000	15.0000	47.0000
density	0.9975	0.9967	0.9967	0.9959	1.0014	0.9984	1.0003
pH	3.5700	3.3200	3.3200	3.0500	3.0100	3.0100	3.2600
sulphates	0.7800	0.8700	1.0400	0.6300	0.8100	0.8300	1.1100
alcohol	9.9000	8.7000	10.6000	9.2000	10.8000	11.8000	11.0000
quality	5.0000	6.0000	6.0000	5.0000	6.0000	7.0000	6.0000
	378	379	380	381	382	383	384
fixed_acidity	9.4000	11.4000	8.3000	8.3000	13.7000	8.3000	8.3000
volatile_acidity	0.2700	0.6250	0.4200	0.2600	0.4150	0.2600	0.2600
citric_acid	0.5300	0.6600	0.3800	0.4200	0.6800	0.4200	0.4200
residual_sugar	2.4000	6.2000	2.5000	2.0000	2.9000	2.0000	2.0000
chlorides	0.0740	0.0880	0.0940	0.0800	0.0850	0.0800	0.0800
free_sulfur_dioxide	6.0000	6.0000	24.0000	11.0000	17.0000	11.0000	11.0000
total_sulfur_dioxide	18.0000	24.0000	60.0000	27.0000	43.0000	27.0000	27.0000
density	0.9962	0.9988	0.9979	0.9974	1.0014	0.9974	0.9974
pH	3.2000	3.1100	3.3100	3.2100	3.0600	3.2100	3.2100
sulphates	1.1300	0.9900	0.7000	0.8000	0.8000	0.8000	0.8000
alcohol	12.0000	13.3000	10.8000	9.4000	10.0000	9.4000	9.4000
quality	7.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
	385	386	387	388	389	390	391
fixed_acidity	7.700	7.4000	7.8000	8.3000	7.8000	9.6000	5.6000
volatile_acidity	0.510	0.6300	0.5400	0.6600	0.4600	0.3800	0.8500
citric_acid	0.280	0.0700	0.2600	0.1500	0.2600	0.3100	0.0500
residual_sugar	2.100	2.4000	2.0000	1.9000	1.9000	2.5000	1.4000
chlorides	0.087	0.0900	0.0880	0.0790	0.0880	0.0960	0.0450
free_sulfur_dioxide	23.000	11.0000	23.0000	17.0000	23.0000	16.0000	12.0000
total_sulfur_dioxide	54.000	37.0000	48.0000	42.0000	53.0000	49.0000	88.0000
density	0.998	0.9979	0.9981	0.9972	0.9981	0.9982	0.9924
pH	3.420	3.4300	3.4100	3.3100	3.4300	3.1900	3.5600
sulphates	0.740	0.7600	0.7400	0.5400	0.7400	0.7000	0.8200
alcohol	9.200	9.7000	9.2000	9.6000	9.2000	10.0000	12.9000
quality	5.000	6.0000	6.0000	6.0000	6.0000	7.0000	8.0000

	392	393	394	395	396	397	398
fixed_acidity	13.7000	9.500	8.400	12.7000	12.0000	6.6000	11.5000
volatile_acidity	0.4150	0.370	0.665	0.6000	0.3700	0.7350	0.5900
citric_acid	0.6800	0.520	0.610	0.6500	0.7600	0.0200	0.5900
residual_sugar	2.9000	2.000	2.000	2.3000	4.2000	7.9000	2.6000
chlorides	0.0850	0.082	0.112	0.0630	0.0660	0.1220	0.0870
free_sulfur_dioxide	17.0000	6.000	13.000	6.0000	7.0000	68.0000	13.0000
total_sulfur_dioxide	43.0000	26.000	95.000	25.0000	38.0000	124.0000	49.0000
density	1.0014	0.998	0.997	0.9997	1.0004	0.9994	0.9988
pH	3.0600	3.180	3.160	3.0300	3.2200	3.4700	3.1800
sulphates	0.8000	0.510	0.540	0.5700	0.6000	0.5300	0.6500
alcohol	10.0000	9.500	9.100	9.9000	13.0000	9.9000	11.0000
quality	6.0000	5.000	5.000	5.0000	7.0000	5.0000	6.0000
	399	400	401	402	403	404	405
fixed_acidity	11.5000	8.7000	6.6000	7.7000	12.200	11.4000	7.7000
volatile_acidity	0.5900	0.7650	0.7350	0.2600	0.480	0.6000	0.6900
citric_acid	0.5900	0.2200	0.0200	0.3000	0.540	0.4900	0.0500
residual_sugar	2.6000	2.3000	7.9000	1.7000	2.600	2.7000	2.7000
chlorides	0.0870	0.0640	0.1220	0.0590	0.085	0.0850	0.0750
free_sulfur_dioxide	13.0000	9.0000	68.0000	20.0000	19.000	10.0000	15.0000
total_sulfur_dioxide	49.0000	42.0000	124.0000	38.0000	64.000	41.0000	27.0000
density	0.9988	0.9963	0.9994	0.9949	1.000	0.9994	0.9974
pH	3.1800	3.1000	3.4700	3.2900	3.100	3.1500	3.2600
sulphates	0.6500	0.5500	0.5300	0.4700	0.610	0.6300	0.6100
alcohol	11.0000	9.4000	9.9000	10.8000	10.500	10.5000	9.1000
quality	6.0000	5.0000	5.0000	6.0000	6.000	6.0000	5.0000
	406	407	408	409	410	411	412
fixed_acidity	8.7000	9.8000	12.0000	10.400	12.5000	9.0000	9.1000
volatile_acidity	0.3100	0.4400	0.3900	0.340	0.4600	0.4300	0.4500
citric_acid	0.4600	0.4700	0.6600	0.580	0.4900	0.3400	0.3500
residual_sugar	1.4000	2.5000	3.0000	3.700	4.5000	2.5000	2.4000
chlorides	0.0590	0.0630	0.0930	0.174	0.0700	0.0800	0.0800
free_sulfur_dioxide	11.0000	9.0000	12.0000	6.000	26.0000	26.0000	23.0000
total_sulfur_dioxide	25.0000	28.0000	30.0000	16.000	49.0000	86.0000	78.0000
density	0.9966	0.9981	0.9996	0.997	0.9981	0.9987	0.9987
pH	3.3600	3.2400	3.1800	3.190	3.0500	3.3800	3.3800
sulphates	0.7600	0.6500	0.6300	0.700	0.5700	0.6200	0.6200
alcohol	10.1000	10.8000	10.8000	11.300	9.6000	9.5000	9.5000
quality	6.0000	6.0000	7.0000	6.000	4.0000	6.0000	5.0000
	413	414	415	416	417	418	419
fixed_acidity	7.1000	9.9000	8.8000	8.6000	10.600	7.0000	11.9000
volatile_acidity	0.7350	0.4000	0.5200	0.7250	0.480	0.5800	0.3800
citric_acid	0.1600	0.5300	0.3400	0.2400	0.640	0.1200	0.5100
residual_sugar	1.9000	6.7000	2.7000	6.6000	2.200	1.9000	2.0000
chlorides	0.1000	0.0970	0.0870	0.1170	0.111	0.0910	0.1210

free_sulfur_dioxide	15.0000	6.0000	24.0000	31.0000	6.000	34.0000	7.0000
total_sulfur_dioxide	77.0000	19.0000	122.0000	134.0000	20.000	124.0000	20.0000
density	0.9966	0.9986	0.9982	1.0014	0.997	0.9956	0.9996
pH	3.2700	3.2700	3.2600	3.3200	3.260	3.4400	3.2400
sulphates	0.6400	0.8200	0.6100	1.0700	0.660	0.4800	0.7600
alcohol	9.3000	11.7000	9.5000	9.3000	11.700	10.5000	10.4000
quality	5.0000	7.0000	5.0000	5.0000	6.000	5.0000	6.0000
	420	421	422	423	424	425	426
fixed_acidity	6.8000	9.5000	6.6000	7.7000	10.5000	7.7000	6.6000
volatile_acidity	0.7700	0.5600	0.8400	0.9600	0.2400	0.9600	0.8400
citric_acid	0.0000	0.3300	0.0300	0.2000	0.4700	0.2000	0.0300
residual_sugar	1.8000	2.4000	2.3000	2.0000	2.1000	2.0000	2.3000
chlorides	0.0660	0.0890	0.0590	0.0470	0.0660	0.0470	0.0590
free_sulfur_dioxide	34.0000	35.0000	32.0000	15.0000	6.0000	15.0000	32.0000
total_sulfur_dioxide	52.0000	67.0000	48.0000	60.0000	24.0000	60.0000	48.0000
density	0.9976	0.9972	0.9952	0.9955	0.9978	0.9955	0.9952
pH	3.6200	3.2800	3.5200	3.3600	3.1500	3.3600	3.5200
sulphates	0.6800	0.7300	0.5600	0.4400	0.9000	0.4400	0.5600
alcohol	9.9000	11.8000	12.3000	10.9000	11.0000	10.9000	12.3000
quality	5.0000	7.0000	7.0000	5.0000	7.0000	5.0000	7.0000
	427	428	429	430	431	432	433
fixed_acidity	6.4000	9.5000	9.1000	12.8000	10.5000	7.8000	11.9000
volatile_acidity	0.6700	0.7800	0.5200	0.8400	0.2400	0.5500	0.3700
citric_acid	0.0800	0.2200	0.3300	0.6300	0.4700	0.3500	0.6900
residual_sugar	2.1000	1.9000	1.3000	2.4000	2.1000	2.2000	2.3000
chlorides	0.0450	0.0770	0.0700	0.0880	0.0660	0.0740	0.0780
free_sulfur_dioxide	19.0000	6.0000	9.0000	13.0000	6.0000	21.0000	12.0000
total_sulfur_dioxide	48.0000	32.0000	30.0000	35.0000	24.0000	66.0000	24.0000
density	0.9949	0.9988	0.9978	0.9997	0.9978	0.9974	0.9958
pH	3.4900	3.2600	3.2400	3.1000	3.1500	3.2500	3.0000
sulphates	0.4900	0.5600	0.6000	0.6000	0.9000	0.5600	0.6500
alcohol	11.4000	10.6000	9.3000	10.4000	11.0000	9.2000	12.8000
quality	6.0000	6.0000	5.0000	6.0000	7.0000	5.0000	6.0000
	434	435	436	437	438	439	440
fixed_acidity	12.3000	10.4000	12.3000	8.0000	11.1000	10.4000	7.0000
volatile_acidity	0.3900	0.4100	0.3900	0.6700	0.4500	0.4100	0.6200
citric_acid	0.6300	0.5500	0.6300	0.3000	0.7300	0.5500	0.1800
residual_sugar	2.3000	3.2000	2.3000	2.0000	3.2000	3.2000	1.5000
chlorides	0.0910	0.0760	0.0910	0.0600	0.0660	0.0760	0.0620
free_sulfur_dioxide	6.0000	22.0000	6.0000	38.0000	6.0000	22.0000	7.0000
total_sulfur_dioxide	18.0000	54.0000	18.0000	62.0000	22.0000	54.0000	50.0000
density	1.0004	0.9996	1.0004	0.9958	0.9986	0.9996	0.9951
pH	3.1600	3.1500	3.1600	3.2600	3.1700	3.1500	3.0800
sulphates	0.4900	0.8900	0.4900	0.5600	0.6600	0.8900	0.6000
alcohol	9.5000	9.9000	9.5000	10.2000	11.2000	9.9000	9.3000

	Midterm_WineQuality							
quality	5.0000 441	6.0000 442	5.0000 443	6.0000 444	6.0000 445	6.0000 446	5.0000 447	
fixed_acidity	12.6000	11.9000	15.6000	10.0000	5.3000	9.5000	12.5000	
volatile_acidity	0.3100	0.4000	0.6850	0.4400	0.5700	0.7350	0.3800	
citric_acid	0.7200	0.6500	0.7600	0.4900	0.0100	0.1000	0.6000	
residual_sugar	2.2000	2.1500	3.7000	2.7000	1.7000	2.1000	2.6000	
chlorides	0.0720	0.0680	0.1000	0.0770	0.0540	0.0790	0.0810	
free_sulfur_dioxide	6.0000	7.0000	6.0000	11.0000	5.0000	6.0000	31.0000	
total_sulfur_dioxide	29.0000	27.0000	43.0000	19.0000	27.0000	31.0000	72.0000	
density	0.9987	0.9988	1.0032	0.9963	0.9934	0.9986	0.9996	
pH	2.8800	3.0600	2.9500	3.2300	3.5700	3.2300	3.1000	
sulphates	0.8200	0.6800	0.6800	0.6300	0.8400	0.5600	0.7300	
alcohol	9.8000	11.3000	11.2000	11.6000	12.5000	10.1000	10.5000	
quality	8.0000 448	6.0000 449	7.0000 450	7.0000 451	7.0000 452	6.0000 453	5.0000 454	
fixed_acidity	9.3000	8.6000	11.9000	11.9000	8.4000	6.8000	10.4000	
volatile_acidity	0.4800	0.5300	0.3900	0.3900	0.3700	0.5600	0.3300	
citric_acid	0.2900	0.2200	0.6900	0.6900	0.5300	0.0300	0.6300	
residual_sugar	2.1000	2.0000	2.8000	2.8000	1.8000	1.7000	2.8000	
chlorides	0.1270	0.1000	0.0950	0.0950	0.4130	0.0840	0.0840	
free_sulfur_dioxide	6.0000	7.0000	17.0000	17.0000	9.0000	18.0000	5.0000	
total_sulfur_dioxide	16.0000	27.0000	35.0000	35.0000	26.0000	35.0000	22.0000	
density	0.9968	0.9967	0.9994	0.9994	0.9979	0.9968	0.9998	
pH	3.2200	3.2000	3.1000	3.1000	3.0600	3.4400	3.2600	
sulphates	0.7200	0.5600	0.6100	0.6100	1.0600	0.6300	0.7400	
alcohol	11.2000	10.2000	10.8000	10.8000	9.1000	10.0000	11.2000	
quality	5.0000 455	6.0000 456	6.0000 457	6.0000 458	6.0000 459	6.0000 460	7.0000 461	
fixed_acidity	7.0000	11.3000	8.9000	9.2000	10.4000	11.6000	9.2000	
volatile_acidity	0.2300	0.6200	0.5900	0.6300	0.3300	0.5800	0.4300	
citric_acid	0.4000	0.6700	0.3900	0.2100	0.6300	0.6600	0.5200	
residual_sugar	1.6000	5.2000	2.3000	2.7000	2.8000	2.2000	2.3000	
chlorides	0.0630	0.0860	0.0950	0.0970	0.0840	0.0740	0.0830	
free_sulfur_dioxide	21.0000	6.0000	5.0000	29.0000	5.0000	10.0000	14.0000	
total_sulfur_dioxide	67.0000	19.0000	22.0000	65.0000	22.0000	47.0000	23.0000	
density	0.9952	0.9988	0.9986	0.9988	0.9998	1.0008	0.9976	
pH	3.5000	3.2200	3.3700	3.2800	3.2600	3.2500	3.3500	
sulphates	0.6300	0.6900	0.5800	0.5800	0.7400	0.5700	0.6100	
alcohol	11.1000	13.4000	10.3000	9.6000	11.2000	9.0000	11.3000	
quality	5.0000 462	8.0000 463	5.0000 464	5.0000 465	7.0000 466	3.0000 467	6.0000 468	
fixed_acidity	8.3000	11.000	8.1000	11.5000	10.0000	10.3000	8.8000	
volatile_acidity	0.6150	0.260	0.6600	0.3150	0.2900	0.5000	0.4600	
citric_acid	0.2200	0.680	0.7000	0.5400	0.4000	0.4200	0.4500	
residual_sugar	2.6000	2.550	2.2000	2.1000	2.9000	2.0000	2.6000	

chlorides	0.0870	0.085	0.0980	0.0840	0.0980	0.0690	0.0650
free_sulfur_dioxide	6.0000	10.000	25.0000	5.0000	10.0000	21.0000	7.0000
total_sulfur_dioxide	19.0000	25.000	129.0000	15.0000	26.0000	51.0000	18.0000
density	0.9982	0.997	0.9972	0.9987	1.0006	0.9982	0.9947
pH	3.2600	3.180	3.0800	2.9800	3.4800	3.1600	3.3200
sulphates	0.6100	0.610	0.5300	0.7000	0.9100	0.7200	0.7900
alcohol	9.3000	11.800	9.0000	9.2000	9.7000	11.5000	14.0000
quality	5.0000	5.000	5.0000	6.0000	5.0000	6.0000	6.0000
	469	470	471	472	473	474	475
fixed_acidity	11.40	8.7000	13.0000	9.600	12.5000	9.9000	10.5000
volatile_acidity	0.36	0.8200	0.3200	0.540	0.3700	0.3500	0.2800
citric_acid	0.69	0.0200	0.6500	0.420	0.5500	0.5500	0.5100
residual_sugar	2.10	1.2000	2.6000	2.400	2.6000	2.1000	1.7000
chlorides	0.09	0.0700	0.0930	0.081	0.0830	0.0620	0.0800
free_sulfur_dioxide	6.00	36.0000	15.0000	25.000	25.0000	5.0000	10.0000
total_sulfur_dioxide	21.00	48.0000	47.0000	52.000	68.0000	14.0000	24.0000
density	1.00	0.9952	0.9996	0.997	0.9995	0.9971	0.9982
pH	3.17	3.2000	3.0500	3.200	3.1500	3.2600	3.2000
sulphates	0.62	0.5800	0.6100	0.710	0.8200	0.7900	0.8900
alcohol	9.20	9.8000	10.6000	11.400	10.4000	10.6000	9.4000
quality	6.00	5.0000	5.0000	6.000	6.0000	5.0000	6.0000
	476	477	478	479	480	481	482
fixed_acidity	9.6000	9.300	10.4000	9.6000	9.4000	10.6000	9.4000
volatile_acidity	0.6800	0.270	0.2400	0.6800	0.6850	0.2800	0.3000
citric_acid	0.2400	0.410	0.4900	0.2400	0.1100	0.3900	0.5600
residual_sugar	2.2000	2.000	1.8000	2.2000	2.7000	15.5000	2.8000
chlorides	0.0870	0.091	0.0750	0.0870	0.0770	0.0690	0.0800
free_sulfur_dioxide	5.0000	6.000	6.0000	5.0000	6.0000	6.0000	6.0000
total_sulfur_dioxide	28.0000	16.000	20.0000	28.0000	31.0000	23.0000	17.0000
density	0.9988	0.998	0.9977	0.9988	0.9984	1.0026	0.9964
pH	3.1400	3.280	3.1800	3.1400	3.1900	3.1200	3.1500
sulphates	0.6000	0.700	1.0600	0.6000	0.7000	0.6600	0.9200
alcohol	10.2000	9.700	11.0000	10.2000	10.1000	9.2000	11.7000
quality	5.0000	5.000	6.0000	5.0000	6.0000	5.0000	8.0000
	483	484	485	486	487	488	489
fixed_acidity	10.6000	10.6000	10.600	10.2000	10.2000	10.2000	11.6000
volatile_acidity	0.3600	0.3600	0.440	0.6700	0.6700	0.6450	0.3200
citric_acid	0.5900	0.6000	0.680	0.3900	0.3900	0.3600	0.5500
residual_sugar	2.2000	2.2000	4.100	1.9000	1.9000	1.8000	2.8000
chlorides	0.1520	0.1520	0.114	0.0540	0.0540	0.0530	0.0810
free_sulfur_dioxide	6.0000	7.0000	6.000	6.0000	6.0000	5.0000	35.0000
total_sulfur_dioxide	18.0000	18.0000	24.000	17.0000	17.0000	14.0000	67.0000
density	0.9986	0.9986	0.997	0.9976	0.9976	0.9982	1.0002
pH	3.0400	3.0400	3.060	3.1700	3.1700	3.1700	3.3200
sulphates	1.0500	1.0600	0.660	0.4700	0.4700	0.4200	0.9200

alcohol	9.4000	9.4000	13.400	10.0000	10.0000	10.0000	10.0000	10.8000
quality	5.0000	5.0000	6.000	5.0000	5.0000	6.0000	7.0000	
	490	491	492	493	494	495	496	
fixed_acidity	9.3000	9.3000	9.2000	8.900	8.7000	6.5000	10.7000	
volatile_acidity	0.3900	0.7750	0.4100	0.400	0.6900	0.3900	0.3500	
citric_acid	0.4000	0.2700	0.5000	0.510	0.3100	0.2300	0.5300	
residual_sugar	2.6000	2.8000	2.5000	2.600	3.0000	8.3000	2.6000	
chlorides	0.0730	0.0780	0.0550	0.052	0.0860	0.0510	0.0700	
free_sulfur_dioxide	10.0000	24.0000	12.0000	13.000	23.0000	28.0000	5.0000	
total_sulfur_dioxide	26.0000	56.0000	25.0000	27.000	81.0000	91.0000	16.0000	
density	0.9984	0.9984	0.9952	0.995	1.0002	0.9952	0.9972	
pH	3.3400	3.3100	3.3400	3.320	3.4800	3.4400	3.1500	
sulphates	0.7500	0.6700	0.7900	0.900	0.7400	0.5500	0.6500	
alcohol	10.2000	10.6000	13.3000	13.400	11.6000	12.1000	11.0000	
quality	6.0000	6.0000	7.0000	7.000	6.0000	6.0000	8.0000	
	497	498	499	500	501	502	503	
fixed_acidity	7.8000	7.2000	10.7000	8.7000	7.8000	10.400	10.400	
volatile_acidity	0.5200	0.3400	0.3500	0.6900	0.5200	0.440	0.440	
citric_acid	0.2500	0.3200	0.5300	0.3100	0.2500	0.730	0.730	
residual_sugar	1.9000	2.5000	2.6000	3.0000	1.9000	6.550	6.550	
chlorides	0.0810	0.0900	0.0700	0.0860	0.0810	0.074	0.074	
free_sulfur_dioxide	14.0000	43.0000	5.0000	23.0000	14.0000	38.000	38.000	
total_sulfur_dioxide	38.0000	113.0000	16.0000	81.0000	38.0000	76.000	76.000	
density	0.9984	0.9966	0.9972	1.0002	0.9984	0.999	0.999	
pH	3.4300	3.3200	3.1500	3.4800	3.4300	3.170	3.170	
sulphates	0.6500	0.7900	0.6500	0.7400	0.6500	0.850	0.850	
alcohol	9.0000	11.1000	11.0000	11.6000	9.0000	12.000	12.000	
quality	6.0000	5.0000	8.0000	6.0000	6.0000	7.000	7.000	
	504	505	506	507	508	509	510	
fixed_acidity	10.5000	10.5000	10.2000	10.4000	11.200	10.0000	13.3000	
volatile_acidity	0.2600	0.2400	0.4900	0.2400	0.670	0.5900	0.2900	
citric_acid	0.4700	0.4200	0.6300	0.4600	0.550	0.3100	0.7500	
residual_sugar	1.9000	1.8000	2.9000	1.8000	2.300	2.2000	2.8000	
chlorides	0.0780	0.0770	0.0720	0.0750	0.084	0.0900	0.0840	
free_sulfur_dioxide	6.0000	6.0000	10.0000	6.0000	6.000	26.0000	23.0000	
total_sulfur_dioxide	24.0000	22.0000	26.0000	21.0000	13.000	62.0000	43.0000	
density	0.9976	0.9976	0.9968	0.9976	1.000	0.9994	0.9986	
pH	3.1800	3.2100	3.1600	3.2500	3.170	3.1800	3.0400	
sulphates	1.0400	1.0500	0.7800	1.0200	0.710	0.6300	0.6800	
alcohol	10.9000	10.8000	12.5000	10.8000	9.500	10.2000	11.4000	
quality	7.0000	7.0000	7.0000	7.0000	6.000	6.0000	7.0000	
	511	512	513	514	515	516	517	
fixed_acidity	12.4000	10.0000	10.700	10.5000	10.5000	8.500	12.500	
volatile_acidity	0.4200	0.5900	0.400	0.5100	0.5100	0.655	0.600	
citric_acid	0.4900	0.3100	0.480	0.6400	0.6400	0.490	0.490	

residual_sugar	4.6000	2.2000	2.100	2.4000	2.4000	6.100	4.300
chlorides	0.0730	0.0900	0.125	0.1070	0.1070	0.122	0.100
free_sulfur_dioxide	19.0000	26.0000	15.000	6.0000	6.0000	34.000	5.000
total_sulfur_dioxide	43.0000	62.0000	49.000	15.0000	15.0000	151.000	14.000
density	0.9978	0.9994	0.998	0.9973	0.9973	1.001	1.001
pH	3.0200	3.1800	3.030	3.0900	3.0900	3.310	3.250
sulphates	0.6100	0.6300	0.810	0.6600	0.6600	1.140	0.740
alcohol	9.5000	10.2000	9.700	11.8000	11.8000	9.300	11.900
quality	5.0000	6.0000	6.000	7.0000	7.0000	5.000	6.000
	518	519	520	521	522	523	524
fixed_acidity	10.4000	10.9000	7.3000	9.8000	7.600	8.2000	9.3000
volatile_acidity	0.6100	0.2100	0.3650	0.2500	0.410	0.3900	0.4000
citric_acid	0.4900	0.4900	0.4900	0.4900	0.490	0.4900	0.4900
residual_sugar	2.1000	2.8000	2.5000	2.7000	2.000	2.3000	2.5000
chlorides	0.2000	0.0880	0.0880	0.0880	0.088	0.0990	0.0850
free_sulfur_dioxide	5.0000	11.0000	39.0000	15.0000	16.000	47.0000	38.0000
total_sulfur_dioxide	16.0000	32.0000	106.0000	33.0000	43.000	133.0000	142.0000
density	0.9994	0.9972	0.9966	0.9982	0.998	0.9979	0.9978
pH	3.1600	3.2200	3.3600	3.4200	3.480	3.3800	3.2200
sulphates	0.6300	0.6800	0.7800	0.9000	0.640	0.9900	0.5500
alcohol	8.4000	11.7000	11.0000	10.0000	9.100	9.8000	9.4000
quality	3.0000	6.0000	5.0000	6.0000	5.000	5.0000	5.0000
	525	526	527	528	529	530	531
fixed_acidity	9.2000	10.4000	7.3000	7.0000	8.2000	9.9000	9.100
volatile_acidity	0.4300	0.6400	0.3650	0.3800	0.4200	0.6300	0.220
citric_acid	0.4900	0.2400	0.4900	0.4900	0.4900	0.2400	0.240
residual_sugar	2.4000	2.8000	2.5000	2.5000	2.6000	2.4000	2.100
chlorides	0.0860	0.1050	0.0880	0.0970	0.0840	0.0770	0.078
free_sulfur_dioxide	23.0000	29.0000	39.0000	33.0000	32.0000	6.0000	1.000
total_sulfur_dioxide	116.0000	53.0000	106.0000	85.0000	55.0000	33.0000	28.000
density	0.9976	0.9998	0.9966	0.9962	0.9988	0.9974	0.999
pH	3.2300	3.2400	3.3600	3.3900	3.3400	3.0900	3.410
sulphates	0.6400	0.6700	0.7800	0.7700	0.7500	0.5700	0.870
alcohol	9.5000	9.9000	11.0000	11.4000	8.7000	9.4000	10.300
quality	5.0000	5.0000	5.0000	6.0000	6.0000	5.0000	6.000
	532	533	534	535	536	537	538
fixed_acidity	11.9000	11.9000	10.3000	10.000	9.100	9.9000	8.1000
volatile_acidity	0.3800	0.3800	0.2700	0.480	0.220	0.6300	0.8250
citric_acid	0.4900	0.4900	0.2400	0.240	0.240	0.2400	0.2400
residual_sugar	2.7000	2.7000	2.1000	2.700	2.100	2.4000	2.1000
chlorides	0.0980	0.0980	0.0720	0.102	0.078	0.0770	0.0840
free_sulfur_dioxide	12.0000	12.0000	15.0000	13.000	1.000	6.0000	5.0000
total_sulfur_dioxide	42.0000	42.0000	33.0000	32.000	28.000	33.0000	13.0000
density	1.0004	1.0004	0.9956	1.000	0.999	0.9974	0.9972
pH	3.1600	3.1600	3.2200	3.280	3.410	3.0900	3.3700

sulphates	0.6100	0.6100	0.6600	0.560	0.870	0.5700	0.7700
alcohol	10.3000	10.3000	12.8000	10.000	10.300	9.4000	10.7000
quality	5.0000	5.0000	6.0000	6.000	6.000	5.0000	6.0000
	539	540	541	542	543	544	545
fixed_acidity	12.9000	11.2000	9.2000	9.5000	9.3000	11.2000	14.3000
volatile_acidity	0.3500	0.5000	0.5900	0.4600	0.7150	0.6600	0.3100
citric_acid	0.4900	0.7400	0.2400	0.4900	0.2400	0.2400	0.7400
residual_sugar	5.8000	5.1500	3.3000	6.3000	2.1000	2.5000	1.8000
chlorides	0.0660	0.1000	0.1010	0.0640	0.0700	0.0850	0.0750
free_sulfur_dioxide	5.0000	5.0000	20.0000	5.0000	5.0000	16.0000	6.0000
total_sulfur_dioxide	35.0000	17.0000	47.0000	17.0000	20.0000	53.0000	15.0000
density	1.0014	0.9996	0.9988	0.9988	0.9966	0.9993	1.0008
pH	3.2000	3.2200	3.2600	3.2100	3.1200	3.0600	2.8600
sulphates	0.6600	0.6200	0.6700	0.7300	0.5900	0.7200	0.7900
alcohol	12.0000	11.2000	9.6000	11.0000	9.9000	11.0000	8.4000
quality	7.0000	5.0000	5.0000	6.0000	5.0000	6.0000	6.0000
	546	547	548	549	550	551	552
fixed_acidity	9.1000	7.5000	10.6000	12.4000	9.0000	6.8000	9.4000
volatile_acidity	0.4700	0.5500	0.3100	0.3500	0.5300	0.5100	0.430
citric_acid	0.4900	0.2400	0.4900	0.4900	0.4900	0.0100	0.240
residual_sugar	2.6000	2.0000	2.5000	2.6000	1.9000	2.1000	2.800
chlorides	0.0940	0.0780	0.0670	0.0790	0.1710	0.0740	0.092
free_sulfur_dioxide	38.0000	10.0000	6.0000	27.0000	6.0000	9.0000	14.000
total_sulfur_dioxide	106.0000	28.0000	21.0000	69.0000	25.0000	25.0000	45.000
density	0.9982	0.9983	0.9987	0.9994	0.9975	0.9958	0.998
pH	3.0800	3.4500	3.2600	3.1200	3.2700	3.3300	3.190
sulphates	0.5900	0.7800	0.8600	0.7500	0.6100	0.5600	0.730
alcohol	9.1000	9.5000	10.7000	10.4000	9.4000	9.5000	10.000
quality	5.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.000
	553	554	555	556	557	558	559
fixed_acidity	9.500	5.0000	15.50000	15.50000	10.9000	15.60000	10.9000
volatile_acidity	0.460	1.0400	0.64500	0.64500	0.5300	0.64500	0.5300
citric_acid	0.240	0.2400	0.49000	0.49000	0.4900	0.49000	0.4900
residual_sugar	2.700	1.6000	4.20000	4.20000	4.6000	4.20000	4.6000
chlorides	0.092	0.0500	0.09500	0.09500	0.1180	0.09500	0.1180
free_sulfur_dioxide	14.000	32.0000	10.00000	10.00000	10.0000	10.00000	10.0000
total_sulfur_dioxide	44.000	96.0000	23.00000	23.00000	17.0000	23.00000	17.0000
density	0.998	0.9934	1.00315	1.00315	1.0002	1.00315	1.0002
pH	3.120	3.7400	2.92000	2.92000	3.0700	2.92000	3.0700
sulphates	0.740	0.6200	0.74000	0.74000	0.5600	0.74000	0.5600
alcohol	10.000	11.5000	11.10000	11.10000	11.7000	11.10000	11.7000
quality	6.000	5.0000	5.00000	5.00000	6.0000	5.00000	6.0000
	560	561	562	563	564	565	566
fixed_acidity	13.0000	12.7000	9.0000	9.0000	7.6000	13.0000	12.7000
volatile_acidity	0.4700	0.6000	0.4400	0.5400	0.2900	0.4700	0.6000

## Midterm\_WineQuality

citric_acid	0.4900	0.4900	0.4900	0.4900	0.4900	0.4900	0.4900
residual_sugar	4.3000	2.8000	2.4000	2.9000	2.7000	4.3000	2.8000
chlorides	0.0850	0.0750	0.0780	0.0940	0.0920	0.0850	0.0750
free_sulfur_dioxide	6.0000	5.0000	26.0000	41.0000	25.0000	6.0000	5.0000
total_sulfur_dioxide	47.0000	19.0000	121.0000	110.0000	60.0000	47.0000	19.0000
density	1.0021	0.9994	0.9978	0.9982	0.9971	1.0021	0.9994
pH	3.3000	3.1400	3.2300	3.0800	3.3100	3.3000	3.1400
sulphates	0.6800	0.5700	0.5800	0.6100	0.6100	0.6800	0.5700
alcohol	12.7000	11.4000	9.2000	9.2000	10.1000	12.7000	11.4000
quality	6.0000	5.0000	5.0000	5.0000	6.0000	6.0000	5.0000
	567	568	569	570	571	572	573
fixed_acidity	8.7000	8.7000	9.8000	6.2000	11.5000	6.2000	10.2000
volatile_acidity	0.7000	0.7000	0.5000	0.3600	0.3500	0.3600	0.2400
citric_acid	0.2400	0.2400	0.490	0.2400	0.4900	0.2400	0.4900
residual_sugar	2.5000	2.5000	2.600	2.2000	3.3000	2.2000	2.4000
chlorides	0.2260	0.2260	0.250	0.0950	0.0700	0.0950	0.0750
free_sulfur_dioxide	5.0000	5.0000	5.000	19.0000	10.0000	19.0000	10.0000
total_sulfur_dioxide	15.0000	15.0000	20.000	42.0000	37.0000	42.0000	28.0000
density	0.9991	0.9991	0.999	0.9946	1.0003	0.9946	0.9978
pH	3.3200	3.3200	3.310	3.5700	3.3200	3.5700	3.1400
sulphates	0.6000	0.6000	0.790	0.5700	0.9100	0.5700	0.6100
alcohol	9.0000	9.0000	10.700	11.7000	11.0000	11.7000	10.4000
quality	6.0000	6.0000	6.000	6.0000	6.0000	6.0000	5.0000
	574	575	576	577	578	579	580
fixed_acidity	10.5000	10.6000	12.3000	9.9000	8.8000	8.8000	10.6000
volatile_acidity	0.5900	0.3400	0.2700	0.5000	0.4400	0.4700	0.3100
citric_acid	0.4900	0.4900	0.4900	0.2400	0.4900	0.4900	0.4900
residual_sugar	2.1000	3.2000	3.1000	2.3000	2.8000	2.9000	2.2000
chlorides	0.0700	0.0780	0.0790	0.1030	0.0830	0.0850	0.0630
free_sulfur_dioxide	14.0000	20.0000	28.0000	6.0000	18.0000	17.0000	18.0000
total_sulfur_dioxide	47.0000	78.0000	46.0000	14.0000	111.0000	110.0000	40.0000
density	0.9991	0.9992	0.9993	0.9978	0.9982	0.9982	0.9976
pH	3.3000	3.1900	3.2000	3.3400	3.3000	3.2900	3.1400
sulphates	0.5600	0.7000	0.8000	0.5200	0.6000	0.6000	0.5100
alcohol	9.6000	10.0000	10.2000	10.0000	9.5000	9.8000	9.8000
quality	4.0000	6.0000	6.0000	4.0000	5.0000	5.0000	6.0000
	581	582	583	584	585	586	587
fixed_acidity	12.3000	12.3000	11.700	12.0000	11.8000	7.600	11.1000
volatile_acidity	0.5000	0.5000	0.490	0.2800	0.3300	0.510	0.3100
citric_acid	0.4900	0.4900	0.490	0.4900	0.4900	0.240	0.4900
residual_sugar	2.2000	2.2000	2.200	1.9000	3.4000	2.400	2.7000
chlorides	0.0890	0.0890	0.083	0.0740	0.0930	0.091	0.0940
free_sulfur_dioxide	5.0000	5.0000	5.000	10.0000	54.0000	8.000	16.0000
total_sulfur_dioxide	14.0000	14.0000	15.000	21.0000	80.0000	38.000	47.0000
density	1.0002	1.0002	1.000	0.9976	1.0002	0.998	0.9986

pH	3.1900	3.1900	3.190	2.9800	3.3000	3.470	3.1200
sulphates	0.4400	0.4400	0.430	0.6600	0.7600	0.660	1.0200
alcohol	9.6000	9.6000	9.200	9.9000	10.7000	9.600	10.6000
quality	5.0000	5.0000	5.000	7.0000	7.0000	6.000	7.0000
	588	589	590	591	592	593	594
fixed_acidity	7.3000	5.0000	10.2000	9.0000	6.6000	9.0000	9.9000
volatile_acidity	0.7300	0.4200	0.2900	0.4500	0.3900	0.4500	0.4900
citric_acid	0.2400	0.2400	0.4900	0.4900	0.4900	0.4900	0.5800
residual_sugar	1.9000	2.0000	2.6000	2.6000	1.7000	2.6000	3.5000
chlorides	0.1080	0.0600	0.0590	0.0840	0.0700	0.0840	0.0940
free_sulfur_dioxide	18.0000	19.0000	5.0000	21.0000	23.0000	21.0000	9.0000
total_sulfur_dioxide	102.0000	50.0000	13.0000	75.0000	149.0000	75.0000	43.0000
density	0.9967	0.9917	0.9976	0.9987	0.9922	0.9987	1.0004
pH	3.2600	3.7200	3.0500	3.3500	3.1200	3.3500	3.2900
sulphates	0.5900	0.7400	0.7400	0.5700	0.5000	0.5700	0.5800
alcohol	9.3000	14.0000	10.5000	9.7000	11.5000	9.7000	9.0000
quality	5.0000	8.0000	7.0000	5.0000	6.0000	5.0000	5.0000
	595	596	597	598	599	600	601
fixed_acidity	7.9000	8.9000	12.4000	11.900	8.5000	12.700	8.2000
volatile_acidity	0.7200	0.5950	0.4000	0.580	0.5850	0.590	0.9150
citric_acid	0.1700	0.4100	0.5100	0.580	0.1800	0.450	0.2700
residual_sugar	2.6000	7.9000	2.0000	1.900	2.1000	2.300	2.1000
chlorides	0.0960	0.0860	0.0590	0.071	0.0780	0.082	0.0880
free_sulfur_dioxide	20.0000	30.0000	6.0000	5.000	5.0000	11.000	7.0000
total_sulfur_dioxide	38.0000	109.0000	24.0000	18.000	30.0000	22.000	23.0000
density	0.9978	0.9998	0.9994	0.998	0.9967	1.000	0.9962
pH	3.4000	3.2700	3.0400	3.090	3.2000	3.000	3.2600
sulphates	0.5300	0.5700	0.6000	0.630	0.4800	0.700	0.4700
alcohol	9.5000	9.3000	9.3000	10.000	9.8000	9.300	10.0000
quality	5.0000	5.0000	6.0000	6.000	6.0000	6.000	4.0000
	602	603	604	605	606	607	608
fixed_acidity	13.2000	7.7000	13.2000	8.3000	8.3000	9.4000	8.8000
volatile_acidity	0.4600	0.8350	0.4600	0.5800	0.6000	0.4100	0.4800
citric_acid	0.5200	0.0000	0.5200	0.1300	0.1300	0.4800	0.4100
residual_sugar	2.2000	2.6000	2.2000	2.9000	2.6000	4.6000	3.3000
chlorides	0.0710	0.0810	0.0710	0.0960	0.0850	0.0720	0.0920
free_sulfur_dioxide	12.0000	6.0000	12.0000	14.0000	6.0000	10.0000	26.0000
total_sulfur_dioxide	35.0000	14.0000	35.0000	63.0000	24.0000	20.0000	52.0000
density	1.0006	0.9975	1.0006	0.9984	0.9984	0.9973	0.9982
pH	3.1000	3.3000	3.1000	3.1700	3.3100	3.3400	3.3100
sulphates	0.5600	0.5200	0.5600	0.6200	0.5900	0.7900	0.5300
alcohol	9.0000	9.3000	9.0000	9.1000	9.2000	12.2000	10.5000
quality	6.0000	5.0000	6.0000	6.0000	6.0000	7.0000	6.0000
	609	610	611	612	613	614	615
fixed_acidity	10.1000	6.3000	8.8000	13.2000	7.5000	8.2000	9.2000

## Midterm\_WineQuality

volatile_acidity	0.6500	0.3600	0.2400	0.3800	0.6400	0.3900	0.7550
citric_acid	0.3700	0.1900	0.5400	0.5500	0.0000	0.3800	0.1800
residual_sugar	5.1000	3.2000	2.5000	2.7000	2.4000	1.5000	2.2000
chlorides	0.1100	0.0750	0.0830	0.0810	0.0770	0.0580	0.1480
free_sulfur_dioxide	11.0000	15.0000	25.0000	5.0000	18.0000	10.0000	10.0000
total_sulfur_dioxide	65.0000	39.0000	57.0000	16.0000	29.0000	29.0000	103.0000
density	1.0026	0.9956	0.9983	1.0006	0.9965	0.9962	0.9969
pH	3.3200	3.5600	3.3900	2.9800	3.3200	3.2600	2.8700
sulphates	0.6400	0.5200	0.5400	0.5400	0.6000	0.7400	1.3600
alcohol	10.4000	12.7000	9.2000	9.4000	10.0000	9.8000	10.2000
quality	6.0000	6.0000	5.0000	5.0000	6.0000	5.0000	6.0000
	616	617	618	619	620	621	622
fixed_acidity	9.6000	9.6000	11.5000	11.4000	11.3000	8.3000	8.2000
volatile_acidity	0.6000	0.6000	0.3100	0.4600	0.3700	0.5400	0.5600
citric_acid	0.5000	0.5000	0.5100	0.5000	0.4100	0.2400	0.2300
residual_sugar	2.3000	2.3000	2.2000	2.7000	2.3000	3.4000	3.4000
chlorides	0.0790	0.0790	0.0790	0.1220	0.0880	0.0760	0.0780
free_sulfur_dioxide	28.0000	28.0000	14.0000	4.0000	6.0000	16.0000	14.0000
total_sulfur_dioxide	71.0000	71.0000	28.0000	17.0000	16.0000	112.0000	104.0000
density	0.9997	0.9997	0.9982	1.0006	0.9988	0.9976	0.9976
pH	3.5000	3.5000	3.0300	3.1300	3.0900	3.2700	3.2800
sulphates	0.5700	0.5700	0.9300	0.7000	0.8000	0.6100	0.6200
alcohol	9.7000	9.7000	9.8000	10.2000	9.3000	9.4000	9.4000
quality	5.0000	5.0000	6.0000	5.0000	5.0000	5.0000	5.0000
	623	624	625	626	627	628	629
fixed_acidity	10.0000	7.9000	6.8000	6.8000	8.8000	8.8000	8.7000
volatile_acidity	0.5800	0.5100	0.6900	0.6900	0.6000	0.6000	0.5400
citric_acid	0.2200	0.2500	0.0000	0.0000	0.2900	0.2900	0.2600
residual_sugar	1.9000	2.9000	5.6000	5.6000	2.2000	2.2000	2.5000
chlorides	0.0800	0.0770	0.1240	0.1240	0.0980	0.0980	0.0970
free_sulfur_dioxide	9.0000	21.0000	21.0000	21.0000	5.0000	5.0000	7.0000
total_sulfur_dioxide	32.0000	45.0000	58.0000	58.0000	15.0000	15.0000	31.0000
density	0.9974	0.9974	0.9997	0.9997	0.9988	0.9988	0.9976
pH	3.1300	3.4900	3.4600	3.4600	3.3600	3.3600	3.2700
sulphates	0.5500	0.9600	0.7200	0.7200	0.4900	0.4900	0.6000
alcohol	9.5000	12.1000	10.2000	10.2000	9.1000	9.1000	9.3000
quality	5.0000	6.0000	5.0000	5.0000	5.0000	5.0000	6.0000
	630	631	632	633	634	635	636
fixed_acidity	7.6000	8.7000	10.4000	7.6000	10.100	7.9000	8.7000
volatile_acidity	0.6850	0.5400	0.2800	0.4100	0.935	0.3500	0.8400
citric_acid	0.2300	0.2600	0.5400	0.1400	0.220	0.2100	0.0000
residual_sugar	2.3000	2.5000	2.7000	3.0000	3.400	1.9000	1.4000
chlorides	0.1110	0.0970	0.1050	0.0870	0.105	0.0730	0.0650
free_sulfur_dioxide	20.0000	7.0000	5.0000	21.0000	11.000	46.0000	24.0000
total_sulfur_dioxide	84.0000	31.0000	19.0000	43.0000	86.000	102.0000	33.0000

## Midterm\_WineQuality

density	0.9964	0.9976	0.9988	0.9964	1.001	0.9964	0.9954
pH	3.2100	3.2700	3.2500	3.3200	3.430	3.2700	3.2700
sulphates	0.6100	0.6000	0.6300	0.5700	0.640	0.5800	0.5500
alcohol	9.3000	9.3000	9.5000	10.5000	11.300	9.5000	9.7000
quality	5.0000	6.0000	5.0000	6.0000	4.000	5.0000	5.0000
	637	638	639	640	641	642	643
fixed_acidity	9.6000	9.5000	7.7000	8.900	9.9000	9.5000	9.9000
volatile_acidity	0.8800	0.8850	0.9150	0.290	0.5400	0.5900	0.5400
citric_acid	0.2800	0.2700	0.1200	0.350	0.4500	0.4400	0.4500
residual_sugar	2.4000	2.3000	2.2000	1.900	2.3000	2.3000	2.3000
chlorides	0.0860	0.0840	0.1430	0.067	0.0710	0.0710	0.0710
free_sulfur_dioxide	30.0000	31.0000	7.0000	25.000	16.0000	21.0000	16.0000
total_sulfur_dioxide	147.0000	145.0000	23.0000	57.000	40.0000	68.0000	40.0000
density	0.9979	0.9978	0.9964	0.997	0.9991	0.9992	0.9991
pH	3.2400	3.2400	3.3500	3.180	3.3900	3.4600	3.3900
sulphates	0.5300	0.5300	0.6500	1.360	0.6200	0.6300	0.6200
alcohol	9.4000	9.4000	10.2000	10.300	9.4000	9.5000	9.4000
quality	5.0000	5.0000	7.0000	6.000	5.0000	5.0000	5.0000
	644	645	646	647	648	649	650
fixed_acidity	9.5000	9.9000	7.8000	7.3000	8.3000	8.7000	6.7000
volatile_acidity	0.5900	0.5400	0.6400	0.6700	0.8450	0.4800	0.4200
citric_acid	0.4400	0.4500	0.1000	0.0500	0.0100	0.3000	0.2700
residual_sugar	2.3000	2.3000	6.0000	3.6000	2.2000	2.8000	8.6000
chlorides	0.0710	0.0710	0.1150	0.1070	0.0700	0.0660	0.0680
free_sulfur_dioxide	21.0000	16.0000	5.0000	6.0000	5.0000	10.0000	24.0000
total_sulfur_dioxide	68.0000	40.0000	11.0000	20.0000	14.0000	28.0000	148.0000
density	0.9992	0.9991	0.9984	0.9972	0.9967	0.9964	0.9948
pH	3.4600	3.3900	3.3700	3.4000	3.3200	3.3300	3.1600
sulphates	0.6300	0.6200	0.6900	0.6300	0.5800	0.6700	0.5700
alcohol	9.5000	9.4000	10.1000	10.1000	11.0000	11.2000	11.3000
quality	5.0000	5.0000	7.0000	5.0000	4.0000	7.0000	6.0000
	651	652	653	654	655	656	657
fixed_acidity	10.7000	9.800	15.9000	9.4000	8.6000	9.7000	10.7000
volatile_acidity	0.4300	0.880	0.3600	0.3300	0.4700	0.5500	0.4300
citric_acid	0.3900	0.250	0.6500	0.5900	0.4700	0.1700	0.3900
residual_sugar	2.2000	2.500	7.5000	2.8000	2.4000	2.9000	2.2000
chlorides	0.1060	0.104	0.0960	0.0790	0.0740	0.0870	0.1060
free_sulfur_dioxide	8.0000	35.000	22.0000	9.0000	7.0000	20.0000	8.0000
total_sulfur_dioxide	32.0000	155.000	71.0000	30.0000	29.0000	53.0000	32.0000
density	0.9986	1.001	0.9976	0.9976	0.9979	1.0004	0.9986
pH	2.8900	3.410	2.9800	3.1200	3.0800	3.1400	2.8900
sulphates	0.5000	0.670	0.8400	0.5400	0.4600	0.6100	0.5000
alcohol	9.6000	11.200	14.9000	12.0000	9.5000	9.4000	9.6000
quality	5.0000	5.000	5.0000	6.0000	5.0000	5.0000	5.0000
	658	659	660	661	662	663	664

fixed_acidity	12.000	7.2000	7.100	7.2000	7.5000	7.2000	10.1000
volatile_acidity	0.500	0.5200	0.840	0.5200	0.4200	0.5700	0.2800
citric_acid	0.590	0.0700	0.020	0.0700	0.3100	0.0600	0.4600
residual_sugar	1.400	1.4000	4.400	1.4000	1.6000	1.6000	1.8000
chlorides	0.073	0.0740	0.096	0.0740	0.0800	0.0760	0.0500
free_sulfur_dioxide	23.000	5.0000	5.000	5.0000	15.0000	9.0000	5.0000
total_sulfur_dioxide	42.000	20.0000	13.000	20.0000	42.0000	27.0000	13.0000
density	0.998	0.9973	0.997	0.9973	0.9978	0.9972	0.9974
pH	2.920	3.3200	3.410	3.3200	3.3100	3.3600	3.0400
sulphates	0.680	0.8100	0.570	0.8100	0.6400	0.7000	0.7900
alcohol	10.500	9.6000	11.000	9.6000	9.0000	9.6000	10.2000
quality	7.000	6.0000	4.000	6.0000	5.0000	6.0000	6.0000
	665	666	667	668	669	670	671
fixed_acidity	12.100	9.4000	8.300	11.3000	10.0000	11.3000	6.9000
volatile_acidity	0.400	0.5900	0.490	0.3400	0.7300	0.3400	0.4000
citric_acid	0.520	0.1400	0.360	0.4500	0.4300	0.4500	0.2400
residual_sugar	2.000	2.0000	1.800	2.0000	2.3000	2.0000	2.5000
chlorides	0.092	0.0840	0.222	0.0820	0.0590	0.0820	0.0830
free_sulfur_dioxide	15.000	25.0000	6.000	6.0000	15.0000	6.0000	30.0000
total_sulfur_dioxide	54.000	48.0000	16.000	15.0000	31.0000	15.0000	45.0000
density	1.000	0.9981	0.998	0.9988	0.9966	0.9988	0.9959
pH	3.030	3.1400	3.180	2.9400	3.1500	2.9400	3.2600
sulphates	0.660	0.5600	0.600	0.6600	0.5700	0.6600	0.5800
alcohol	10.200	9.7000	9.500	9.2000	11.0000	9.2000	10.0000
quality	5.000	5.0000	6.000	6.0000	5.0000	6.0000	5.0000
	672	673	674	675	676	677	678
fixed_acidity	8.2000	9.800	8.2000	10.8000	9.3000	10.8000	8.6000
volatile_acidity	0.7300	1.240	0.7300	0.4000	0.4100	0.4000	0.8000
citric_acid	0.2100	0.340	0.2100	0.4100	0.3900	0.4100	0.1100
residual_sugar	1.7000	2.000	1.7000	2.2000	2.2000	2.2000	2.3000
chlorides	0.0740	0.079	0.0740	0.0840	0.0640	0.0840	0.0840
free_sulfur_dioxide	5.0000	32.000	5.0000	7.0000	12.0000	7.0000	12.0000
total_sulfur_dioxide	13.0000	151.000	13.0000	17.0000	31.0000	17.0000	31.0000
density	0.9968	0.998	0.9968	0.9984	0.9984	0.9984	0.9979
pH	3.2000	3.150	3.2000	3.0800	3.2600	3.0800	3.4000
sulphates	0.5200	0.530	0.5200	0.6700	0.6500	0.6700	0.4800
alcohol	9.5000	9.500	9.5000	9.3000	10.2000	9.3000	9.9000
quality	5.0000	5.000	5.0000	6.0000	5.0000	6.0000	5.0000
	679	680	681	682	683	684	685
fixed_acidity	8.3000	10.8000	13.3000	8.0000	8.500	8.100	9.800
volatile_acidity	0.7800	0.2600	0.4300	0.4500	0.460	0.780	0.980
citric_acid	0.1000	0.4500	0.5800	0.2300	0.310	0.230	0.320
residual_sugar	2.6000	3.3000	1.9000	2.2000	2.250	2.600	2.300
chlorides	0.0810	0.0600	0.0700	0.0940	0.078	0.059	0.078
free_sulfur_dioxide	45.0000	20.0000	15.0000	16.0000	32.000	5.000	35.000

total_sulfur_dioxide	87.0000	49.0000	40.0000	29.0000	58.000	15.000	152.000
density	0.9983	0.9972	1.0004	0.9962	0.998	0.997	0.998
pH	3.4800	3.1300	3.0600	3.2100	3.330	3.370	3.250
sulphates	0.5300	0.5400	0.4900	0.4900	0.540	0.560	0.480
alcohol	10.0000	9.6000	9.0000	10.2000	9.800	11.300	9.400
quality	5.0000	5.0000	5.0000	6.0000	5.000	5.000	5.000
	686	687	688	689	690	691	692
fixed_acidity	8.100	7.100	9.1000	7.7000	8.1000	7.4000	9.2000
volatile_acidity	0.780	0.650	0.6400	0.6600	0.3800	1.1850	0.9200
citric_acid	0.230	0.180	0.2300	0.0400	0.4800	0.0000	0.2400
residual_sugar	2.600	1.800	3.1000	1.6000	1.8000	4.2500	2.6000
chlorides	0.059	0.070	0.0950	0.0390	0.1570	0.0970	0.0870
free_sulfur_dioxide	5.000	13.000	13.0000	4.0000	5.0000	5.0000	12.0000
total_sulfur_dioxide	15.000	40.000	38.0000	9.0000	17.0000	14.0000	93.0000
density	0.997	0.997	0.9998	0.9962	0.9976	0.9966	0.9998
pH	3.370	3.440	3.2800	3.4000	3.3000	3.6300	3.4800
sulphates	0.560	0.600	0.5900	0.4700	1.0500	0.5400	0.5400
alcohol	11.300	9.100	9.7000	9.4000	9.4000	10.7000	9.8000
quality	5.000	5.000	5.0000	5.0000	5.0000	3.0000	5.0000
	693	694	695	696	697	698	699
fixed_acidity	8.6000	9.0000	9.0000	5.1000	7.0000	7.0000	9.4000
volatile_acidity	0.4900	0.4800	0.4700	0.4700	0.6500	0.6500	0.6150
citric_acid	0.5100	0.3200	0.3100	0.0200	0.0200	0.0200	0.2800
residual_sugar	2.0000	2.8000	2.7000	1.3000	2.1000	2.1000	3.2000
chlorides	0.4220	0.0840	0.0840	0.0340	0.0660	0.0660	0.0870
free_sulfur_dioxide	16.0000	21.0000	24.0000	18.0000	8.0000	8.0000	18.0000
total_sulfur_dioxide	62.0000	122.0000	125.0000	44.0000	25.0000	25.0000	72.0000
density	0.9979	0.9984	0.9984	0.9921	0.9972	0.9972	1.0001
pH	3.0300	3.3200	3.3100	3.9000	3.4700	3.4700	3.3100
sulphates	1.1700	0.6200	0.6100	0.6200	0.6700	0.6700	0.5300
alcohol	9.0000	9.4000	9.4000	12.8000	9.5000	9.5000	9.7000
quality	5.0000	5.0000	5.0000	6.0000	6.0000	6.0000	5.0000
	700	701	702	703	704	705	706
fixed_acidity	11.8000	10.6000	7.0000	7.000	7.5000	9.100	8.400
volatile_acidity	0.3800	1.0200	0.6500	0.640	0.3800	0.765	1.035
citric_acid	0.5500	0.4300	0.0200	0.020	0.4800	0.040	0.150
residual_sugar	2.1000	2.9000	2.1000	2.100	2.6000	1.600	6.000
chlorides	0.0710	0.0760	0.0660	0.067	0.0730	0.078	0.073
free_sulfur_dioxide	5.0000	26.0000	8.0000	9.000	22.0000	4.000	11.000
total_sulfur_dioxide	19.0000	88.0000	25.0000	23.000	84.0000	14.000	54.000
density	0.9986	0.9984	0.9972	0.997	0.9972	0.998	0.999
pH	3.1100	3.0800	3.4700	3.470	3.3200	3.290	3.370
sulphates	0.6200	0.5700	0.6700	0.670	0.7000	0.540	0.490
alcohol	10.8000	10.1000	9.5000	9.400	9.6000	9.700	9.900
quality	6.0000	6.0000	6.0000	6.000	4.0000	4.000	5.000

## Midterm\_WineQuality

	707	708	709	710	711	712	713
fixed_acidity	7.0000	7.4000	7.800	9.7000	10.6000	8.9000	8.7000
volatile_acidity	0.7800	0.4900	0.545	0.3100	1.0250	0.5650	0.6900
citric_acid	0.0800	0.1900	0.120	0.4700	0.4300	0.3400	0.0000
residual_sugar	2.0000	3.0000	2.500	1.6000	2.8000	3.0000	3.2000
chlorides	0.0930	0.0770	0.068	0.0620	0.0800	0.0930	0.0840
free_sulfur_dioxide	10.0000	16.0000	11.000	13.0000	21.0000	16.0000	13.0000
total_sulfur_dioxide	19.0000	37.0000	35.000	33.0000	84.0000	112.0000	33.0000
density	0.9956	0.9966	0.996	0.9983	0.9985	0.9998	0.9992
pH	3.4000	3.3700	3.340	3.2700	3.0600	3.3800	3.3600
sulphates	0.4700	0.5100	0.610	0.6600	0.5700	0.6100	0.4500
alcohol	10.0000	10.5000	11.600	10.0000	10.1000	9.5000	9.4000
quality	5.0000	5.0000	6.000	6.0000	5.0000	5.0000	5.0000
	714	715	716	717	718	719	720
fixed_acidity	8.0000	9.900	7.2000	8.0000	7.6000	8.4000	7.1000
volatile_acidity	0.4300	0.740	0.4900	0.4300	0.4600	0.5600	0.6600
citric_acid	0.3600	0.280	0.1800	0.3600	0.1100	0.0400	0.0000
residual_sugar	2.3000	2.600	2.7000	2.3000	2.6000	2.0000	3.9000
chlorides	0.0750	0.078	0.0690	0.0750	0.0790	0.0820	0.0860
free_sulfur_dioxide	10.0000	21.000	13.0000	10.0000	12.0000	10.0000	17.0000
total_sulfur_dioxide	48.0000	77.000	34.0000	48.0000	49.0000	22.0000	45.0000
density	0.9976	0.998	0.9967	0.9976	0.9968	0.9976	0.9976
pH	3.3400	3.280	3.2900	3.3400	3.2100	3.2200	3.4600
sulphates	0.4600	0.510	0.4800	0.4600	0.5700	0.4400	0.5400
alcohol	9.4000	9.800	9.2000	9.4000	10.0000	9.6000	9.5000
quality	5.0000	5.000	6.0000	5.0000	5.0000	5.0000	5.0000
	721	722	723	724	725	726	727
fixed_acidity	8.4000	8.9000	7.6000	7.1000	7.5000	9.0000	8.1000
volatile_acidity	0.5600	0.4800	0.4200	0.3100	1.1150	0.6600	0.7200
citric_acid	0.0400	0.2400	0.0800	0.3000	0.1000	0.1700	0.0900
residual_sugar	2.0000	2.8500	2.7000	2.2000	3.1000	3.0000	2.8000
chlorides	0.0820	0.0940	0.0840	0.0530	0.0860	0.0770	0.0840
free_sulfur_dioxide	10.0000	35.0000	15.0000	36.0000	5.0000	5.0000	18.0000
total_sulfur_dioxide	22.0000	106.0000	48.0000	127.0000	12.0000	13.0000	49.0000
density	0.9976	0.9982	0.9968	0.9965	0.9958	0.9976	0.9994
pH	3.2200	3.1000	3.2100	2.9400	3.5400	3.2900	3.4300
sulphates	0.4400	0.5300	0.5900	1.6200	0.6000	0.5500	0.7200
alcohol	9.6000	9.2000	10.0000	9.5000	11.2000	10.4000	11.1000
quality	5.0000	5.0000	5.0000	5.0000	4.0000	5.0000	6.0000
	728	729	730	731	732	733	734
fixed_acidity	6.400	6.400	6.400	9.5000	8.9000	7.3000	7.000
volatile_acidity	0.570	0.570	0.865	0.5500	0.8750	0.8350	0.450
citric_acid	0.020	0.020	0.030	0.6600	0.1300	0.0300	0.340
residual_sugar	1.800	1.800	3.200	2.3000	3.4500	2.1000	2.700
chlorides	0.067	0.067	0.071	0.3870	0.0880	0.0920	0.082

free_sulfur_dioxide	4.000	4.000	27.000	12.0000	4.0000	10.0000	16.000
total_sulfur_dioxide	11.000	11.000	58.000	37.0000	14.0000	19.0000	72.000
density	0.997	0.997	0.995	0.9982	0.9994	0.9966	0.998
pH	3.460	3.460	3.610	3.1700	3.4400	3.3900	3.550
sulphates	0.680	0.680	0.490	0.6700	0.5200	0.4700	0.600
alcohol	9.500	9.500	12.700	9.6000	11.5000	9.6000	9.500
quality	5.000	5.000	6.000	5.0000	5.0000	5.0000	5.000
	735	736	737	738	739	740	741
fixed_acidity	7.7000	7.7000	7.7000	8.2000	9.0000	9.000	8.3000
volatile_acidity	0.5600	0.9650	0.9650	0.5900	0.4600	0.690	0.7600
citric_acid	0.2000	0.1000	0.1000	0.0000	0.2300	0.000	0.2900
residual_sugar	2.0000	2.1000	2.1000	2.5000	2.8000	2.400	4.2000
chlorides	0.0750	0.1120	0.1120	0.0930	0.0920	0.088	0.0750
free_sulfur_dioxide	9.0000	11.0000	11.0000	19.0000	28.0000	19.000	12.0000
total_sulfur_dioxide	39.0000	22.0000	22.0000	58.0000	104.0000	38.000	16.0000
density	0.9987	0.9963	0.9963	1.0002	0.9983	0.999	0.9965
pH	3.4800	3.2600	3.2600	3.5000	3.1000	3.350	3.4500
sulphates	0.6200	0.5000	0.5000	0.6500	0.5600	0.600	0.6800
alcohol	9.3000	9.5000	9.5000	9.3000	9.2000	9.300	11.5000
quality	5.0000	5.0000	5.0000	6.0000	5.0000	5.000	6.0000
	742	743	744	745	746	747	
fixed_acidity	9.20000	6.5000	11.60000	11.1000	7.30000	8.2000	
volatile_acidity	0.53000	0.6150	0.41000	0.3900	0.51000	0.3400	
citric_acid	0.24000	0.0000	0.58000	0.5400	0.18000	0.3800	
residual_sugar	2.60000	1.9000	2.80000	2.7000	2.10000	2.5000	
chlorides	0.07800	0.0650	0.09600	0.0950	0.07000	0.0800	
free_sulfur_dioxide	28.00000	9.0000	25.00000	21.0000	12.00000	12.0000	
total_sulfur_dioxide	139.00000	18.0000	101.00000	101.0000	28.00000	57.0000	
density	0.99788	0.9972	1.00024	1.0001	0.99768	0.9978	
pH	3.21000	3.4600	3.13000	3.1300	3.52000	3.3000	
sulphates	0.57000	0.6500	0.53000	0.5100	0.73000	0.4700	
alcohol	9.50000	9.2000	10.00000	9.5000	9.50000	9.0000	
quality	5.00000	5.0000	5.00000	5.0000	6.00000	6.0000	
	748	749	750	751	752	753	
fixed_acidity	8.60000	7.20000	7.30000	8.30000	8.30000	7.60000	
volatile_acidity	0.33000	0.50000	0.51000	0.65000	0.65000	0.54000	
citric_acid	0.40000	0.18000	0.18000	0.10000	0.10000	0.13000	
residual_sugar	2.60000	2.10000	2.10000	2.90000	2.90000	2.50000	
chlorides	0.08300	0.07100	0.07000	0.08900	0.08900	0.09700	
free_sulfur_dioxide	16.00000	12.00000	12.00000	17.00000	17.00000	24.00000	
total_sulfur_dioxide	68.00000	31.00000	28.00000	40.00000	40.00000	66.00000	
density	0.99782	0.99761	0.99768	0.99803	0.99803	0.99785	
pH	3.30000	3.52000	3.52000	3.29000	3.29000	3.39000	
sulphates	0.48000	0.72000	0.73000	0.55000	0.55000	0.61000	
alcohol	9.40000	9.60000	9.50000	9.50000	9.50000	9.40000	

quality	5.00000	6.00000	6.00000	5.00000	5.00000	5.00000
	754	755	756	757	758	759
fixed_acidity	8.30000	7.80000	7.80000	6.30000	8.10000	8.10000
volatile_acidity	0.65000	0.48000	0.91000	0.98000	0.87000	0.87000
citric_acid	0.10000	0.68000	0.07000	0.01000	0.00000	0.00000
residual_sugar	2.90000	1.70000	1.90000	2.00000	2.20000	2.20000
chlorides	0.08900	0.41500	0.05800	0.05700	0.08400	0.08400
free_sulfur_dioxide	17.00000	14.00000	22.00000	15.00000	10.00000	10.00000
total_sulfur_dioxide	40.00000	32.00000	47.00000	33.00000	31.00000	31.00000
density	0.99803	0.99656	0.99525	0.99488	0.99656	0.99656
pH	3.29000	3.09000	3.51000	3.60000	3.25000	3.25000
sulphates	0.55000	1.06000	0.43000	0.46000	0.50000	0.50000
alcohol	9.50000	9.10000	10.70000	11.20000	9.80000	9.80000
quality	5.00000	6.00000	6.00000	6.00000	5.00000	5.00000
	760	761	762	763	764	765
fixed_acidity	8.80000	9.00000	9.30000	8.80000	9.30000	9.10000
volatile_acidity	0.42000	0.58000	0.65500	0.70000	0.65500	0.68000
citric_acid	0.21000	0.25000	0.26000	0.00000	0.26000	0.11000
residual_sugar	2.50000	2.80000	2.00000	1.70000	2.00000	2.80000
chlorides	0.09200	0.07500	0.09600	0.06900	0.09600	0.09300
free_sulfur_dioxide	33.00000	9.00000	5.00000	8.00000	5.00000	11.00000
total_sulfur_dioxide	88.00000	104.00000	35.00000	19.00000	35.00000	44.00000
density	0.99823	0.99779	0.99738	0.99701	0.99738	0.99888
pH	3.19000	3.23000	3.25000	3.31000	3.25000	3.31000
sulphates	0.52000	0.57000	0.42000	0.53000	0.42000	0.55000
alcohol	9.20000	9.70000	9.60000	10.00000	9.60000	9.50000
quality	5.00000	5.00000	5.00000	6.00000	5.00000	6.00000
	766	767	768	769	770	771
fixed_acidity	9.20000	8.80000	7.50000	7.10000	7.90000	7.10000
volatile_acidity	0.67000	0.59000	0.60000	0.59000	0.72000	0.59000
citric_acid	0.10000	0.18000	0.32000	0.02000	0.01000	0.02000
residual_sugar	3.00000	2.90000	2.70000	2.30000	1.90000	2.30000
chlorides	0.09100	0.08900	0.10300	0.08200	0.07600	0.08200
free_sulfur_dioxide	12.00000	12.00000	13.00000	24.00000	7.00000	24.00000
total_sulfur_dioxide	48.00000	74.00000	98.00000	94.00000	32.00000	94.00000
density	0.99888	0.99738	0.99938	0.99744	0.99668	0.99744
pH	3.31000	3.14000	3.45000	3.55000	3.39000	3.55000
sulphates	0.54000	0.54000	0.62000	0.53000	0.54000	0.53000
alcohol	9.50000	9.40000	9.50000	9.70000	9.60000	9.70000
quality	6.00000	5.00000	5.00000	6.00000	5.00000	6.00000
	772	773	774	775	776	777
fixed_acidity	9.4000	9.50000	7.9000	7.90000	7.20000	6.90000
volatile_acidity	0.6850	0.57000	0.4000	0.40000	1.00000	0.76500
citric_acid	0.2600	0.27000	0.2900	0.30000	0.00000	0.18000
residual_sugar	2.4000	2.30000	1.8000	1.80000	3.00000	2.40000

chlorides	0.0820	0.08200	0.1570	0.15700	0.10200	0.24300
free_sulfur_dioxide	23.0000	23.00000	1.0000	2.00000	7.00000	5.50000
total_sulfur_dioxide	143.0000	144.00000	44.0000	45.00000	16.00000	48.00000
density	0.9978	0.99782	0.9973	0.99727	0.99586	0.99612
pH	3.2800	3.27000	3.3000	3.31000	3.43000	3.40000
sulphates	0.5500	0.55000	0.9200	0.91000	0.46000	0.60000
alcohol	9.4000	9.40000	9.5000	9.50000	10.00000	10.30000
quality	5.0000	5.00000	6.0000	6.00000	5.00000	6.00000
	778	779	780	781	782	783
fixed_acidity	6.9000	8.30000	7.10000	7.00000	6.50000	9.00000
volatile_acidity	0.6350	0.43000	0.52000	0.57000	0.46000	0.82000
citric_acid	0.1700	0.30000	0.03000	0.00000	0.14000	0.05000
residual_sugar	2.4000	3.40000	2.60000	2.00000	2.40000	2.40000
chlorides	0.2410	0.07900	0.07600	0.19000	0.11400	0.08100
free_sulfur_dioxide	6.0000	7.00000	21.00000	12.00000	9.00000	26.00000
total_sulfur_dioxide	18.0000	34.00000	92.00000	45.00000	37.00000	96.00000
density	0.9961	0.99788	0.99745	0.99676	0.99732	0.99814
pH	3.4000	3.36000	3.50000	3.31000	3.66000	3.36000
sulphates	0.5900	0.61000	0.60000	0.60000	0.65000	0.53000
alcohol	10.3000	10.50000	9.80000	9.40000	9.80000	10.00000
quality	6.0000	5.00000	5.00000	6.00000	5.00000	5.00000
	784	785	786	787	788	789
fixed_acidity	6.50000	7.10000	9.9000	9.9000	10.0000	10.0000
volatile_acidity	0.46000	0.59000	0.3500	0.3500	0.5600	0.5600
citric_acid	0.14000	0.01000	0.4100	0.4100	0.2400	0.2400
residual_sugar	2.40000	2.50000	2.3000	2.3000	2.2000	2.2000
chlorides	0.11400	0.07700	0.0830	0.0830	0.0790	0.0790
free_sulfur_dioxide	9.00000	20.00000	11.0000	11.0000	19.0000	19.0000
total_sulfur_dioxide	37.00000	85.00000	61.0000	61.0000	58.0000	58.0000
density	0.99732	0.99746	0.9982	0.9982	0.9991	0.9991
pH	3.66000	3.55000	3.2100	3.2100	3.1800	3.1800
sulphates	0.65000	0.59000	0.5000	0.5000	0.5600	0.5600
alcohol	9.80000	9.80000	9.5000	9.5000	10.1000	10.1000
quality	5.00000	5.00000	5.0000	5.0000	6.0000	5.0000
	791	792	793	794	795	796
fixed_acidity	7.40000	8.80000	7.10000	7.70000	10.10000	10.80000
volatile_acidity	0.37000	0.64000	0.61000	0.60000	0.27000	0.89000
citric_acid	0.43000	0.17000	0.02000	0.00000	0.54000	0.30000
residual_sugar	2.60000	2.90000	2.50000	2.60000	2.30000	2.60000
chlorides	0.08200	0.08400	0.08100	0.05500	0.06500	0.13200
free_sulfur_dioxide	18.00000	25.00000	17.00000	7.00000	7.00000	7.00000
total_sulfur_dioxide	82.00000	130.00000	87.00000	13.00000	26.00000	60.00000
density	0.99708	0.99818	0.99745	0.99639	0.99531	0.99786
pH	3.33000	3.23000	3.48000	3.38000	3.17000	2.99000
sulphates	0.68000	0.54000	0.60000	0.56000	0.53000	1.18000

alcohol	9.70000	9.60000	9.70000	10.80000	12.50000	10.20000
quality	6.00000	5.00000	6.00000	5.00000	6.00000	5.00000
	797	798	799	800	801	802
fixed_acidity	8.70000	9.30000	9.40000	9.40000	7.20000	8.60000
volatile_acidity	0.46000	0.37000	0.50000	0.50000	0.61000	0.55000
citric_acid	0.31000	0.44000	0.3400	0.3400	0.08000	0.09000
residual_sugar	2.50000	1.60000	3.6000	3.6000	4.00000	3.30000
chlorides	0.12600	0.03800	0.0820	0.0820	0.08200	0.06800
free_sulfur_dioxide	24.00000	21.00000	5.0000	5.0000	26.00000	8.00000
total_sulfur_dioxide	64.00000	42.00000	14.0000	14.0000	108.00000	17.00000
density	0.99746	0.99526	0.9987	0.9987	0.99641	0.99735
pH	3.10000	3.24000	3.2900	3.2900	3.25000	3.23000
sulphates	0.74000	0.81000	0.5200	0.5200	0.51000	0.44000
alcohol	9.60000	10.80000	10.7000	10.7000	9.40000	10.00000
quality	5.00000	7.00000	6.0000	6.0000	5.00000	5.00000
	803	804	805	806	807	808
fixed_acidity	5.10000	7.7000	8.40000	8.20000	8.40000	8.20000
volatile_acidity	0.58500	0.5600	0.52000	0.28000	0.25000	0.28000
citric_acid	0.00000	0.0800	0.22000	0.40000	0.39000	0.40000
residual_sugar	1.70000	2.5000	2.70000	2.40000	2.00000	2.40000
chlorides	0.04400	0.1140	0.08400	0.05200	0.04100	0.05200
free_sulfur_dioxide	14.00000	14.0000	4.00000	4.00000	4.00000	4.00000
total_sulfur_dioxide	86.00000	46.0000	18.00000	10.00000	10.00000	10.00000
density	0.99264	0.9971	0.99682	0.99356	0.99386	0.99356
pH	3.56000	3.2400	3.26000	3.33000	3.27000	3.33000
sulphates	0.94000	0.6600	0.57000	0.70000	0.71000	0.70000
alcohol	12.90000	9.6000	9.90000	12.80000	12.50000	12.80000
quality	7.00000	6.0000	6.00000	7.00000	7.00000	7.00000
	809	810	811	812	813	814
fixed_acidity	7.40000	7.60000	7.30000	12.90000	10.80000	6.90000
volatile_acidity	0.53000	0.48000	0.49000	0.50000	0.45000	0.39000
citric_acid	0.12000	0.31000	0.10000	0.55000	0.33000	0.24000
residual_sugar	1.90000	2.80000	2.60000	2.80000	2.50000	2.10000
chlorides	0.16500	0.07000	0.06800	0.07200	0.09900	0.10200
free_sulfur_dioxide	4.00000	4.00000	4.00000	7.00000	20.00000	4.00000
total_sulfur_dioxide	12.00000	15.00000	14.00000	24.00000	38.00000	7.00000
density	0.99702	0.99693	0.99562	1.00012	0.99818	0.99462
pH	3.26000	3.22000	3.30000	3.09000	3.24000	3.44000
sulphates	0.86000	0.55000	0.47000	0.68000	0.71000	0.58000
alcohol	9.20000	10.30000	10.50000	10.90000	10.80000	11.40000
quality	5.00000	6.00000	5.00000	6.00000	5.00000	4.00000
	815	816	817	818	819	820
fixed_acidity	12.60000	10.80000	9.8000	10.80000	7.10000	9.10000
volatile_acidity	0.41000	0.45000	0.5100	0.29000	0.71500	0.66000
citric_acid	0.54000	0.33000	0.1900	0.42000	0.00000	0.15000

residual_sugar	2.80000	2.50000	3.2000	1.60000	2.35000	3.20000
chlorides	0.10300	0.09900	0.0810	0.08400	0.07100	0.09700
free_sulfur_dioxide	19.00000	20.00000	8.0000	19.00000	21.00000	9.00000
total_sulfur_dioxide	41.00000	38.00000	30.0000	27.00000	47.00000	59.00000
density	0.99939	0.99818	0.9984	0.99545	0.99632	0.99976
pH	3.21000	3.24000	3.2300	3.28000	3.29000	3.28000
sulphates	0.76000	0.71000	0.5800	0.73000	0.45000	0.54000
alcohol	11.30000	10.80000	10.5000	11.90000	9.40000	9.60000
quality	6.00000	5.00000	6.0000	6.00000	5.00000	5.00000
	821	822	823	824	825	826
fixed_acidity	7.00000	4.90000	6.7000	6.7000	7.10000	7.10000
volatile_acidity	0.68500	0.42000	0.5400	0.5400	0.48000	0.46000
citric_acid	0.00000	0.00000	0.1300	0.1300	0.28000	0.14000
residual_sugar	1.90000	2.10000	2.0000	2.0000	2.80000	2.80000
chlorides	0.09900	0.04800	0.0760	0.0760	0.06800	0.07600
free_sulfur_dioxide	9.00000	16.00000	15.0000	15.0000	6.00000	15.00000
total_sulfur_dioxide	22.00000	42.00000	36.0000	36.0000	16.00000	37.00000
density	0.99606	0.99154	0.9973	0.9973	0.99682	0.99624
pH	3.34000	3.71000	3.6100	3.6100	3.24000	3.36000
sulphates	0.60000	0.74000	0.6400	0.6400	0.53000	0.49000
alcohol	9.70000	14.00000	9.8000	9.8000	10.30000	10.70000
quality	5.00000	7.00000	5.0000	5.0000	5.00000	5.00000
	827	828	829	830	831	832
fixed_acidity	7.5000	7.1000	7.80000	5.90000	7.50000	5.90000
volatile_acidity	0.2700	0.46000	0.57000	0.61000	0.68500	0.61000
citric_acid	0.3400	0.14000	0.09000	0.08000	0.07000	0.08000
residual_sugar	2.3000	2.80000	2.30000	2.10000	2.50000	2.10000
chlorides	0.0500	0.07600	0.06500	0.07100	0.05800	0.07100
free_sulfur_dioxide	4.0000	15.00000	34.00000	16.00000	5.00000	16.00000
total_sulfur_dioxide	8.0000	37.00000	45.00000	24.00000	9.00000	24.00000
density	0.9951	0.99624	0.99417	0.99376	0.99632	0.99376
pH	3.4000	3.36000	3.46000	3.56000	3.38000	3.56000
sulphates	0.6400	0.49000	0.74000	0.77000	0.55000	0.77000
alcohol	11.0000	10.70000	12.70000	11.10000	10.90000	11.10000
quality	7.0000	5.00000	8.00000	6.00000	4.00000	6.00000
	833	834	835	836	837	838
fixed_acidity	10.40000	11.60000	8.80000	7.60000	6.70000	6.70000
volatile_acidity	0.44000	0.47000	0.68500	0.66500	0.28000	0.28000
citric_acid	0.42000	0.44000	0.26000	0.10000	0.28000	0.28000
residual_sugar	1.50000	1.60000	1.60000	1.50000	2.40000	2.40000
chlorides	0.14500	0.14700	0.08800	0.06600	0.01200	0.01200
free_sulfur_dioxide	34.00000	36.00000	16.00000	27.00000	36.00000	36.00000
total_sulfur_dioxide	48.00000	51.00000	23.00000	55.00000	100.00000	100.00000
density	0.99832	0.99836	0.99694	0.99655	0.99064	0.99064
pH	3.38000	3.38000	3.32000	3.39000	3.26000	3.26000

sulphates	0.86000	0.86000	0.47000	0.51000	0.39000	0.39000
alcohol	9.90000	9.90000	9.40000	9.30000	11.70000	11.70000
quality	3.00000	4.00000	5.00000	5.00000	7.00000	7.00000
	839	840	841	842	843	844
fixed_acidity	10.10000	6.00000	11.10000	6.60000	10.60000	7.1000
volatile_acidity	0.31000	0.50000	0.42000	0.66000	0.50000	0.6850
citric_acid	0.35000	0.04000	0.47000	0.00000	0.45000	0.3500
residual_sugar	1.60000	2.20000	2.65000	3.00000	2.60000	2.0000
chlorides	0.07500	0.09200	0.08500	0.11500	0.11900	0.0880
free_sulfur_dioxide	9.00000	13.00000	9.00000	21.00000	34.00000	9.0000
total_sulfur_dioxide	28.00000	26.00000	34.00000	31.00000	68.00000	92.0000
density	0.99672	0.99647	0.99736	0.99629	0.99708	0.9963
pH	3.24000	3.46000	3.24000	3.45000	3.23000	3.2800
sulphates	0.83000	0.47000	0.77000	0.63000	0.72000	0.6200
alcohol	11.20000	10.00000	12.10000	10.30000	10.90000	9.4000
quality	7.00000	5.00000	7.00000	5.00000	6.00000	5.0000
	845	846	847	848	849	850
fixed_acidity	9.9000	6.40000	6.40000	7.4000	6.40000	6.40000
volatile_acidity	0.2500	0.64000	0.64000	0.6800	0.64000	0.63000
citric_acid	0.4600	0.21000	0.21000	0.1600	0.21000	0.21000
residual_sugar	1.7000	1.80000	1.80000	1.8000	1.80000	1.60000
chlorides	0.0620	0.08100	0.08100	0.0780	0.08100	0.08000
free_sulfur_dioxide	26.0000	14.00000	14.00000	12.0000	14.00000	12.00000
total_sulfur_dioxide	42.0000	31.00000	31.00000	39.0000	31.00000	32.00000
density	0.9959	0.99689	0.99689	0.9977	0.99689	0.99689
pH	3.1800	3.59000	3.59000	3.5000	3.59000	3.58000
sulphates	0.8300	0.66000	0.66000	0.7000	0.66000	0.66000
alcohol	10.6000	9.80000	9.80000	9.9000	9.80000	9.80000
quality	6.0000	5.00000	5.00000	6.0000	5.00000	5.00000
	851	852	853	854	855	856
fixed_acidity	9.30000	9.30000	8.00000	9.30000	9.30000	7.60000
volatile_acidity	0.43000	0.43000	0.42000	0.36000	0.36000	0.73500
citric_acid	0.44000	0.44000	0.32000	0.39000	0.39000	0.02000
residual_sugar	1.90000	1.90000	2.50000	1.50000	1.50000	2.50000
chlorides	0.08500	0.08500	0.08000	0.08000	0.08000	0.07100
free_sulfur_dioxide	9.00000	9.00000	26.00000	41.00000	41.00000	10.00000
total_sulfur_dioxide	22.00000	22.00000	122.00000	55.00000	55.00000	14.00000
density	0.99708	0.99708	0.99801	0.99652	0.99652	0.99538
pH	3.28000	3.28000	3.22000	3.47000	3.47000	3.51000
sulphates	0.55000	0.55000	1.07000	0.73000	0.73000	0.71000
alcohol	9.50000	9.50000	9.70000	10.90000	10.90000	11.70000
quality	5.00000	5.00000	5.00000	6.00000	6.00000	7.00000
	857	858	859	860	861	862
fixed_acidity	9.30000	8.20000	11.70000	6.80000	7.20000	5.80000
volatile_acidity	0.36000	0.26000	0.28000	0.56000	0.62000	1.01000

citric_acid	0.39000	0.34000	0.47000	0.22000	0.06000	0.66000
residual_sugar	1.50000	2.50000	1.70000	1.80000	2.70000	2.00000
chlorides	0.08000	0.07300	0.05400	0.07400	0.07700	0.03900
free_sulfur_dioxide	41.00000	16.00000	17.00000	15.00000	15.00000	15.00000
total_sulfur_dioxide	55.00000	47.00000	32.00000	24.00000	85.00000	88.00000
density	0.99652	0.99594	0.99686	0.99438	0.99746	0.99357
pH	3.47000	3.40000	3.15000	3.40000	3.51000	3.66000
sulphates	0.73000	0.78000	0.67000	0.82000	0.54000	0.60000
alcohol	10.90000	11.30000	10.60000	11.20000	9.50000	11.50000
quality	6.00000	7.00000	7.00000	6.00000	5.00000	6.00000
	863	864	865	866	867	868
fixed_acidity	7.50000	7.20000	7.20000	7.20000	6.80000	6.90000
volatile_acidity	0.42000	0.62000	0.62000	0.63500	0.49000	0.51000
citric_acid	0.32000	0.06000	0.06000	0.07000	0.22000	0.23000
residual_sugar	2.70000	2.50000	2.70000	2.60000	2.30000	2.00000
chlorides	0.06700	0.07800	0.07700	0.07700	0.07100	0.07200
free_sulfur_dioxide	7.00000	17.00000	15.00000	16.00000	13.00000	13.00000
total_sulfur_dioxide	25.00000	84.00000	85.00000	86.00000	24.00000	22.00000
density	0.99628	0.99746	0.99746	0.99748	0.99438	0.99438
pH	3.24000	3.51000	3.51000	3.51000	3.41000	3.40000
sulphates	0.44000	0.53000	0.54000	0.54000	0.83000	0.84000
alcohol	10.40000	9.70000	9.50000	9.70000	11.30000	11.20000
quality	5.00000	5.00000	5.00000	5.00000	6.00000	6.00000
	869	870	871	872	873	874
fixed_acidity	6.80000	7.60000	7.70000	6.90000	7.30000	9.10000
volatile_acidity	0.56000	0.63000	0.71500	0.56000	0.35000	0.21000
citric_acid	0.22000	0.03000	0.01000	0.03000	0.24000	0.37000
residual_sugar	1.80000	2.00000	2.10000	1.50000	2.00000	1.60000
chlorides	0.07400	0.08000	0.06400	0.08600	0.06700	0.06700
free_sulfur_dioxide	15.00000	27.00000	31.00000	36.00000	28.00000	6.00000
total_sulfur_dioxide	24.00000	43.00000	43.00000	46.00000	48.00000	10.00000
density	0.99438	0.99578	0.99371	0.99522	0.99576	0.99552
pH	3.40000	3.44000	3.41000	3.53000	3.43000	3.23000
sulphates	0.82000	0.64000	0.57000	0.57000	0.54000	0.58000
alcohol	11.20000	10.90000	11.80000	10.60000	10.00000	11.10000
quality	6.00000	6.00000	6.00000	5.00000	4.00000	7.00000
	875	876	877	878	879	880
fixed_acidity	10.40000	8.80000	7.10000	7.70000	8.80000	7.20000
volatile_acidity	0.38000	0.31000	0.47000	0.71500	0.61000	0.60000
citric_acid	0.46000	0.40000	0.00000	0.01000	0.19000	0.04000
residual_sugar	2.10000	2.80000	2.20000	2.10000	4.00000	2.50000
chlorides	0.10400	0.10900	0.06700	0.06400	0.09400	0.07600
free_sulfur_dioxide	6.00000	7.00000	7.00000	31.00000	30.00000	18.00000
total_sulfur_dioxide	10.00000	16.00000	14.00000	43.00000	69.00000	88.00000
density	0.99664	0.99614	0.99517	0.99371	0.99787	0.99745

pH	3.12000	3.31000	3.40000	3.41000	3.22000	3.53000
sulphates	0.65000	0.79000	0.58000	0.57000	0.50000	0.55000
alcohol	11.80000	11.80000	10.90000	11.80000	10.00000	9.50000
quality	7.00000	7.00000	4.00000	6.00000	6.00000	5.00000
	881	882	883	884	885	886
fixed_acidity	9.20000	7.60000	8.40000	7.20000	8.80000	8.90000
volatile_acidity	0.56000	0.71500	0.31000	0.60000	0.61000	0.75000
citric_acid	0.18000	0.00000	0.29000	0.04000	0.19000	0.14000
residual_sugar	1.60000	2.10000	3.10000	2.50000	4.00000	2.50000
chlorides	0.07800	0.06800	0.19400	0.07600	0.09400	0.08600
free_sulfur_dioxide	10.00000	30.00000	14.00000	18.00000	30.00000	9.00000
total_sulfur_dioxide	21.00000	35.00000	26.00000	88.00000	69.00000	30.00000
density	0.99576	0.99533	0.99536	0.99745	0.99787	0.99824
pH	3.15000	3.48000	3.22000	3.53000	3.22000	3.34000
sulphates	0.49000	0.65000	0.78000	0.55000	0.50000	0.64000
alcohol	9.90000	11.40000	12.00000	9.50000	10.00000	10.50000
quality	5.00000	6.00000	6.00000	5.00000	6.00000	5.00000
	887	888	889	890	891	892
fixed_acidity	9.00000	10.70000	6.80000	10.70000	7.20000	7.20000
volatile_acidity	0.80000	0.52000	0.57000	0.90000	0.34000	0.66000
citric_acid	0.12000	0.38000	0.00000	0.34000	0.24000	0.03000
residual_sugar	2.40000	2.60000	2.50000	6.60000	2.00000	2.30000
chlorides	0.08300	0.06600	0.07200	0.11200	0.07100	0.07800
free_sulfur_dioxide	8.00000	29.00000	32.00000	23.00000	30.00000	16.00000
total_sulfur_dioxide	28.00000	56.00000	64.00000	99.00000	52.00000	86.00000
density	0.99836	0.99577	0.99491	1.00289	0.99576	0.99743
pH	3.33000	3.15000	3.43000	3.22000	3.44000	3.53000
sulphates	0.65000	0.79000	0.56000	0.68000	0.58000	0.57000
alcohol	10.40000	12.10000	11.20000	9.30000	10.10000	9.70000
quality	6.00000	7.00000	6.00000	5.00000	5.00000	5.00000
	893	894	895	896	897	898
fixed_acidity	10.10000	7.20000	7.20000	7.1000	8.30000	7.1000
volatile_acidity	0.45000	0.66000	0.63000	0.5900	0.31000	0.5900
citric_acid	0.23000	0.03000	0.03000	0.0100	0.39000	0.0100
residual_sugar	1.90000	2.30000	2.20000	2.3000	2.40000	2.3000
chlorides	0.08200	0.07800	0.08000	0.0800	0.07800	0.0800
free_sulfur_dioxide	10.00000	16.00000	17.00000	27.0000	17.00000	27.0000
total_sulfur_dioxide	18.00000	86.00000	88.00000	43.0000	43.00000	43.0000
density	0.99774	0.99743	0.99745	0.9955	0.99444	0.9955
pH	3.22000	3.53000	3.53000	3.4200	3.31000	3.4200
sulphates	0.65000	0.57000	0.58000	0.5800	0.77000	0.5800
alcohol	9.30000	9.70000	9.80000	10.7000	12.50000	10.7000
quality	6.00000	5.00000	6.00000	6.0000	7.00000	6.0000
	899	900	901	902	903	904
fixed_acidity	8.30000	8.30000	8.90000	7.40000	7.40000	6.8000

volatile_acidity	0.31000	1.02000	0.31000	0.63500	0.63500	0.5900
citric_acid	0.39000	0.02000	0.36000	0.10000	0.10000	0.0600
residual_sugar	2.40000	3.40000	2.60000	2.40000	2.40000	6.0000
chlorides	0.07800	0.08400	0.05600	0.08000	0.08000	0.0600
free_sulfur_dioxide	17.00000	6.00000	10.00000	16.00000	16.00000	11.0000
total_sulfur_dioxide	43.00000	11.00000	39.00000	33.00000	33.00000	18.0000
density	0.99444	0.99892	0.99562	0.99736	0.99736	0.9962
pH	3.31000	3.48000	3.40000	3.58000	3.58000	3.4100
sulphates	0.77000	0.49000	0.69000	0.69000	0.69000	0.5900
alcohol	12.50000	11.00000	11.80000	10.80000	10.80000	10.8000
quality	7.00000	3.00000	5.00000	7.00000	7.00000	7.0000
	905	906	907	908	909	910
						911
fixed_acidity	6.8000	9.200	7.2000	6.1000	7.40000	7.30000
volatile_acidity	0.5900	0.580	0.5400	0.5600	0.52000	0.30500
citric_acid	0.0600	0.200	0.2700	0.0000	0.13000	0.39000
residual_sugar	6.0000	3.000	2.6000	2.2000	2.40000	1.20000
chlorides	0.0600	0.081	0.0840	0.0790	0.07800	0.05900
free_sulfur_dioxide	11.0000	15.000	12.0000	6.0000	34.00000	7.00000
total_sulfur_dioxide	18.0000	115.000	78.0000	9.0000	61.00000	11.00000
density	0.9962	0.998	0.9964	0.9948	0.99528	0.99331
pH	3.4100	3.230	3.3900	3.5900	3.43000	3.29000
sulphates	0.5900	0.590	0.7100	0.5400	0.59000	0.52000
alcohol	10.8000	9.500	11.0000	11.5000	10.80000	11.50000
quality	7.0000	5.000	5.0000	6.0000	6.00000	6.00000
	912	913	914	915	916	917
fixed_acidity	9.10000	10.00000	9.40000	7.30000	8.60000	5.30000
volatile_acidity	0.28000	0.46000	0.39500	0.30500	0.31500	0.71500
citric_acid	0.46000	0.44000	0.46000	0.39000	0.40000	0.19000
residual_sugar	9.00000	2.90000	4.60000	1.20000	2.20000	1.50000
chlorides	0.11400	0.06500	0.09400	0.05900	0.07900	0.16100
free_sulfur_dioxide	3.00000	4.00000	3.00000	7.00000	3.00000	7.00000
total_sulfur_dioxide	9.00000	8.00000	10.00000	11.00000	6.00000	62.00000
density	0.99901	0.99674	0.99639	0.99331	0.99512	0.99395
pH	3.18000	3.33000	3.27000	3.29000	3.27000	3.62000
sulphates	0.60000	0.62000	0.64000	0.52000	0.67000	0.61000
alcohol	10.90000	12.20000	12.20000	11.50000	11.90000	11.00000
quality	6.00000	6.00000	7.00000	6.00000	6.00000	5.00000
	918	919	920	921	922	923
fixed_acidity	6.80000	8.4000	8.40000	9.60000	8.4000	8.40000
volatile_acidity	0.41000	0.3600	0.62000	0.41000	0.3600	0.62000
citric_acid	0.31000	0.3200	0.12000	0.37000	0.3200	0.12000
residual_sugar	8.80000	2.2000	1.80000	2.30000	2.2000	1.80000
chlorides	0.08400	0.0810	0.07200	0.09100	0.0810	0.07200
free_sulfur_dioxide	26.00000	32.0000	38.00000	10.00000	32.0000	38.00000
total_sulfur_dioxide	45.00000	79.0000	46.00000	23.00000	79.0000	46.00000

density	0.99824	0.9964	0.99504	0.99786	0.9964	0.99504
pH	3.38000	3.3000	3.38000	3.24000	3.3000	3.38000
sulphates	0.64000	0.7200	0.89000	0.56000	0.7200	0.89000
alcohol	10.10000	11.0000	11.80000	10.50000	11.0000	11.80000
quality	6.00000	6.0000	6.00000	5.00000	6.0000	6.00000
	924	925	926	927	928	929
fixed_acidity	6.80000	8.60000	8.60000	9.40000	8.40000	8.60000
volatile_acidity	0.41000	0.47000	0.22000	0.24000	0.67000	0.47000
citric_acid	0.31000	0.27000	0.36000	0.33000	0.19000	0.27000
residual_sugar	8.80000	2.30000	1.90000	2.30000	2.20000	2.30000
chlorides	0.08400	0.05500	0.06400	0.06100	0.09300	0.05500
free_sulfur_dioxide	26.00000	14.00000	53.00000	52.00000	11.00000	14.00000
total_sulfur_dioxide	45.00000	28.00000	77.00000	73.00000	75.00000	28.00000
density	0.99824	0.99516	0.99604	0.99786	0.99736	0.99516
pH	3.38000	3.18000	3.47000	3.47000	3.20000	3.18000
sulphates	0.64000	0.80000	0.87000	0.90000	0.59000	0.80000
alcohol	10.10000	11.20000	11.00000	10.20000	9.20000	11.20000
quality	6.00000	5.00000	7.00000	6.00000	4.00000	5.00000
	930	931	932	933	934	935
fixed_acidity	8.70000	6.60000	7.40000	7.6000	7.40000	6.60000
volatile_acidity	0.33000	0.61000	0.61000	0.4000	0.61000	0.61000
citric_acid	0.38000	0.01000	0.01000	0.2900	0.01000	0.01000
residual_sugar	3.30000	1.90000	2.00000	1.9000	2.00000	1.90000
chlorides	0.06300	0.08000	0.07400	0.0780	0.07400	0.08000
free_sulfur_dioxide	10.00000	8.00000	13.00000	29.0000	13.00000	8.00000
total_sulfur_dioxide	19.00000	25.00000	38.00000	66.0000	38.00000	25.00000
density	0.99468	0.99746	0.99748	0.9971	0.99748	0.99746
pH	3.30000	3.69000	3.48000	3.4500	3.48000	3.69000
sulphates	0.73000	0.73000	0.65000	0.5900	0.65000	0.73000
alcohol	12.00000	10.50000	9.80000	9.5000	9.80000	10.50000
quality	7.00000	5.00000	5.00000	6.0000	5.00000	5.00000
	936	937	938	939	940	941
fixed_acidity	8.80000	8.80000	12.00000	7.20000	6.20000	9.60000
volatile_acidity	0.30000	0.30000	0.63000	0.38000	0.46000	0.33000
citric_acid	0.38000	0.38000	0.50000	0.38000	0.17000	0.52000
residual_sugar	2.30000	2.30000	1.40000	2.80000	1.60000	2.20000
chlorides	0.06000	0.06000	0.07100	0.06800	0.07300	0.07400
free_sulfur_dioxide	19.00000	19.00000	6.00000	23.00000	7.00000	13.00000
total_sulfur_dioxide	72.00000	72.00000	26.00000	42.00000	11.00000	25.00000
density	0.99543	0.99543	0.99791	0.99356	0.99425	0.99509
pH	3.39000	3.39000	3.07000	3.34000	3.61000	3.36000
sulphates	0.72000	0.72000	0.60000	0.72000	0.54000	0.76000
alcohol	11.80000	11.80000	10.40000	12.90000	11.40000	12.40000
quality	6.00000	6.00000	4.00000	7.00000	5.00000	7.00000
	942	943	944	945	946	947

fixed_acidity	9.90000	10.10000	9.80000	8.30000	10.20000	10.20000
volatile_acidity	0.27000	0.43000	0.50000	0.30000	0.44000	0.44000
citric_acid	0.49000	0.40000	0.34000	0.49000	0.42000	0.58000
residual_sugar	5.00000	2.60000	2.30000	3.80000	2.00000	4.10000
chlorides	0.08200	0.09200	0.09400	0.09000	0.07100	0.09200
free_sulfur_dioxide	9.00000	13.00000	10.00000	11.00000	7.00000	11.00000
total_sulfur_dioxide	17.00000	52.00000	45.00000	24.00000	20.00000	24.00000
density	0.99484	0.99834	0.99864	0.99498	0.99566	0.99745
pH	3.19000	3.22000	3.24000	3.27000	3.14000	3.29000
sulphates	0.52000	0.64000	0.60000	0.64000	0.79000	0.99000
alcohol	12.50000	10.00000	9.70000	12.10000	11.10000	12.00000
quality	7.00000	7.00000	7.00000	7.00000	7.00000	7.00000
	948	949	950	951	952	953
fixed_acidity	8.30000	8.90000	8.90000	8.90000	8.30000	8.20000
volatile_acidity	0.28000	0.12000	0.12000	0.12000	0.28000	0.31000
citric_acid	0.48000	0.45000	0.45000	0.45000	0.48000	0.40000
residual_sugar	2.10000	1.80000	1.80000	1.80000	2.10000	2.20000
chlorides	0.09300	0.07500	0.07500	0.07500	0.09300	0.05800
free_sulfur_dioxide	6.00000	10.00000	10.00000	10.00000	6.00000	6.00000
total_sulfur_dioxide	12.00000	21.00000	21.00000	21.00000	12.00000	10.00000
density	0.99408	0.99552	0.99552	0.99552	0.99408	0.99536
pH	3.26000	3.41000	3.41000	3.41000	3.26000	3.31000
sulphates	0.62000	0.76000	0.76000	0.76000	0.62000	0.68000
alcohol	12.40000	11.90000	11.90000	11.90000	12.40000	11.20000
quality	7.00000	7.00000	7.00000	7.00000	7.00000	7.00000
	954	955	956	957	958	959
fixed_acidity	10.20000	7.60000	8.50000	9.00000	9.50000	6.40000
volatile_acidity	0.34000	0.43000	0.21000	0.36000	0.37000	0.57000
citric_acid	0.48000	0.40000	0.52000	0.52000	0.52000	0.12000
residual_sugar	2.10000	2.70000	1.90000	2.10000	2.00000	2.30000
chlorides	0.05200	0.08200	0.09000	0.11100	0.08800	0.12000
free_sulfur_dioxide	5.00000	6.00000	9.00000	5.00000	12.00000	25.00000
total_sulfur_dioxide	9.00000	11.00000	23.00000	10.00000	51.00000	36.00000
density	0.99458	0.99538	0.99648	0.99568	0.99613	0.99519
pH	3.20000	3.44000	3.36000	3.31000	3.29000	3.47000
sulphates	0.69000	0.54000	0.67000	0.62000	0.58000	0.71000
alcohol	12.10000	12.20000	10.40000	11.30000	11.10000	11.30000
quality	7.00000	6.00000	5.00000	6.00000	6.00000	7.00000
	960	961	962	963	964	965
fixed_acidity	8.00000	8.50000	7.10000	6.60000	8.80000	8.50000
volatile_acidity	0.59000	0.47000	0.56000	0.57000	0.27000	0.47000
citric_acid	0.05000	0.27000	0.14000	0.02000	0.39000	0.27000
residual_sugar	2.00000	1.90000	1.60000	2.10000	2.00000	1.90000
chlorides	0.08900	0.05800	0.07800	0.11500	0.10000	0.05800
free_sulfur_dioxide	12.00000	18.00000	7.00000	6.00000	20.00000	18.00000

total_sulfur_dioxide	32.00000	38.00000	18.00000	16.00000	27.00000	38.00000
density	0.99735	0.99518	0.99592	0.99654	0.99546	0.99518
pH	3.36000	3.16000	3.27000	3.38000	3.15000	3.16000
sulphates	0.61000	0.85000	0.62000	0.69000	0.69000	0.85000
alcohol	10.00000	11.10000	9.30000	9.50000	11.20000	11.10000
quality	5.00000	6.00000	5.00000	5.00000	6.00000	6.00000
	966	967	968	969	970	971
fixed_acidity	8.30000	9.00000	8.50000	9.0000	6.70000	10.40000
volatile_acidity	0.34000	0.38000	0.66000	0.4000	0.56000	0.26000
citric_acid	0.40000	0.41000	0.20000	0.4300	0.09000	0.48000
residual_sugar	2.40000	2.40000	2.10000	2.4000	2.90000	1.90000
chlorides	0.06500	0.10300	0.09700	0.0680	0.07900	0.06600
free_sulfur_dioxide	24.00000	6.00000	23.00000	29.0000	7.00000	6.00000
total_sulfur_dioxide	48.00000	10.00000	113.00000	46.0000	22.00000	10.00000
density	0.99554	0.99604	0.99733	0.9943	0.99669	0.99724
pH	3.34000	3.13000	3.13000	3.2000	3.46000	3.33000
sulphates	0.86000	0.58000	0.48000	0.6000	0.61000	0.87000
alcohol	11.00000	11.90000	9.20000	12.2000	10.20000	10.90000
quality	6.00000	7.00000	5.00000	6.0000	5.00000	6.00000
	972	973	974	975	976	977
fixed_acidity	10.40000	10.10000	8.50000	8.80000	7.200	7.200
volatile_acidity	0.26000	0.38000	0.34000	0.33000	0.410	0.410
citric_acid	0.48000	0.50000	0.44000	0.41000	0.300	0.300
residual_sugar	1.90000	2.40000	1.70000	5.90000	2.100	2.100
chlorides	0.06600	0.10400	0.07900	0.07300	0.083	0.083
free_sulfur_dioxide	6.00000	6.00000	6.00000	7.00000	35.000	35.000
total_sulfur_dioxide	10.00000	13.00000	12.00000	13.00000	72.000	72.000
density	0.99724	0.99643	0.99605	0.99658	0.997	0.997
pH	3.33000	3.22000	3.52000	3.30000	3.440	3.440
sulphates	0.87000	0.65000	0.63000	0.62000	0.520	0.520
alcohol	10.90000	11.60000	10.70000	12.10000	9.400	9.400
quality	6.00000	7.00000	5.00000	7.00000	5.000	5.000
	978	979	980	981	982	983
fixed_acidity	8.40000	7.00000	12.2000	9.10000	9.50000	7.30000
volatile_acidity	0.59000	0.40000	0.4500	0.50000	0.86000	0.52000
citric_acid	0.29000	0.32000	0.4900	0.30000	0.26000	0.32000
residual_sugar	2.60000	3.60000	1.4000	1.90000	1.90000	2.10000
chlorides	0.10900	0.06100	0.0750	0.06500	0.07900	0.07000
free_sulfur_dioxide	31.00000	9.00000	3.0000	8.00000	13.00000	51.00000
total_sulfur_dioxide	119.00000	29.00000	6.0000	17.00000	28.00000	70.00000
density	0.99801	0.99416	0.9969	0.99774	0.99712	0.99418
pH	3.15000	3.28000	3.1300	3.32000	3.25000	3.34000
sulphates	0.50000	0.49000	0.6300	0.71000	0.62000	0.82000
alcohol	9.10000	11.30000	10.4000	10.50000	10.00000	12.90000
quality	5.00000	7.00000	5.0000	6.00000	5.00000	6.00000

	984	985	986	987	988	989
fixed_acidity	9.10000	12.2000	7.40000	9.8000	7.10000	7.70000
volatile_acidity	0.50000	0.4500	0.58000	0.3400	0.36000	0.39000
citric_acid	0.30000	0.4900	0.00000	0.3900	0.30000	0.12000
residual_sugar	1.90000	1.4000	2.00000	1.4000	1.60000	1.70000
chlorides	0.06500	0.0750	0.06400	0.0660	0.08000	0.09700
free_sulfur_dioxide	8.00000	3.0000	7.00000	3.0000	35.00000	19.00000
total_sulfur_dioxide	17.00000	6.0000	11.00000	7.0000	70.00000	27.00000
density	0.99774	0.9969	0.99562	0.9947	0.99693	0.99596
pH	3.32000	3.1300	3.45000	3.1900	3.44000	3.16000
sulphates	0.71000	0.6300	0.58000	0.5500	0.50000	0.49000
alcohol	10.50000	10.4000	11.30000	11.4000	9.40000	9.40000
quality	6.00000	5.0000	6.00000	7.0000	5.00000	5.00000
	990	991	992	993	994	995
fixed_acidity	9.70000	7.70000	7.10000	6.50000	7.10000	10.00000
volatile_acidity	0.29500	0.39000	0.34000	0.40000	0.34000	0.35000
citric_acid	0.40000	0.12000	0.28000	0.10000	0.28000	0.45000
residual_sugar	1.50000	1.70000	2.00000	2.00000	2.00000	2.50000
chlorides	0.07300	0.09700	0.08200	0.07600	0.08200	0.09200
free_sulfur_dioxide	14.00000	19.00000	31.00000	30.00000	31.00000	20.00000
total_sulfur_dioxide	21.00000	27.00000	68.00000	47.00000	68.00000	88.00000
density	0.99556	0.99596	0.99694	0.99554	0.99694	0.99918
pH	3.14000	3.16000	3.45000	3.36000	3.45000	3.15000
sulphates	0.51000	0.49000	0.48000	0.48000	0.48000	0.43000
alcohol	10.90000	9.40000	9.40000	9.40000	9.40000	9.40000
quality	6.00000	5.00000	5.00000	6.00000	5.00000	5.00000
	996	997	998	999	1000	1001
fixed_acidity	7.70000	5.60000	5.60000	8.90000	6.40000	7.50000
volatile_acidity	0.60000	0.66000	0.66000	0.84000	0.69000	0.43000
citric_acid	0.06000	0.00000	0.00000	0.34000	0.00000	0.30000
residual_sugar	2.00000	2.20000	2.20000	1.40000	1.65000	2.20000
chlorides	0.07900	0.08700	0.08700	0.05000	0.05500	0.06200
free_sulfur_dioxide	19.00000	3.00000	3.00000	4.00000	7.00000	6.00000
total_sulfur_dioxide	41.00000	11.00000	11.00000	10.00000	12.00000	12.00000
density	0.99697	0.99378	0.99378	0.99554	0.99162	0.99495
pH	3.39000	3.71000	3.71000	3.12000	3.47000	3.44000
sulphates	0.62000	0.63000	0.63000	0.48000	0.53000	0.72000
alcohol	10.10000	12.80000	12.80000	9.10000	12.90000	11.50000
quality	6.00000	7.00000	7.00000	6.00000	6.00000	7.00000
	1002	1003	1004	1005	1006	1007
fixed_acidity	9.90000	9.10000	6.8000	8.20000	6.8000	9.10000
volatile_acidity	0.35000	0.29000	0.3600	0.43000	0.3600	0.29000
citric_acid	0.38000	0.33000	0.3200	0.29000	0.3200	0.33000
residual_sugar	1.50000	2.05000	1.8000	1.60000	1.8000	2.05000
chlorides	0.05800	0.06300	0.0670	0.08100	0.0670	0.06300

free_sulfur_dioxide	31.00000	13.00000	4.0000	27.00000	4.0000	13.00000
total_sulfur_dioxide	47.00000	27.00000	8.0000	45.00000	8.0000	27.00000
density	0.99676	0.99516	0.9928	0.99603	0.9928	0.99516
pH	3.26000	3.26000	3.3600	3.25000	3.3600	3.26000
sulphates	0.82000	0.84000	0.5500	0.54000	0.5500	0.84000
alcohol	10.60000	11.70000	12.8000	10.30000	12.8000	11.70000
quality	7.00000	7.00000	7.0000	5.00000	7.0000	7.00000
	1008	1009	1010	1011	1012	1013
fixed_acidity	9.10000	8.90000	9.60000	8.90000	8.9000	7.70000
volatile_acidity	0.30000	0.35000	0.50000	0.28000	0.3200	1.00500
citric_acid	0.34000	0.40000	0.36000	0.45000	0.3100	0.15000
residual_sugar	2.00000	3.60000	2.80000	1.70000	2.0000	2.10000
chlorides	0.06400	0.11000	0.11600	0.06700	0.0880	0.10200
free_sulfur_dioxide	12.00000	12.00000	26.00000	7.00000	12.0000	11.00000
total_sulfur_dioxide	25.00000	24.00000	55.00000	12.00000	19.0000	32.00000
density	0.99516	0.99549	0.99722	0.99354	0.9957	0.99604
pH	3.26000	3.23000	3.18000	3.25000	3.1700	3.23000
sulphates	0.84000	0.70000	0.68000	0.55000	0.5500	0.48000
alcohol	11.70000	12.00000	10.90000	12.30000	10.4000	10.00000
quality	7.00000	7.00000	5.00000	7.00000	6.0000	5.00000
	1014	1015	1016	1017	1018	1019
fixed_acidity	7.50000	8.00000	10.50000	8.90000	8.00000	8.00000
volatile_acidity	0.71000	0.58000	0.39000	0.38000	0.18000	0.18000
citric_acid	0.00000	0.16000	0.46000	0.40000	0.37000	0.37000
residual_sugar	1.60000	2.00000	2.20000	2.20000	0.90000	0.90000
chlorides	0.09200	0.12000	0.07500	0.06800	0.04900	0.04900
free_sulfur_dioxide	22.00000	3.00000	14.00000	12.00000	36.00000	36.00000
total_sulfur_dioxide	31.00000	7.00000	27.00000	28.00000	109.00000	109.00000
density	0.99635	0.99454	0.99598	0.99486	0.99007	0.99007
pH	3.38000	3.22000	3.06000	3.27000	2.89000	2.89000
sulphates	0.58000	0.58000	0.84000	0.75000	0.44000	0.44000
alcohol	10.00000	11.20000	11.40000	12.60000	12.70000	12.70000
quality	6.00000	6.00000	6.00000	7.00000	6.00000	6.00000
	1020	1021	1022	1023	1024	1025
fixed_acidity	7.00000	11.30000	11.30000	7.00000	8.20000	7.70000
volatile_acidity	0.50000	0.36000	0.36000	0.51000	0.32000	0.58000
citric_acid	0.14000	0.66000	0.66000	0.09000	0.42000	0.01000
residual_sugar	1.80000	2.40000	2.40000	2.10000	2.30000	1.80000
chlorides	0.07800	0.12300	0.12300	0.06200	0.09800	0.08800
free_sulfur_dioxide	10.00000	3.00000	3.00000	4.00000	3.00000	12.00000
total_sulfur_dioxide	23.00000	8.00000	8.00000	9.00000	9.00000	18.00000
density	0.99636	0.99642	0.99642	0.99584	0.99506	0.99568
pH	3.53000	3.20000	3.20000	3.35000	3.27000	3.32000
sulphates	0.61000	0.53000	0.53000	0.54000	0.55000	0.56000
alcohol	10.40000	11.90000	11.90000	10.50000	12.30000	10.50000

quality	5.00000	6.00000	6.00000	5.00000	6.00000	7.00000
	1026	1027	1028	1029	1030	1031
fixed_acidity	8.60000	7.90000	6.40000	7.20000	7.70000	7.10000
volatile_acidity	0.83000	0.31000	0.79500	0.34000	0.58000	0.59000
citric_acid	0.00000	0.32000	0.00000	0.21000	0.01000	0.00000
residual_sugar	2.80000	1.90000	2.20000	2.50000	1.80000	2.10000
chlorides	0.09500	0.06600	0.06500	0.07500	0.08800	0.09100
free_sulfur_dioxide	17.00000	14.00000	28.00000	41.00000	12.00000	9.00000
total_sulfur_dioxide	43.00000	36.00000	52.00000	68.00000	18.00000	14.00000
density	0.99822	0.99364	0.99378	0.99586	0.99568	0.99488
pH	3.33000	3.41000	3.49000	3.37000	3.32000	3.42000
sulphates	0.60000	0.56000	0.52000	0.54000	0.56000	0.55000
alcohol	10.40000	12.60000	11.60000	10.10000	10.50000	11.50000
quality	6.00000	6.00000	5.00000	6.00000	7.00000	7.00000
	1032	1033	1034	1035	1036	1037
fixed_acidity	7.30000	8.10000	7.50000	8.90000	10.10000	7.60000
volatile_acidity	0.55000	0.82000	0.57000	0.74500	0.37000	0.31000
citric_acid	0.01000	0.00000	0.08000	0.18000	0.34000	0.34000
residual_sugar	1.80000	4.10000	2.60000	2.50000	2.40000	2.50000
chlorides	0.09300	0.09500	0.08900	0.07700	0.08500	0.08200
free_sulfur_dioxide	9.00000	5.00000	14.00000	15.00000	5.00000	26.00000
total_sulfur_dioxide	15.00000	14.00000	27.00000	48.00000	17.00000	35.00000
density	0.99514	0.99854	0.99592	0.99739	0.99683	0.99356
pH	3.35000	3.36000	3.30000	3.20000	3.17000	3.22000
sulphates	0.58000	0.53000	0.59000	0.47000	0.65000	0.59000
alcohol	11.00000	9.60000	10.40000	9.70000	10.60000	12.50000
quality	7.00000	5.00000	6.00000	6.00000	7.00000	7.00000
	1038	1039	1040	1041	1042	1043
fixed_acidity	7.30000	8.7000	8.90000	7.40000	6.90000	8.90000
volatile_acidity	0.91000	0.4100	0.50000	0.96500	0.49000	0.50000
citric_acid	0.10000	0.4100	0.21000	0.00000	0.19000	0.21000
residual_sugar	1.80000	6.2000	2.20000	2.20000	1.70000	2.20000
chlorides	0.07400	0.0780	0.08800	0.08800	0.07900	0.08800
free_sulfur_dioxide	20.00000	25.0000	21.00000	16.00000	13.00000	21.00000
total_sulfur_dioxide	56.00000	42.0000	39.00000	32.00000	26.00000	39.00000
density	0.99672	0.9953	0.99692	0.99756	0.99547	0.99692
pH	3.35000	3.2400	3.33000	3.58000	3.38000	3.33000
sulphates	0.56000	0.7700	0.83000	0.67000	0.64000	0.83000
alcohol	9.20000	12.6000	11.10000	10.20000	9.80000	11.10000
quality	5.00000	7.0000	6.00000	5.00000	6.00000	6.00000
	1044	1045	1046	1047	1048	1049
fixed_acidity	9.50000	6.40000	6.90000	7.60000	7.10000	9.30000
volatile_acidity	0.39000	0.39000	0.44000	0.78000	0.43000	0.49000
citric_acid	0.41000	0.33000	0.00000	0.00000	0.17000	0.36000
residual_sugar	8.90000	3.30000	1.40000	1.70000	1.80000	1.70000

chlorides	0.06900	0.04600	0.07000	0.07600	0.08200	0.08100
free_sulfur_dioxide	18.00000	12.00000	32.00000	33.00000	27.00000	3.00000
total_sulfur_dioxide	39.00000	53.00000	38.00000	45.00000	51.00000	14.00000
density	0.99859	0.99294	0.99438	0.99612	0.99634	0.99702
pH	3.29000	3.36000	3.32000	3.31000	3.49000	3.27000
sulphates	0.81000	0.62000	0.58000	0.62000	0.64000	0.78000
alcohol	10.90000	12.20000	11.40000	10.70000	10.40000	10.90000
quality	7.00000	6.00000	6.00000	6.00000	5.00000	6.00000
	1050	1051	1052	1053	1054	1055
fixed_acidity	9.30000	7.10000	8.50000	5.60000	8.30000	8.20000
volatile_acidity	0.50000	0.43000	0.46000	0.60500	0.33000	0.64000
citric_acid	0.36000	0.17000	0.59000	0.05000	0.42000	0.27000
residual_sugar	1.80000	1.80000	1.40000	2.40000	2.30000	2.00000
chlorides	0.08400	0.08200	0.41400	0.07300	0.07000	0.09500
free_sulfur_dioxide	6.00000	27.00000	16.00000	19.00000	9.00000	5.00000
total_sulfur_dioxide	17.00000	51.00000	45.00000	25.00000	20.00000	77.00000
density	0.99704	0.99634	0.99702	0.99258	0.99426	0.99747
pH	3.27000	3.49000	3.03000	3.56000	3.38000	3.13000
sulphates	0.77000	0.64000	1.34000	0.55000	0.77000	0.62000
alcohol	10.80000	10.40000	9.20000	12.90000	12.70000	9.10000
quality	6.00000	5.00000	5.00000	5.00000	7.00000	6.00000
	1056	1057	1058	1059	1060	1061
fixed_acidity	8.20000	8.90000	7.60000	9.9000	8.90000	11.6000
volatile_acidity	0.64000	0.48000	0.42000	0.5300	0.48000	0.2300
citric_acid	0.27000	0.53000	0.25000	0.5700	0.53000	0.5700
residual_sugar	2.00000	4.00000	3.90000	2.4000	4.00000	1.8000
chlorides	0.09500	0.10100	0.10400	0.0930	0.10100	0.0740
free_sulfur_dioxide	5.00000	3.00000	28.00000	30.0000	3.00000	3.0000
total_sulfur_dioxide	77.00000	10.00000	90.00000	52.0000	10.00000	8.0000
density	0.99747	0.99586	0.99784	0.9971	0.99586	0.9981
pH	3.13000	3.21000	3.15000	3.1900	3.21000	3.1400
sulphates	0.62000	0.59000	0.57000	0.7600	0.59000	0.7000
alcohol	9.10000	12.10000	9.10000	11.6000	12.10000	9.9000
quality	6.00000	7.00000	5.00000	7.0000	7.00000	6.0000
	1062	1063	1064	1065	1066	1067
fixed_acidity	9.10000	8.0000	10.20000	8.20000	7.7000	6.60000
volatile_acidity	0.40000	0.3800	0.29000	0.74000	0.6100	0.52000
citric_acid	0.50000	0.4400	0.65000	0.09000	0.1800	0.08000
residual_sugar	1.80000	1.9000	2.40000	2.00000	2.4000	2.40000
chlorides	0.07100	0.0980	0.07500	0.06700	0.0830	0.07000
free_sulfur_dioxide	7.00000	6.0000	6.00000	5.00000	6.0000	13.00000
total_sulfur_dioxide	16.00000	15.0000	17.00000	10.00000	20.0000	26.00000
density	0.99462	0.9956	0.99565	0.99418	0.9963	0.99358
pH	3.21000	3.3000	3.22000	3.28000	3.2900	3.40000
sulphates	0.69000	0.6400	0.63000	0.57000	0.6000	0.72000

alcohol	12.50000	11.4000	11.80000	11.80000	10.2000	12.50000
quality	8.00000	6.0000	6.00000	6.00000	6.0000	7.00000
	1068	1069	1070	1071	1072	1073
fixed_acidity	11.10000	11.10000	8.000	9.30000	7.50000	7.2000
volatile_acidity	0.31000	0.31000	0.620	0.33000	0.77000	0.3500
citric_acid	0.53000	0.53000	0.350	0.45000	0.20000	0.2600
residual_sugar	2.20000	2.20000	2.800	1.50000	8.10000	1.8000
chlorides	0.06000	0.06000	0.086	0.05700	0.09800	0.0830
free_sulfur_dioxide	3.00000	3.00000	28.000	19.00000	30.00000	33.0000
total_sulfur_dioxide	10.00000	10.00000	52.000	37.00000	92.00000	75.0000
density	0.99572	0.99572	0.997	0.99498	0.99892	0.9968
pH	3.02000	3.02000	3.310	3.18000	3.20000	3.4000
sulphates	0.83000	0.83000	0.620	0.89000	0.58000	0.5800
alcohol	10.90000	10.90000	10.800	11.10000	9.20000	9.5000
quality	7.00000	7.00000	5.000	7.00000	5.00000	6.0000
	1075	1076	1077	1078	1079	1080
fixed_acidity	7.50000	9.10000	9.90000	8.60000	8.60000	7.90000
volatile_acidity	0.77000	0.25000	0.32000	0.37000	0.37000	0.30000
citric_acid	0.20000	0.34000	0.56000	0.65000	0.65000	0.68000
residual_sugar	8.10000	2.00000	2.00000	6.40000	6.40000	8.30000
chlorides	0.09800	0.07100	0.07300	0.08000	0.08000	0.05000
free_sulfur_dioxide	30.00000	45.00000	3.00000	3.00000	3.00000	37.50000
total_sulfur_dioxide	92.00000	67.00000	8.00000	8.00000	8.00000	278.00000
density	0.99892	0.99769	0.99534	0.99817	0.99817	0.99316
pH	3.20000	3.44000	3.15000	3.27000	3.27000	3.01000
sulphates	0.58000	0.86000	0.73000	0.58000	0.58000	0.51000
alcohol	9.20000	10.20000	11.40000	11.00000	11.00000	12.30000
quality	5.00000	7.00000	6.00000	5.00000	5.00000	7.00000
	1081	1082	1083	1084	1085	1086
fixed_acidity	10.30000	7.90000	7.20000	8.70000	7.20000	6.80000
volatile_acidity	0.27000	0.30000	0.38000	0.42000	0.38000	0.48000
citric_acid	0.56000	0.68000	0.30000	0.45000	0.30000	0.08000
residual_sugar	1.40000	8.30000	1.80000	2.40000	1.80000	1.80000
chlorides	0.04700	0.05000	0.07300	0.07200	0.07300	0.07400
free_sulfur_dioxide	3.00000	37.50000	31.00000	32.00000	31.00000	40.00000
total_sulfur_dioxide	8.00000	289.00000	70.00000	59.00000	70.00000	64.00000
density	0.99471	0.99316	0.99685	0.99617	0.99685	0.99529
pH	3.16000	3.01000	3.42000	3.33000	3.42000	3.12000
sulphates	0.51000	0.51000	0.59000	0.77000	0.59000	0.49000
alcohol	11.80000	12.30000	9.50000	12.00000	9.50000	9.60000
quality	6.00000	7.00000	6.00000	6.00000	6.00000	5.00000
	1087	1088	1089	1090	1091	1092
fixed_acidity	8.50000	7.900	11.60000	11.60000	10.00000	7.90000
volatile_acidity	0.34000	0.190	0.41000	0.41000	0.26000	0.34000
citric_acid	0.40000	0.420	0.54000	0.54000	0.54000	0.42000

residual_sugar	4.70000	1.600	1.50000	1.50000	1.90000	2.00000
chlorides	0.05500	0.057	0.09500	0.09500	0.08300	0.08600
free_sulfur_dioxide	3.00000	18.000	22.00000	22.00000	42.00000	8.00000
total_sulfur_dioxide	9.00000	30.000	41.00000	41.00000	74.00000	19.00000
density	0.99738	0.994	0.99735	0.99735	0.99451	0.99546
pH	3.38000	3.290	3.02000	3.02000	2.98000	3.35000
sulphates	0.66000	0.690	0.76000	0.76000	0.63000	0.60000
alcohol	11.60000	11.200	9.90000	9.90000	11.80000	11.40000
quality	7.00000	6.000	7.00000	7.00000	8.00000	6.00000
	1093	1094	1095	1096	1097	1098
fixed_acidity	7.00000	9.20000	6.60000	9.40000	6.60000	8.60000
volatile_acidity	0.54000	0.31000	0.72500	0.40000	0.72500	0.52000
citric_acid	0.09000	0.36000	0.09000	0.47000	0.09000	0.38000
residual_sugar	2.00000	2.20000	5.50000	2.50000	5.50000	1.50000
chlorides	0.08100	0.07900	0.11700	0.08700	0.11700	0.09600
free_sulfur_dioxide	10.00000	11.00000	9.00000	6.00000	9.00000	5.00000
total_sulfur_dioxide	16.00000	31.00000	17.00000	20.00000	17.00000	18.00000
density	0.99479	0.99615	0.99655	0.99772	0.99655	0.99666
pH	3.43000	3.33000	3.35000	3.15000	3.35000	3.20000
sulphates	0.59000	0.86000	0.49000	0.50000	0.49000	0.52000
alcohol	11.50000	12.00000	10.80000	10.50000	10.80000	9.40000
quality	6.00000	7.00000	6.00000	5.00000	6.00000	5.00000
	1099	1100	1101	1102	1103	1104
fixed_acidity	8.00000	8.60000	8.40000	7.40000	6.10000	7.40000
volatile_acidity	0.31000	0.52000	0.34000	0.49000	0.48000	0.49000
citric_acid	0.45000	0.38000	0.42000	0.27000	0.09000	0.27000
residual_sugar	2.10000	1.50000	2.10000	2.10000	1.70000	2.10000
chlorides	0.21600	0.09600	0.07200	0.07100	0.07800	0.07100
free_sulfur_dioxide	5.00000	5.00000	23.00000	14.00000	18.00000	14.00000
total_sulfur_dioxide	16.00000	18.00000	36.00000	25.00000	30.00000	25.00000
density	0.99358	0.99666	0.99392	0.99388	0.99402	0.99388
pH	3.15000	3.20000	3.11000	3.35000	3.45000	3.35000
sulphates	0.81000	0.52000	0.78000	0.63000	0.54000	0.63000
alcohol	12.50000	9.40000	12.40000	12.00000	11.20000	12.00000
quality	7.00000	5.00000	6.00000	6.00000	6.00000	6.00000
	1105	1106	1107	1108	1109	1110
fixed_acidity	8.0000	6.30000	8.20000	9.10000	8.10000	10.8000
volatile_acidity	0.4800	0.57000	0.23000	0.30000	0.78000	0.4700
citric_acid	0.3400	0.28000	0.42000	0.41000	0.10000	0.4300
residual_sugar	2.2000	2.10000	1.90000	2.00000	3.30000	2.1000
chlorides	0.0730	0.04800	0.06900	0.06800	0.09000	0.1710
free_sulfur_dioxide	16.0000	13.00000	9.00000	10.00000	4.00000	27.0000
total_sulfur_dioxide	25.0000	49.00000	17.00000	24.00000	13.00000	66.0000
density	0.9936	0.99374	0.99376	0.99523	0.99855	0.9982
pH	3.2800	3.41000	3.21000	3.27000	3.36000	3.1700

sulphates	0.6600	0.60000	0.54000	0.85000	0.49000	0.7600
alcohol	12.4000	12.80000	12.30000	11.70000	9.50000	10.8000
quality	6.0000	5.00000	6.00000	7.00000	5.00000	6.0000
	1111	1112	1113	1114	1115	1116
fixed_acidity	8.30000	5.40000	7.90000	8.90000	5.0000	7.00000
volatile_acidity	0.53000	0.42000	0.33000	0.24000	0.4000	0.69000
citric_acid	0.00000	0.27000	0.41000	0.39000	0.5000	0.07000
residual_sugar	1.40000	2.00000	1.50000	1.60000	4.3000	2.50000
chlorides	0.07000	0.09200	0.05600	0.07400	0.0460	0.09100
free_sulfur_dioxide	6.00000	23.00000	6.00000	3.00000	29.0000	15.00000
total_sulfur_dioxide	14.00000	55.00000	35.00000	10.00000	80.0000	21.00000
density	0.99593	0.99471	0.99396	0.99698	0.9902	0.99572
pH	3.25000	3.78000	3.29000	3.12000	3.4900	3.38000
sulphates	0.64000	0.64000	0.71000	0.59000	0.6600	0.60000
alcohol	10.00000	12.30000	11.00000	9.50000	13.6000	11.30000
quality	6.00000	7.00000	6.00000	6.00000	6.0000	6.00000
	1117	1118	1119	1120	1121	1122
fixed_acidity	7.00000	7.00000	7.10000	5.60000	7.90000	6.60000
volatile_acidity	0.69000	0.69000	0.39000	0.66000	0.54000	0.50000
citric_acid	0.07000	0.07000	0.12000	0.00000	0.34000	0.00000
residual_sugar	2.50000	2.50000	2.10000	2.50000	2.50000	1.80000
chlorides	0.09100	0.09100	0.06500	0.06600	0.07600	0.06200
free_sulfur_dioxide	15.00000	15.00000	14.00000	7.00000	8.00000	21.00000
total_sulfur_dioxide	21.00000	21.00000	24.00000	15.00000	17.00000	28.00000
density	0.99572	0.99572	0.99252	0.99256	0.99235	0.99352
pH	3.38000	3.38000	3.30000	3.52000	3.20000	3.44000
sulphates	0.60000	0.60000	0.53000	0.58000	0.72000	0.55000
alcohol	11.30000	11.30000	13.30000	12.90000	13.10000	12.30000
quality	6.00000	6.00000	6.00000	5.00000	8.00000	6.00000
	1123	1124	1125	1126	1127	1128
fixed_acidity	6.3000	10.70000	6.50000	8.80000	5.8000	6.30000
volatile_acidity	0.4700	0.40000	0.58000	0.24000	0.2900	0.76000
citric_acid	0.0000	0.37000	0.00000	0.35000	0.2600	0.00000
residual_sugar	1.4000	1.90000	2.20000	1.70000	1.7000	2.90000
chlorides	0.0550	0.08100	0.09600	0.05500	0.0630	0.07200
free_sulfur_dioxide	27.0000	17.00000	3.00000	13.00000	3.0000	26.00000
total_sulfur_dioxide	33.0000	29.00000	13.00000	27.00000	11.0000	52.00000
density	0.9922	0.99674	0.99557	0.99394	0.9915	0.99379
pH	3.4500	3.12000	3.62000	3.14000	3.3900	3.51000
sulphates	0.4800	0.65000	0.62000	0.59000	0.5400	0.60000
alcohol	12.3000	11.20000	11.50000	11.30000	13.5000	11.50000
quality	6.0000	6.00000	4.00000	7.00000	6.0000	6.00000
	1129	1130	1131	1132	1133	1134
fixed_acidity	10.0000	10.50000	9.1000	5.90000	7.4000	7.20000
volatile_acidity	0.4300	0.43000	0.6000	0.19000	0.3600	0.48000

citric_acid	0.3300	0.35000	0.0000	0.21000	0.3400	0.07000
residual_sugar	2.7000	3.30000	1.9000	1.70000	1.8000	5.50000
chlorides	0.0950	0.09200	0.0580	0.04500	0.0750	0.08900
free_sulfur_dioxide	28.0000	24.00000	5.0000	57.00000	18.0000	10.00000
total_sulfur_dioxide	89.0000	70.00000	10.0000	135.00000	38.0000	18.00000
density	0.9984	0.99798	0.9977	0.99341	0.9933	0.99684
pH	3.2200	3.21000	3.1800	3.32000	3.3800	3.37000
sulphates	0.6800	0.69000	0.6300	0.44000	0.8800	0.68000
alcohol	10.0000	10.50000	10.4000	9.50000	13.6000	11.20000
quality	5.0000	6.00000	6.0000	5.00000	7.0000	7.00000
	1135	1136	1137	1138	1139	1140
fixed_acidity	8.50000	8.0000	10.40000	10.40000	7.50000	8.20000
volatile_acidity	0.28000	0.2500	0.52000	0.52000	0.41000	0.51000
citric_acid	0.35000	0.4300	0.45000	0.45000	0.15000	0.24000
residual_sugar	1.70000	1.7000	2.00000	2.00000	3.70000	2.00000
chlorides	0.06100	0.0670	0.08000	0.08000	0.10400	0.07900
free_sulfur_dioxide	6.00000	22.0000	6.00000	6.00000	29.00000	16.00000
total_sulfur_dioxide	15.00000	50.0000	13.00000	13.00000	94.00000	86.00000
density	0.99524	0.9946	0.99774	0.99774	0.99786	0.99764
pH	3.30000	3.3800	3.22000	3.22000	3.14000	3.34000
sulphates	0.74000	0.6000	0.76000	0.76000	0.58000	0.64000
alcohol	11.80000	11.9000	11.40000	11.40000	9.10000	9.50000
quality	7.00000	6.0000	6.00000	6.00000	5.00000	6.00000
	1141	1142	1143	1144	1145	1146
fixed_acidity	7.3000	8.20000	6.90000	7.00000	7.30000	8.20000
volatile_acidity	0.4000	0.38000	0.45000	0.22000	0.32000	0.20000
citric_acid	0.3000	0.32000	0.11000	0.30000	0.23000	0.43000
residual_sugar	1.7000	2.50000	2.40000	1.80000	2.30000	2.50000
chlorides	0.0800	0.08000	0.04300	0.06500	0.06600	0.07600
free_sulfur_dioxide	33.0000	24.00000	6.00000	16.00000	35.00000	31.00000
total_sulfur_dioxide	79.0000	71.00000	12.00000	20.00000	70.00000	51.00000
density	0.9969	0.99624	0.99354	0.99672	0.99588	0.99672
pH	3.4100	3.27000	3.30000	3.61000	3.43000	3.53000
sulphates	0.6500	0.85000	0.65000	0.82000	0.62000	0.81000
alcohol	9.5000	11.00000	11.40000	10.00000	10.10000	10.40000
quality	6.0000	6.00000	6.00000	6.00000	5.00000	6.00000
	1147	1148	1149	1150	1151	1152
fixed_acidity	7.800	10.00000	7.80000	10.00000	8.20000	6.10000
volatile_acidity	0.500	0.41000	0.39000	0.35000	0.33000	0.58000
citric_acid	0.120	0.45000	0.42000	0.47000	0.32000	0.23000
residual_sugar	1.800	6.20000	2.00000	2.00000	2.80000	2.50000
chlorides	0.178	0.07100	0.08600	0.06100	0.06700	0.04400
free_sulfur_dioxide	6.000	6.00000	9.00000	6.00000	4.00000	16.00000
total_sulfur_dioxide	21.000	14.00000	21.00000	11.00000	12.00000	70.00000
density	0.996	0.99702	0.99526	0.99585	0.99473	0.99352

pH	3.280	3.21000	3.39000	3.23000	3.30000	3.46000
sulphates	0.870	0.49000	0.66000	0.52000	0.76000	0.65000
alcohol	9.800	11.80000	11.60000	12.00000	12.80000	12.50000
quality	6.000	7.00000	6.00000	6.00000	7.00000	6.00000
	1153	1154	1155	1156	1157	1158
fixed_acidity	8.30000	9.60000	6.60000	8.30000	8.50000	5.1000
volatile_acidity	0.60000	0.42000	0.58000	0.60000	0.18000	0.5100
citric_acid	0.25000	0.35000	0.00000	0.25000	0.51000	0.1800
residual_sugar	2.20000	2.10000	2.20000	2.20000	1.75000	2.1000
chlorides	0.11800	0.08300	0.10000	0.11800	0.07100	0.0420
free_sulfur_dioxide	9.00000	17.00000	50.00000	9.00000	45.00000	16.0000
total_sulfur_dioxide	38.00000	38.00000	63.00000	38.00000	88.00000	101.0000
density	0.99616	0.99622	0.99544	0.99616	0.99524	0.9924
pH	3.15000	3.23000	3.59000	3.15000	3.33000	3.4600
sulphates	0.53000	0.66000	0.68000	0.53000	0.76000	0.8700
alcohol	9.80000	11.10000	11.40000	9.80000	11.80000	12.9000
quality	5.00000	6.00000	6.00000	5.00000	7.00000	7.0000
	1159	1160	1161	1162	1163	1164
fixed_acidity	6.70000	10.20000	10.60000	8.80000	8.50000	9.00000
volatile_acidity	0.41000	0.41000	0.36000	0.45000	0.32000	0.78500
citric_acid	0.43000	0.43000	0.57000	0.43000	0.42000	0.24000
residual_sugar	2.80000	2.20000	2.30000	1.40000	2.30000	1.70000
chlorides	0.07600	0.11000	0.08700	0.07600	0.07500	0.07800
free_sulfur_dioxide	22.00000	11.00000	6.00000	12.00000	12.00000	10.00000
total_sulfur_dioxide	54.00000	37.00000	20.00000	21.00000	19.00000	21.00000
density	0.99572	0.99728	0.99676	0.99551	0.99434	0.99692
pH	3.42000	3.16000	3.14000	3.21000	3.14000	3.29000
sulphates	1.16000	0.67000	0.72000	0.75000	0.71000	0.67000
alcohol	10.60000	10.80000	11.10000	10.20000	11.80000	10.00000
quality	6.00000	5.00000	7.00000	6.00000	7.00000	5.00000
	1165	1166	1167	1168	1169	1170
fixed_acidity	9.00000	8.50000	9.90000	8.20000	6.50000	7.60000
volatile_acidity	0.78500	0.44000	0.54000	0.33000	0.34000	0.50000
citric_acid	0.24000	0.50000	0.26000	0.39000	0.27000	0.29000
residual_sugar	1.70000	1.90000	2.00000	2.50000	2.80000	2.30000
chlorides	0.07800	0.36900	0.11100	0.07400	0.06700	0.08600
free_sulfur_dioxide	10.00000	15.00000	7.00000	29.00000	8.00000	5.00000
total_sulfur_dioxide	21.00000	38.00000	60.00000	48.00000	44.00000	14.00000
density	0.99692	0.99634	0.99709	0.99528	0.99384	0.99502
pH	3.29000	3.01000	2.94000	3.32000	3.21000	3.32000
sulphates	0.67000	1.10000	0.98000	0.88000	0.56000	0.62000
alcohol	10.00000	9.40000	10.20000	12.40000	12.00000	11.50000
quality	5.00000	5.00000	5.00000	7.00000	6.00000	6.00000
	1171	1172	1173	1174	1175	1176
fixed_acidity	9.20000	7.10000	9.70000	7.60000	7.60000	6.50000

volatile_acidity	0.36000	0.59000	0.42000	0.36000	0.36000	0.61000
citric_acid	0.34000	0.00000	0.46000	0.31000	0.31000	0.00000
residual_sugar	1.60000	2.20000	2.10000	1.70000	1.70000	2.20000
chlorides	0.06200	0.07800	0.07400	0.07900	0.07900	0.09500
free_sulfur_dioxide	5.00000	26.00000	5.00000	26.00000	26.00000	48.00000
total_sulfur_dioxide	12.00000	44.00000	16.00000	65.00000	65.00000	59.00000
density	0.99667	0.99522	0.99649	0.99716	0.99716	0.99541
pH	3.20000	3.42000	3.27000	3.46000	3.46000	3.61000
sulphates	0.67000	0.68000	0.74000	0.62000	0.62000	0.70000
alcohol	10.50000	10.80000	12.30000	9.50000	9.50000	11.50000
quality	6.00000	6.00000	6.00000	6.00000	6.00000	6.00000
	1177	1178	1179	1180	1181	1182
fixed_acidity	6.50000	7.10000	5.60000	8.20000	8.20000	9.80000
volatile_acidity	0.88000	0.66000	0.91500	0.35000	0.35000	0.39000
citric_acid	0.03000	0.00000	0.00000	0.33000	0.33000	0.43000
residual_sugar	5.60000	2.40000	2.10000	2.40000	2.40000	1.65000
chlorides	0.07900	0.05200	0.04100	0.07600	0.07600	0.06800
free_sulfur_dioxide	23.00000	6.00000	17.00000	11.00000	11.00000	5.00000
total_sulfur_dioxide	47.00000	11.00000	78.00000	47.00000	47.00000	11.00000
density	0.99572	0.99318	0.99346	0.99599	0.99599	0.99478
pH	3.58000	3.35000	3.68000	3.27000	3.27000	3.19000
sulphates	0.50000	0.66000	0.73000	0.81000	0.81000	0.46000
alcohol	11.20000	12.70000	11.40000	11.00000	11.00000	11.40000
quality	4.00000	7.00000	5.00000	6.00000	6.00000	5.00000
	1183	1184	1185	1186	1187	1188
fixed_acidity	10.20000	6.80000	6.70000	7.00000	6.6000	7.00000
volatile_acidity	0.40000	0.66000	0.64000	0.43000	0.8000	0.43000
citric_acid	0.40000	0.07000	0.23000	0.30000	0.0300	0.30000
residual_sugar	2.50000	1.60000	2.10000	2.00000	7.8000	2.00000
chlorides	0.06800	0.07000	0.08000	0.08500	0.0790	0.08500
free_sulfur_dioxide	41.00000	16.00000	11.00000	6.00000	6.0000	6.00000
total_sulfur_dioxide	54.00000	61.00000	119.00000	39.00000	12.0000	39.00000
density	0.99754	0.99572	0.99538	0.99346	0.9963	0.99346
pH	3.38000	3.29000	3.36000	3.33000	3.5200	3.33000
sulphates	0.86000	0.60000	0.70000	0.46000	0.5000	0.46000
alcohol	10.50000	9.30000	10.90000	11.90000	12.2000	11.90000
quality	6.00000	5.00000	5.00000	6.00000	5.0000	6.00000
	1189	1190	1191	1192	1193	1194
fixed_acidity	6.70000	8.80000	9.10000	6.50000	7.20000	6.40000
volatile_acidity	0.64000	0.95500	0.40000	0.88500	0.25000	0.88500
citric_acid	0.23000	0.05000	0.57000	0.00000	0.37000	0.00000
residual_sugar	2.10000	1.80000	4.60000	2.30000	2.50000	2.30000
chlorides	0.08000	0.07500	0.08000	0.16600	0.06300	0.16600
free_sulfur_dioxide	11.00000	5.00000	6.00000	6.00000	11.00000	6.00000
total_sulfur_dioxide	119.00000	19.00000	20.00000	12.00000	41.00000	12.00000

density	0.99538	0.99616	0.99652	0.99551	0.99439	0.99551
pH	3.36000	3.30000	3.28000	3.56000	3.52000	3.56000
sulphates	0.70000	0.44000	0.57000	0.51000	0.80000	0.51000
alcohol	10.90000	9.60000	12.50000	10.80000	12.40000	10.80000
quality	5.00000	4.00000	6.00000	5.00000	7.00000	5.00000
	1195	1196	1197	1198	1199	1200
fixed_acidity	7.00000	6.20000	7.90000	7.70000	7.7000	7.90000
volatile_acidity	0.74500	0.43000	0.58000	0.57000	0.2600	0.58000
citric_acid	0.12000	0.22000	0.23000	0.21000	0.2600	0.23000
residual_sugar	1.80000	1.80000	2.30000	1.50000	2.0000	2.30000
chlorides	0.11400	0.07800	0.07600	0.06900	0.0520	0.07600
free_sulfur_dioxide	15.00000	21.00000	23.00000	4.00000	19.0000	23.00000
total_sulfur_dioxide	64.00000	56.00000	94.00000	9.00000	77.0000	94.00000
density	0.99588	0.99633	0.99686	0.99458	0.9951	0.99686
pH	3.22000	3.52000	3.21000	3.16000	3.1500	3.21000
sulphates	0.59000	0.60000	0.58000	0.54000	0.7900	0.58000
alcohol	9.50000	9.50000	9.50000	9.80000	10.9000	9.50000
quality	6.00000	6.00000	6.00000	6.00000	6.0000	6.00000
	1201	1202	1203	1204	1205	1206
fixed_acidity	7.70000	7.90000	8.60000	9.90000	7.20000	7.20000
volatile_acidity	0.57000	0.34000	0.42000	0.74000	0.36000	0.36000
citric_acid	0.21000	0.36000	0.39000	0.19000	0.46000	0.46000
residual_sugar	1.50000	1.90000	1.80000	5.80000	2.10000	2.10000
chlorides	0.06900	0.06500	0.06800	0.11100	0.07400	0.07400
free_sulfur_dioxide	4.00000	5.00000	6.00000	33.00000	24.00000	24.00000
total_sulfur_dioxide	9.00000	10.00000	12.00000	76.00000	44.00000	44.00000
density	0.99458	0.99419	0.99516	0.99878	0.99534	0.99534
pH	3.16000	3.27000	3.35000	3.14000	3.40000	3.40000
sulphates	0.54000	0.54000	0.69000	0.55000	0.85000	0.85000
alcohol	9.80000	11.20000	11.70000	9.40000	11.00000	11.00000
quality	6.00000	7.00000	8.00000	5.00000	7.00000	7.00000
	1207	1208	1209	1210	1211	1212
fixed_acidity	7.20000	9.90000	7.20000	6.20000	6.80000	6.6000
volatile_acidity	0.36000	0.72000	0.36000	0.39000	0.65000	0.4400
citric_acid	0.46000	0.55000	0.46000	0.43000	0.02000	0.1500
residual_sugar	2.10000	1.70000	2.10000	2.00000	2.10000	2.1000
chlorides	0.07400	0.13600	0.07400	0.07100	0.07800	0.0760
free_sulfur_dioxide	24.00000	24.00000	24.00000	14.00000	8.00000	22.0000
total_sulfur_dioxide	44.00000	52.00000	44.00000	24.00000	15.00000	53.0000
density	0.99534	0.99752	0.99534	0.99428	0.99498	0.9957
pH	3.40000	3.35000	3.40000	3.45000	3.35000	3.3200
sulphates	0.85000	0.94000	0.85000	0.87000	0.62000	0.6200
alcohol	11.00000	10.00000	11.00000	11.20000	10.40000	9.3000
quality	7.00000	5.00000	7.00000	7.00000	6.00000	5.0000
	1213	1214	1215	1216	1217	1218

fixed_acidity	6.80000	9.60000	10.20000	8.80000	7.90000	8.20000
volatile_acidity	0.65000	0.38000	0.33000	0.27000	0.57000	0.34000
citric_acid	0.02000	0.42000	0.46000	0.46000	0.31000	0.37000
residual_sugar	2.10000	1.90000	1.90000	2.10000	2.00000	1.90000
chlorides	0.07800	0.07100	0.08100	0.09500	0.07900	0.05700
free_sulfur_dioxide	8.00000	5.00000	6.00000	20.00000	10.00000	43.00000
total_sulfur_dioxide	15.00000	13.00000	9.00000	29.00000	79.00000	74.00000
density	0.99498	0.99659	0.99628	0.99488	0.99677	0.99408
pH	3.35000	3.15000	3.10000	3.26000	3.29000	3.23000
sulphates	0.62000	0.75000	0.48000	0.56000	0.69000	0.81000
alcohol	10.40000	10.50000	10.40000	11.30000	9.50000	12.00000
quality	6.00000	6.00000	6.00000	6.00000	6.00000	6.00000
	1219	1220	1221	1222	1223	1224
fixed_acidity	8.200	9.00000	10.90000	10.90000	8.10000	10.50000
volatile_acidity	0.400	0.39000	0.32000	0.32000	0.53000	0.36000
citric_acid	0.310	0.40000	0.52000	0.52000	0.22000	0.47000
residual_sugar	1.900	1.30000	1.80000	1.80000	2.20000	2.20000
chlorides	0.082	0.04400	0.13200	0.13200	0.07800	0.07400
free_sulfur_dioxide	8.000	25.00000	17.00000	17.00000	33.00000	9.00000
total_sulfur_dioxide	24.000	50.00000	44.00000	44.00000	89.00000	23.00000
density	0.996	0.99478	0.99734	0.99734	0.99678	0.99638
pH	3.240	3.20000	3.28000	3.28000	3.26000	3.23000
sulphates	0.690	0.83000	0.77000	0.77000	0.46000	0.76000
alcohol	10.600	10.90000	11.50000	11.50000	9.60000	12.00000
quality	6.000	6.00000	6.00000	6.00000	6.00000	6.00000
	1225	1226	1227	1228	1229	1230
fixed_acidity	12.6000	9.20000	7.50000	9.00000	5.10000	7.60000
volatile_acidity	0.3900	0.46000	0.58000	0.58000	0.42000	0.43000
citric_acid	0.4900	0.23000	0.03000	0.25000	0.00000	0.29000
residual_sugar	2.5000	2.60000	4.10000	2.00000	1.80000	2.10000
chlorides	0.0800	0.09100	0.08000	0.10400	0.04400	0.07500
free_sulfur_dioxide	8.0000	18.00000	27.00000	8.00000	18.00000	19.00000
total_sulfur_dioxide	20.0000	77.00000	46.00000	21.00000	88.00000	66.00000
density	0.9992	0.99922	0.99592	0.99769	0.99157	0.99718
pH	3.0700	3.15000	3.02000	3.27000	3.68000	3.40000
sulphates	0.8200	0.51000	0.47000	0.72000	0.73000	0.64000
alcohol	10.3000	9.40000	9.20000	9.60000	13.60000	9.50000
quality	6.0000	5.00000	5.00000	5.00000	7.00000	5.00000
	1231	1232	1233	1234	1235	1236
fixed_acidity	7.7000	7.80000	7.60000	10.20000	7.10000	6.00000
volatile_acidity	0.1800	0.81500	0.43000	0.23000	0.75000	0.33000
citric_acid	0.3400	0.01000	0.29000	0.37000	0.01000	0.32000
residual_sugar	2.7000	2.60000	2.10000	2.20000	2.20000	12.90000
chlorides	0.0660	0.07400	0.07500	0.05700	0.05900	0.05400
free_sulfur_dioxide	15.0000	48.00000	19.00000	14.00000	11.00000	6.00000

total_sulfur_dioxide	58.0000	90.00000	66.00000	36.00000	18.00000	113.00000
density	0.9947	0.99621	0.99718	0.99614	0.99242	0.99572
pH	3.3700	3.38000	3.40000	3.23000	3.39000	3.30000
sulphates	0.7800	0.62000	0.64000	0.49000	0.40000	0.56000
alcohol	11.8000	10.80000	9.50000	9.30000	12.80000	11.50000
quality	6.0000	5.00000	5.00000	4.00000	6.00000	4.00000
	1237	1238	1239	1240	1241	1242
fixed_acidity	7.80000	7.10000	8.10000	6.50000	7.50000	9.80000
volatile_acidity	0.55000	0.75000	0.73000	0.67000	0.61000	0.37000
citric_acid	0.00000	0.01000	0.00000	0.00000	0.20000	0.39000
residual_sugar	1.70000	2.20000	2.50000	4.30000	1.70000	2.50000
chlorides	0.07000	0.05900	0.08100	0.05700	0.07600	0.07900
free_sulfur_dioxide	7.00000	11.00000	12.00000	11.00000	36.00000	28.00000
total_sulfur_dioxide	17.00000	18.00000	24.00000	20.00000	60.00000	65.00000
density	0.99659	0.99242	0.99798	0.99488	0.99494	0.99729
pH	3.26000	3.39000	3.38000	3.45000	3.10000	3.16000
sulphates	0.64000	0.40000	0.46000	0.56000	0.40000	0.59000
alcohol	9.40000	12.80000	9.60000	11.80000	9.30000	9.80000
quality	6.00000	6.00000	4.00000	4.00000	5.00000	5.00000
	1243	1244	1245	1246	1247	1248
fixed_acidity	9.00000	8.3000	5.90000	7.40000	7.40000	7.40000
volatile_acidity	0.40000	0.5600	0.29000	0.55000	0.74000	0.55000
citric_acid	0.41000	0.2200	0.25000	0.19000	0.07000	0.19000
residual_sugar	2.00000	2.4000	13.40000	1.80000	1.70000	1.80000
chlorides	0.05800	0.0820	0.06700	0.08200	0.08600	0.08200
free_sulfur_dioxide	15.00000	10.0000	72.00000	15.00000	15.00000	15.00000
total_sulfur_dioxide	40.00000	86.0000	160.00000	34.00000	48.00000	34.00000
density	0.99414	0.9983	0.99721	0.99655	0.99502	0.99655
pH	3.22000	3.3700	3.33000	3.49000	3.12000	3.49000
sulphates	0.60000	0.6200	0.54000	0.68000	0.48000	0.68000
alcohol	12.20000	9.5000	10.30000	10.50000	10.00000	10.50000
quality	6.00000	5.0000	6.00000	5.00000	5.00000	5.00000
	1249	1250	1251	1252	1253	1254
fixed_acidity	6.9000	7.10000	7.10000	7.5000	7.10000	7.90000
volatile_acidity	0.4100	0.60000	0.60000	0.5800	0.72000	0.66000
citric_acid	0.3300	0.01000	0.01000	0.1400	0.00000	0.00000
residual_sugar	2.2000	2.30000	2.30000	2.2000	1.80000	1.40000
chlorides	0.0810	0.07900	0.07900	0.0770	0.12300	0.09600
free_sulfur_dioxide	22.0000	24.00000	24.00000	27.0000	6.00000	6.00000
total_sulfur_dioxide	36.0000	37.00000	37.00000	60.0000	14.00000	13.00000
density	0.9949	0.99514	0.99514	0.9963	0.99627	0.99569
pH	3.4100	3.40000	3.40000	3.2800	3.45000	3.43000
sulphates	0.7500	0.61000	0.61000	0.5900	0.58000	0.58000
alcohol	11.1000	10.90000	10.90000	9.8000	9.80000	9.50000
quality	6.0000	6.00000	6.00000	5.0000	5.00000	5.00000

	1255	1256	1257	1258	1259	1260	
fixed_acidity	7.80000	6.10000	7.50000	7.00000	6.80000	6.80000	
volatile_acidity	0.70000	0.64000	0.59000	0.58000	0.64000	0.64000	
citric_acid	0.06000	0.02000	0.22000	0.28000	0.00000	0.00000	
residual_sugar	1.90000	2.40000	1.80000	4.80000	2.70000	2.70000	
chlorides	0.07900	0.06900	0.08200	0.08500	0.12300	0.12300	
free_sulfur_dioxide	20.00000	26.00000	43.00000	12.00000	15.00000	15.00000	
total_sulfur_dioxide	35.00000	46.00000	60.00000	69.00000	33.00000	33.00000	
density	0.99628	0.99358	0.99499	0.99633	0.99538	0.99538	
pH	3.40000	3.47000	3.10000	3.32000	3.44000	3.44000	
sulphates	0.69000	0.45000	0.42000	0.70000	0.63000	0.63000	
alcohol	10.90000	11.00000	9.20000	11.00000	11.30000	11.30000	
quality	5.00000	5.00000	5.00000	6.00000	6.00000	6.00000	
	1261	1262	1263	1264	1265	1266	
fixed_acidity	8.60000	6.30000	9.80000	8.2000	8.50000	7.20000	
volatile_acidity	0.63500	1.02000	0.45000	0.7800	0.37000	0.57000	
citric_acid	0.68000	0.00000	0.38000	0.0000	0.32000	0.05000	
residual_sugar	1.80000	2.00000	2.50000	2.2000	1.80000	2.30000	
chlorides	0.40300	0.08300	0.08100	0.0890	0.06600	0.08100	
free_sulfur_dioxide	19.00000	17.00000	34.00000	13.0000	26.00000	16.00000	
total_sulfur_dioxide	56.00000	24.00000	66.00000	26.0000	51.00000	36.00000	
density	0.99632	0.99437	0.99726	0.9978	0.99456	0.99564	
pH	3.02000	3.59000	3.15000	3.3700	3.38000	3.38000	
sulphates	1.15000	0.55000	0.58000	0.4600	0.72000	0.60000	
alcohol	9.30000	11.20000	9.80000	9.6000	11.80000	10.30000	
quality	5.00000	4.00000	5.00000	4.0000	6.00000	6.00000	
	1267	1268	1269	1270	1271	1272	
fixed_acidity	7.20000	10.400	6.90000	5.5000	5.00000	7.3000	5.90000
volatile_acidity	0.57000	0.430	0.41000	0.4900	0.38000	0.4400	0.46000
citric_acid	0.05000	0.500	0.31000	0.0300	0.01000	0.2000	0.00000
residual_sugar	2.30000	2.300	2.00000	1.8000	1.60000	1.6000	1.90000
chlorides	0.08100	0.068	0.07900	0.0440	0.04800	0.0490	0.07700
free_sulfur_dioxide	16.00000	13.000	21.00000	28.0000	26.00000	24.0000	25.00000
total_sulfur_dioxide	36.00000	19.000	51.00000	87.0000	60.00000	64.0000	44.00000
density	0.99564	0.996	0.99668	0.9908	0.99084	0.9935	0.99385
pH	3.38000	3.100	3.47000	3.5000	3.70000	3.3800	3.50000
sulphates	0.60000	0.870	0.55000	0.8200	0.75000	0.5700	0.53000
alcohol	10.30000	11.400	9.50000	14.0000	14.00000	11.7000	11.20000
quality	6.00000	6.000	6.00000	8.0000	6.00000	6.0000	5.00000
	1274	1275	1276	1277	1278	1279	
fixed_acidity	7.50000	7.8000	8.00000	8.50000	7.00000	8.00000	
volatile_acidity	0.58000	0.5800	0.71500	0.40000	0.69000	0.71500	
citric_acid	0.20000	0.1300	0.22000	0.40000	0.00000	0.22000	
residual_sugar	2.00000	2.1000	2.30000	6.30000	1.90000	2.30000	
chlorides	0.07300	0.1020	0.07500	0.05000	0.11400	0.07500	

free_sulfur_dioxide	34.00000	17.0000	13.00000	3.00000	3.00000	13.00000
total_sulfur_dioxide	44.00000	36.0000	81.00000	10.00000	10.00000	81.00000
density	0.99494	0.9944	0.99688	0.99566	0.99636	0.99688
pH	3.10000	3.2400	3.24000	3.28000	3.35000	3.24000
sulphates	0.43000	0.5300	0.54000	0.56000	0.60000	0.54000
alcohol	9.30000	11.2000	9.50000	12.00000	9.70000	9.50000
quality	5.00000	6.0000	6.00000	4.00000	6.00000	6.00000
	1280	1281	1282	1283	1284	1285
fixed_acidity	9.8000	7.1000	7.1000	7.90000	8.70000	7.00000
volatile_acidity	0.3000	0.4600	0.4600	0.76500	0.63000	0.42000
citric_acid	0.3900	0.2000	0.2000	0.00000	0.28000	0.19000
residual_sugar	1.7000	1.9000	1.9000	2.00000	2.70000	2.30000
chlorides	0.0620	0.0770	0.0770	0.08400	0.09600	0.07100
free_sulfur_dioxide	3.0000	28.0000	28.0000	9.00000	17.00000	18.00000
total_sulfur_dioxide	9.0000	54.0000	54.0000	22.00000	69.00000	36.00000
density	0.9948	0.9956	0.9956	0.99619	0.99734	0.99476
pH	3.1400	3.3700	3.3700	3.33000	3.26000	3.39000
sulphates	0.5700	0.6400	0.6400	0.68000	0.63000	0.56000
alcohol	11.5000	10.4000	10.4000	10.90000	10.20000	10.90000
quality	7.0000	6.0000	6.0000	6.00000	6.00000	5.00000
	1286	1287	1288	1289	1290	1291
fixed_acidity	11.30000	7.10000	8.00000	7.00000	7.00000	7.60000
volatile_acidity	0.37000	0.16000	0.60000	0.60000	0.60000	0.74000
citric_acid	0.50000	0.44000	0.08000	0.30000	0.30000	0.00000
residual_sugar	1.80000	2.50000	2.60000	4.50000	4.50000	1.90000
chlorides	0.09000	0.06800	0.05600	0.06800	0.06800	0.10000
free_sulfur_dioxide	20.00000	17.00000	3.00000	20.00000	20.00000	6.00000
total_sulfur_dioxide	47.00000	31.00000	7.00000	110.00000	110.00000	12.00000
density	0.99734	0.99328	0.99286	0.99914	0.99914	0.99521
pH	3.15000	3.35000	3.22000	3.30000	3.30000	3.36000
sulphates	0.57000	0.54000	0.37000	1.17000	1.17000	0.59000
alcohol	10.50000	12.40000	13.00000	10.20000	10.20000	11.00000
quality	5.00000	6.00000	5.00000	5.00000	5.00000	5.00000
	1292	1293	1294	1295	1296	1297
fixed_acidity	8.20000	5.90000	7.50000	8.20000	6.60000	6.60000
volatile_acidity	0.63500	0.39500	0.75500	0.63500	0.63000	0.63000
citric_acid	0.10000	0.13000	0.00000	0.10000	0.00000	0.00000
residual_sugar	2.10000	2.40000	1.90000	2.10000	4.30000	4.30000
chlorides	0.07300	0.05600	0.08400	0.07300	0.09300	0.09300
free_sulfur_dioxide	25.00000	14.00000	6.00000	25.00000	51.00000	51.00000
total_sulfur_dioxide	60.00000	28.00000	12.00000	60.00000	77.50000	77.50000
density	0.99638	0.99362	0.99672	0.99638	0.99558	0.99558
pH	3.29000	3.62000	3.34000	3.29000	3.20000	3.20000
sulphates	0.75000	0.67000	0.49000	0.75000	0.45000	0.45000
alcohol	10.90000	12.40000	9.70000	10.90000	9.50000	9.50000

quality	6.00000	6.00000	4.00000	6.00000	5.00000	5.00000
	1298	1299	1300	1301	1302	1303
fixed_acidity	7.20000	5.70000	7.60000	5.20000	6.70000	9.10000
volatile_acidity	0.53000	0.60000	1.58000	0.64500	0.86000	0.37000
citric_acid	0.14000	0.00000	0.00000	0.00000	0.07000	0.32000
residual_sugar	2.10000	1.40000	2.10000	2.15000	2.00000	2.10000
chlorides	0.06400	0.06300	0.13700	0.08000	0.10000	0.06400
free_sulfur_dioxide	15.00000	11.00000	5.00000	15.00000	20.00000	4.00000
total_sulfur_dioxide	29.00000	18.00000	9.00000	28.00000	57.00000	15.00000
density	0.99323	0.99191	0.99476	0.99444	0.99598	0.99576
pH	3.35000	3.45000	3.50000	3.78000	3.60000	3.30000
sulphates	0.61000	0.56000	0.40000	0.61000	0.74000	0.80000
alcohol	12.10000	12.20000	10.90000	12.50000	11.70000	11.20000
quality	6.00000	6.00000	3.00000	6.00000	6.00000	6.00000
	1304	1305	1306	1307	1308	1309
fixed_acidity	8.00000	7.6000	7.50000	9.7000	6.80000	9.7000
volatile_acidity	0.28000	0.7900	0.61000	0.6900	0.68000	0.6900
citric_acid	0.44000	0.2100	0.26000	0.3200	0.09000	0.3200
residual_sugar	1.80000	2.3000	1.90000	2.5000	3.90000	2.5000
chlorides	0.08100	0.0870	0.07300	0.0880	0.06800	0.0880
free_sulfur_dioxide	28.00000	21.0000	24.00000	22.0000	15.00000	22.0000
total_sulfur_dioxide	68.00000	68.0000	88.00000	91.0000	29.00000	91.0000
density	0.99501	0.9955	0.99612	0.9979	0.99524	0.9979
pH	3.36000	3.1200	3.30000	3.2900	3.41000	3.2900
sulphates	0.66000	0.4400	0.53000	0.6200	0.52000	0.6200
alcohol	11.20000	9.2000	9.80000	10.1000	11.10000	10.1000
quality	5.00000	5.0000	5.00000	5.0000	4.00000	5.0000
	1311	1312	1313	1314	1315	1316
fixed_acidity	7.50000	6.5000	8.00000	7.00000	7.00000	7.50000
volatile_acidity	0.61000	0.5100	1.18000	0.36000	0.36000	0.63000
citric_acid	0.26000	0.1500	0.21000	0.21000	0.21000	0.27000
residual_sugar	1.90000	3.0000	1.90000	2.30000	2.40000	2.00000
chlorides	0.07300	0.0640	0.08300	0.08600	0.08600	0.08300
free_sulfur_dioxide	24.00000	12.0000	14.00000	20.00000	24.00000	17.00000
total_sulfur_dioxide	88.00000	27.0000	41.00000	65.00000	69.00000	91.00000
density	0.99612	0.9929	0.99532	0.99558	0.99556	0.99616
pH	3.30000	3.3300	3.34000	3.40000	3.40000	3.26000
sulphates	0.53000	0.5900	0.47000	0.54000	0.53000	0.58000
alcohol	9.80000	12.8000	10.50000	10.10000	10.10000	9.80000
quality	5.00000	6.0000	5.00000	6.00000	6.00000	6.00000
	1317	1318	1319	1320	1321	1322
fixed_acidity	5.40000	9.90000	7.50000	9.10000	9.70000	5.00000
volatile_acidity	0.74000	0.44000	0.63000	0.76000	0.66000	0.74000
citric_acid	0.00000	0.46000	0.27000	0.68000	0.34000	0.00000
residual_sugar	1.20000	2.20000	2.00000	1.70000	2.60000	1.20000

chlorides	0.04100	0.09100	0.08300	0.41400	0.09400	0.04100
free_sulfur_dioxide	16.00000	10.00000	17.00000	18.00000	12.00000	16.00000
total_sulfur_dioxide	46.00000	41.00000	91.00000	64.00000	88.00000	46.00000
density	0.99258	0.99638	0.99616	0.99652	0.99796	0.99258
pH	4.01000	3.18000	3.26000	2.90000	3.26000	4.01000
sulphates	0.59000	0.69000	0.58000	1.33000	0.66000	0.59000
alcohol	12.50000	11.90000	9.80000	9.10000	10.10000	12.50000
quality	6.00000	6.00000	6.00000	6.00000	5.00000	6.00000
	1323	1324	1325	1326	1327	1328
fixed_acidity	9.10000	9.10000	6.7000	6.7000	6.7000	6.5000
volatile_acidity	0.34000	0.36000	0.4600	0.4600	0.4600	0.4600
citric_acid	0.42000	0.39000	0.2400	0.2400	0.2400	0.2400
residual_sugar	1.80000	1.80000	1.7000	1.7000	1.7000	1.8000
chlorides	0.05800	0.06000	0.0770	0.0770	0.0770	0.0730
free_sulfur_dioxide	9.00000	21.00000	18.0000	18.0000	18.0000	18.0000
total_sulfur_dioxide	18.00000	55.00000	34.0000	34.0000	34.0000	34.0000
density	0.99392	0.99495	0.9948	0.9948	0.9948	0.9948
pH	3.18000	3.18000	3.3900	3.3900	3.3900	3.3900
sulphates	0.55000	0.82000	0.6000	0.6000	0.6000	0.5200
alcohol	11.40000	11.00000	10.6000	10.6000	10.6000	10.6000
quality	5.00000	7.00000	6.0000	6.0000	6.0000	5.0000
	1330	1331	1332	1333	1334	1335
fixed_acidity	7.40000	7.40000	7.80000	8.40000	9.1000	7.20000
volatile_acidity	0.60000	0.60000	0.87000	0.39000	0.7750	0.83500
citric_acid	0.26000	0.26000	0.26000	0.10000	0.2200	0.00000
residual_sugar	2.10000	2.10000	3.80000	1.70000	2.2000	2.00000
chlorides	0.08300	0.08300	0.10700	0.07500	0.0790	0.16600
free_sulfur_dioxide	17.00000	17.00000	31.00000	6.00000	12.0000	4.00000
total_sulfur_dioxide	91.00000	91.00000	67.00000	25.00000	48.0000	11.00000
density	0.99616	0.99616	0.99668	0.99581	0.9976	0.99608
pH	3.29000	3.29000	3.26000	3.09000	3.1800	3.39000
sulphates	0.56000	0.56000	0.46000	0.43000	0.5100	0.52000
alcohol	9.80000	9.80000	9.20000	9.70000	9.6000	10.00000
quality	6.00000	6.00000	5.00000	6.00000	5.0000	5.00000
	1336	1337	1338	1339	1340	1341
fixed_acidity	6.60000	6.00000	6.00000	6.00000	7.50000	7.50000
volatile_acidity	0.58000	0.50000	0.50000	0.50000	0.51000	0.51000
citric_acid	0.02000	0.00000	0.00000	0.00000	0.02000	0.02000
residual_sugar	2.40000	1.40000	1.40000	1.40000	1.70000	1.70000
chlorides	0.06900	0.05700	0.05700	0.05700	0.08400	0.08400
free_sulfur_dioxide	19.00000	15.00000	15.00000	15.00000	13.00000	13.00000
total_sulfur_dioxide	40.00000	26.00000	26.00000	26.00000	31.00000	31.00000
density	0.99387	0.99448	0.99448	0.99448	0.99538	0.99538
pH	3.38000	3.36000	3.36000	3.36000	3.36000	3.36000
sulphates	0.66000	0.45000	0.45000	0.45000	0.54000	0.54000

alcohol	12.60000	9.50000	9.50000	9.50000	10.50000	10.50000
quality	6.00000	5.00000	5.00000	5.00000	6.00000	6.00000
	1342	1343	1344	1345	1346	1347
fixed_acidity	7.50000	7.60000	7.50000	11.50000	8.20000	6.10000
volatile_acidity	0.51000	0.54000	0.51000	0.42000	0.44000	0.59000
citric_acid	0.02000	0.02000	0.02000	0.48000	0.24000	0.01000
residual_sugar	1.70000	1.70000	1.70000	2.60000	2.30000	2.10000
chlorides	0.08400	0.08500	0.08400	0.07700	0.06300	0.05600
free_sulfur_dioxide	13.00000	17.00000	13.00000	8.00000	10.00000	5.00000
total_sulfur_dioxide	31.00000	31.00000	31.00000	20.00000	28.00000	13.00000
density	0.99538	0.99589	0.99538	0.99852	0.99613	0.99472
pH	3.36000	3.37000	3.36000	3.09000	3.25000	3.52000
sulphates	0.54000	0.51000	0.54000	0.53000	0.53000	0.56000
alcohol	10.50000	10.40000	10.50000	11.00000	10.20000	11.40000
quality	6.00000	6.00000	6.00000	5.00000	6.00000	5.00000
	1348	1349	1350	1351	1352	1353
fixed_acidity	7.20000	7.20000	6.90000	9.00000	7.20000	7.6000
volatile_acidity	0.65500	0.65500	0.57000	0.60000	0.62000	0.6450
citric_acid	0.03000	0.03000	0.00000	0.29000	0.01000	0.0300
residual_sugar	1.80000	1.80000	2.80000	2.00000	2.30000	1.9000
chlorides	0.07800	0.07800	0.08100	0.06900	0.06500	0.0860
free_sulfur_dioxide	7.00000	7.00000	21.00000	32.00000	8.00000	14.0000
total_sulfur_dioxide	12.00000	12.00000	41.00000	73.00000	46.00000	57.0000
density	0.99587	0.99587	0.99518	0.99654	0.99332	0.9969
pH	3.34000	3.34000	3.41000	3.34000	3.32000	3.3700
sulphates	0.39000	0.39000	0.52000	0.57000	0.51000	0.4600
alcohol	9.50000	9.50000	10.80000	10.00000	11.80000	10.3000
quality	5.00000	5.00000	5.00000	5.00000	6.00000	5.0000
	1354	1355	1356	1357	1358	1359
fixed_acidity	7.6000	7.20000	6.10000	6.10000	7.30000	7.40000
volatile_acidity	0.6450	0.58000	0.32000	0.34000	0.43000	0.64000
citric_acid	0.0300	0.03000	0.25000	0.25000	0.24000	0.17000
residual_sugar	1.9000	2.30000	1.80000	1.80000	2.50000	5.40000
chlorides	0.0860	0.07700	0.08600	0.08400	0.07800	0.16800
free_sulfur_dioxide	14.0000	7.00000	5.00000	4.00000	27.00000	52.00000
total_sulfur_dioxide	57.0000	28.00000	32.00000	28.00000	67.00000	98.00000
density	0.9969	0.99568	0.99464	0.99464	0.99648	0.99736
pH	3.3700	3.35000	3.36000	3.36000	3.60000	3.28000
sulphates	0.4600	0.52000	0.44000	0.44000	0.59000	0.50000
alcohol	10.3000	10.00000	10.10000	10.10000	11.10000	9.50000
quality	5.0000	5.00000	5.00000	5.00000	6.00000	5.00000
	1360	1361	1362	1363	1364	1365
fixed_acidity	11.60000	9.20000	8.30000	11.60000	8.00000	7.200
volatile_acidity	0.47500	0.54000	0.85000	0.47500	0.83000	0.605
citric_acid	0.40000	0.31000	0.14000	0.40000	0.27000	0.020

residual_sugar	1.40000	2.30000	2.50000	1.40000	2.00000	1.900
chlorides	0.09100	0.11200	0.09300	0.09100	0.08000	0.096
free_sulfur_dioxide	6.00000	11.00000	13.00000	6.00000	11.00000	10.000
total_sulfur_dioxide	28.00000	38.00000	54.00000	28.00000	63.00000	31.000
density	0.99704	0.99699	0.99724	0.99704	0.99652	0.995
pH	3.07000	3.24000	3.36000	3.07000	3.29000	3.460
sulphates	0.65000	0.56000	0.54000	0.65000	0.48000	0.530
alcohol	10.03333	10.90000	10.10000	10.03333	9.80000	11.800
quality	6.00000	5.00000	5.00000	6.00000	4.00000	6.000
	1366	1367	1368	1369	1370	1371
fixed_acidity	7.8000	7.30000	6.90000	8.00000	6.60000	8.70000
volatile_acidity	0.5000	0.74000	0.54000	0.77000	0.61000	0.78000
citric_acid	0.0900	0.08000	0.30000	0.32000	0.00000	0.51000
residual_sugar	2.2000	1.70000	2.20000	2.10000	1.60000	1.70000
chlorides	0.1150	0.09400	0.08800	0.07900	0.06900	0.41500
free_sulfur_dioxide	10.0000	10.00000	9.00000	16.00000	4.00000	12.00000
total_sulfur_dioxide	42.0000	45.00000	105.00000	74.00000	8.00000	66.00000
density	0.9971	0.99576	0.99725	0.99656	0.99396	0.99623
pH	3.1800	3.24000	3.25000	3.27000	3.33000	3.00000
sulphates	0.6200	0.50000	1.18000	0.50000	0.37000	1.17000
alcohol	9.5000	9.80000	10.50000	9.80000	10.40000	9.20000
quality	5.0000	5.00000	6.00000	6.00000	4.00000	5.00000
	1372	1373	1374	1375	1376	1377
fixed_acidity	7.50000	8.70000	7.70000	6.80000	7.20000	8.2000
volatile_acidity	0.58000	0.78000	0.75000	0.81500	0.56000	0.8850
citric_acid	0.56000	0.51000	0.27000	0.00000	0.26000	0.2000
residual_sugar	3.10000	1.70000	3.80000	1.20000	2.00000	1.4000
chlorides	0.15300	0.41500	0.11000	0.26700	0.08300	0.0860
free_sulfur_dioxide	5.00000	12.00000	34.00000	16.00000	13.00000	7.0000
total_sulfur_dioxide	14.00000	66.00000	89.00000	29.00000	100.00000	31.0000
density	0.99476	0.99623	0.99664	0.99471	0.99586	0.9946
pH	3.21000	3.00000	3.24000	3.32000	3.26000	3.1100
sulphates	1.03000	1.17000	0.45000	0.51000	0.52000	0.4600
alcohol	11.60000	9.20000	9.30000	9.80000	9.90000	10.0000
quality	6.00000	5.00000	5.00000	3.00000	5.00000	5.0000
	1378	1379	1380	1381	1382	1383
fixed_acidity	5.2000	7.20000	7.50000	7.50000	6.80000	8.00000
volatile_acidity	0.4900	0.45000	0.57000	0.57000	0.83000	0.60000
citric_acid	0.2600	0.15000	0.02000	0.02000	0.09000	0.22000
residual_sugar	2.3000	2.00000	2.60000	2.60000	1.80000	2.10000
chlorides	0.0900	0.07800	0.07700	0.07700	0.07400	0.08000
free_sulfur_dioxide	23.0000	10.00000	11.00000	11.00000	4.00000	25.00000
total_sulfur_dioxide	74.0000	28.00000	35.00000	35.00000	25.00000	105.00000
density	0.9953	0.99609	0.99557	0.99557	0.99534	0.99613
pH	3.7100	3.29000	3.36000	3.36000	3.38000	3.30000

sulphates	0.6200	0.51000	0.62000	0.62000	0.45000	0.49000
alcohol	12.2000	9.90000	10.80000	10.80000	9.60000	9.90000
quality	6.0000	6.00000	6.00000	6.00000	5.00000	5.00000
	1384	1385	1386	1387	1388	1389
fixed_acidity	8.00000	7.10000	8.00000	7.4000	7.4000	6.60000
volatile_acidity	0.60000	0.75500	0.81000	0.6400	0.6400	0.64000
citric_acid	0.22000	0.15000	0.25000	0.0700	0.0700	0.31000
residual_sugar	2.10000	1.80000	3.40000	1.8000	1.8000	6.10000
chlorides	0.08000	0.10700	0.07600	0.1000	0.1000	0.08300
free_sulfur_dioxide	25.00000	20.00000	34.00000	8.0000	8.0000	7.00000
total_sulfur_dioxide	105.00000	84.00000	85.00000	23.0000	23.0000	49.00000
density	0.99613	0.99593	0.99668	0.9961	0.9961	0.99718
pH	3.30000	3.19000	3.19000	3.3000	3.3000	3.35000
sulphates	0.49000	0.50000	0.42000	0.5800	0.5800	0.68000
alcohol	9.90000	9.50000	9.20000	9.6000	9.6000	10.30000
quality	5.00000	5.00000	5.00000	5.0000	5.0000	5.00000
	1390	1391	1392	1393	1394	1395
fixed_acidity	6.70000	6.00000	8.00000	7.1000	8.00000	6.40000
volatile_acidity	0.48000	0.49000	0.64000	0.6200	0.52000	0.57000
citric_acid	0.02000	0.00000	0.22000	0.0600	0.25000	0.14000
residual_sugar	2.20000	2.30000	2.40000	1.3000	2.00000	3.90000
chlorides	0.08000	0.06800	0.09400	0.0700	0.07800	0.07000
free_sulfur_dioxide	36.00000	15.00000	5.00000	5.0000	19.00000	27.00000
total_sulfur_dioxide	111.00000	33.00000	33.00000	12.0000	59.00000	73.00000
density	0.99524	0.99292	0.99612	0.9942	0.99612	0.99669
pH	3.10000	3.58000	3.37000	3.1700	3.30000	3.32000
sulphates	0.53000	0.59000	0.58000	0.4800	0.48000	0.48000
alcohol	9.70000	12.50000	11.00000	9.8000	10.20000	9.20000
quality	5.00000	6.00000	5.00000	5.0000	5.00000	5.00000
	1396	1397	1398	1399	1400	1401
fixed_acidity	8.60000	8.70000	7.30000	7.0000	7.2000	7.9000
volatile_acidity	0.68500	0.67500	0.59000	0.6000	0.6700	0.6900
citric_acid	0.10000	0.10000	0.26000	0.1200	0.0000	0.2100
residual_sugar	1.60000	1.60000	2.00000	2.2000	2.2000	2.1000
chlorides	0.09200	0.09000	0.08000	0.0830	0.0680	0.0800
free_sulfur_dioxide	3.00000	4.00000	17.00000	13.0000	10.0000	33.0000
total_sulfur_dioxide	12.00000	11.00000	104.00000	28.0000	24.0000	141.0000
density	0.99745	0.99745	0.99584	0.9966	0.9956	0.9962
pH	3.31000	3.31000	3.28000	3.5200	3.4200	3.2500
sulphates	0.65000	0.65000	0.52000	0.6200	0.7200	0.5100
alcohol	9.55000	9.55000	9.90000	10.2000	11.1000	9.9000
quality	6.00000	5.00000	5.00000	7.0000	6.0000	5.0000
	1402	1403	1404	1405	1406	1407
fixed_acidity	7.9000	7.6000	7.200	8.0000	7.7000	8.2000
volatile_acidity	0.6900	0.3000	0.330	0.5000	0.2800	0.2400
	1408					

citric_acid	0.2100	0.4200	0.330	0.3900	0.3000	0.3400	0.000
residual_sugar	2.1000	2.0000	1.700	2.6000	2.0000	5.1000	2.100
chlorides	0.0800	0.0520	0.061	0.0820	0.0620	0.0620	0.064
free_sulfur_dioxide	33.0000	6.0000	3.000	12.0000	18.0000	8.0000	40.000
total_sulfur_dioxide	141.0000	24.0000	13.000	46.0000	34.0000	22.0000	54.000
density	0.9962	0.9963	0.996	0.9985	0.9952	0.9974	0.995
pH	3.2500	3.4400	3.230	3.4300	3.2800	3.2200	3.540
sulphates	0.5100	0.8200	1.100	0.6200	0.9000	0.9400	0.930
alcohol	9.9000	11.9000	10.000	10.7000	11.3000	10.9000	10.700
quality	5.0000	6.0000	8.000	6.0000	7.0000	6.0000	6.000
	1409	1410	1411	1412	1413	1414	1415
fixed_acidity	8.100	6.000	6.6000	6.4000	8.2000	9.9000	10.0000
volatile_acidity	0.290	0.510	0.9600	0.4700	0.2400	0.5700	0.3200
citric_acid	0.360	0.000	0.0000	0.4000	0.3400	0.2500	0.5900
residual_sugar	2.200	2.100	1.8000	2.4000	5.1000	2.0000	2.2000
chlorides	0.048	0.064	0.0820	0.0710	0.0620	0.1040	0.0770
free_sulfur_dioxide	35.000	40.000	5.0000	8.0000	8.0000	12.0000	3.0000
total_sulfur_dioxide	53.000	54.000	16.0000	19.0000	22.0000	89.0000	15.0000
density	0.995	0.995	0.9936	0.9963	0.9974	0.9963	0.9994
pH	3.270	3.540	3.5000	3.5600	3.2200	3.0400	3.2000
sulphates	1.010	0.930	0.4400	0.7300	0.9400	0.9000	0.7800
alcohol	12.400	10.700	11.9000	10.6000	10.9000	10.1000	9.6000
quality	7.000	6.000	6.0000	6.0000	6.0000	5.0000	5.0000
	1416	1417	1418	1419	1420	1421	1422
fixed_acidity	6.2000	10.0000	7.3000	7.800	7.7000	7.800	7.5000
volatile_acidity	0.5800	0.3200	0.3400	0.530	0.6400	0.530	0.4000
citric_acid	0.0000	0.5900	0.3300	0.010	0.2100	0.010	0.1800
residual_sugar	1.6000	2.2000	2.5000	1.600	2.2000	1.600	1.6000
chlorides	0.0650	0.0770	0.0640	0.077	0.0770	0.077	0.0790
free_sulfur_dioxide	8.0000	3.0000	21.0000	3.000	32.0000	3.000	24.0000
total_sulfur_dioxide	18.0000	15.0000	37.0000	19.000	133.0000	19.000	58.0000
density	0.9966	0.9994	0.9952	0.995	0.9956	0.995	0.9965
pH	3.5600	3.2000	3.3500	3.160	3.2700	3.160	3.3400
sulphates	0.8400	0.7800	0.7700	0.460	0.4500	0.460	0.5800
alcohol	9.4000	9.6000	12.1000	9.800	9.9000	9.800	9.4000
quality	5.0000	5.0000	7.0000	5.000	5.0000	5.000	5.0000
	1423	1424	1425	1426	1427	1428	1429
fixed_acidity	7.0000	6.4000	8.3000	8.3000	7.7000	7.6000	7.8000
volatile_acidity	0.5400	0.5300	0.2600	0.2600	0.2300	0.4100	0.6400
citric_acid	0.0000	0.0900	0.3700	0.3700	0.3700	0.3300	0.0000
residual_sugar	2.1000	3.9000	1.4000	1.4000	1.8000	2.5000	1.9000
chlorides	0.0790	0.1230	0.0760	0.0760	0.0460	0.0780	0.0720
free_sulfur_dioxide	39.0000	14.0000	8.0000	8.0000	23.0000	6.0000	27.0000
total_sulfur_dioxide	55.0000	31.0000	23.0000	23.0000	60.0000	23.0000	55.0000
density	0.9956	0.9968	0.9974	0.9974	0.9971	0.9957	0.9962

pH	3.3900	3.5000	3.2600	3.2600	3.4100	3.3000	3.3100
sulphates	0.8400	0.6700	0.7000	0.7000	0.7100	0.5800	0.6300
alcohol	11.4000	11.0000	9.6000	9.6000	12.1000	11.2000	11.0000
quality	6.0000	4.0000	6.0000	6.0000	6.0000	5.0000	5.0000
	1430	1431	1432	1433	1434	1435	1436
fixed_acidity	7.900	7.4000	7.6000	5.9000	6.1000	10.20000	10.20000
volatile_acidity	0.180	0.4100	0.4300	0.4400	0.4000	0.54000	0.54000
citric_acid	0.400	0.2400	0.3100	0.0000	0.1600	0.37000	0.37000
residual_sugar	2.200	1.8000	2.1000	1.6000	1.8000	15.40000	15.40000
chlorides	0.049	0.0660	0.0690	0.0420	0.0690	0.21400	0.21400
free_sulfur_dioxide	38.000	18.0000	13.0000	3.0000	11.0000	55.00000	55.00000
total_sulfur_dioxide	67.000	47.0000	74.0000	11.0000	25.0000	95.00000	95.00000
density	0.996	0.9956	0.9958	0.9944	0.9955	1.00369	1.00369
pH	3.330	3.3700	3.2600	3.4800	3.4200	3.18000	3.18000
sulphates	0.930	0.6200	0.5400	0.8500	0.7400	0.77000	0.77000
alcohol	11.300	10.4000	9.9000	11.7000	10.1000	9.00000	9.00000
quality	5.000	5.0000	6.0000	6.0000	7.0000	6.00000	6.00000
	1437	1438	1439	1440	1441	1442	
fixed_acidity	10.00000	6.80000	7.000	7.30000	7.2000	7.400000	
volatile_acidity	0.38000	0.91500	0.590	0.67000	0.3700	0.785000	
citric_acid	0.38000	0.29000	0.000	0.02000	0.3200	0.190000	
residual_sugar	1.60000	4.80000	1.700	2.20000	2.0000	5.200000	
chlorides	0.16900	0.07000	0.052	0.07200	0.0620	0.094000	
free_sulfur_dioxide	27.00000	15.00000	3.000	31.00000	15.0000	19.000000	
total_sulfur_dioxide	90.00000	39.00000	8.000	92.00000	28.0000	98.000000	
density	0.99914	0.99577	0.996	0.99566	0.9947	0.997130	
pH	3.15000	3.53000	3.410	3.32000	3.2300	3.160000	
sulphates	0.65000	0.54000	0.470	0.68000	0.7300	0.520000	
alcohol	8.50000	11.10000	10.300	11.06667	11.3000	9.566667	
quality	5.00000	5.00000	5.000	6.00000	7.0000	6.000000	
	1443	1444	1445	1446	1447	1448	
fixed_acidity	6.90000	6.90000	7.30000	7.40000	6.90000	6.80000	
volatile_acidity	0.63000	0.58000	0.67000	0.78500	0.63000	0.67000	
citric_acid	0.02000	0.20000	0.02000	0.19000	0.02000	0.00000	
residual_sugar	1.90000	1.75000	2.20000	5.20000	1.90000	1.90000	
chlorides	0.07800	0.05800	0.07200	0.09400	0.07800	0.08000	
free_sulfur_dioxide	18.00000	8.00000	31.00000	19.00000	18.00000	22.00000	
total_sulfur_dioxide	30.00000	22.00000	92.00000	98.00000	30.00000	39.00000	
density	0.99712	0.99322	0.99566	0.99713	0.99712	0.99701	
pH	3.40000	3.38000	3.32000	3.16000	3.40000	3.40000	
sulphates	0.75000	0.49000	0.68000	0.52000	0.75000	0.74000	
alcohol	9.80000	11.70000	11.10000	9.60000	9.80000	9.70000	
quality	5.00000	5.00000	6.00000	6.00000	5.00000	5.00000	
	1449	1450	1451	1452	1453	1454	
fixed_acidity	6.90000	7.20000	7.2000	7.80000	6.60000	7.60000	

volatile_acidity	0.58000	0.38000	0.3700	0.32000	0.58000	0.49000
citric_acid	0.01000	0.31000	0.3200	0.44000	0.02000	0.33000
residual_sugar	1.90000	2.00000	2.0000	2.70000	2.00000	1.90000
chlorides	0.08000	0.05600	0.0620	0.10400	0.06200	0.07400
free_sulfur_dioxide	40.00000	15.00000	15.0000	8.00000	37.00000	27.00000
total_sulfur_dioxide	54.00000	29.00000	28.0000	17.00000	53.00000	85.00000
density	0.99683	0.99472	0.9947	0.99732	0.99374	0.99706
pH	3.40000	3.23000	3.2300	3.33000	3.35000	3.41000
sulphates	0.73000	0.76000	0.7300	0.78000	0.76000	0.58000
alcohol	9.70000	11.30000	11.3000	11.00000	11.60000	9.00000
quality	5.00000	8.00000	7.0000	7.00000	7.00000	5.00000
	1455	1456	1457	1458	1459	1460
fixed_acidity	11.70000	6.50000	6.00000	7.60000	8.40000	7.90000
volatile_acidity	0.45000	0.90000	0.54000	0.49000	0.29000	0.20000
citric_acid	0.63000	0.00000	0.06000	0.33000	0.40000	0.35000
residual_sugar	2.20000	1.60000	1.80000	1.90000	1.70000	1.70000
chlorides	0.07300	0.05200	0.05000	0.07400	0.06700	0.05400
free_sulfur_dioxide	7.00000	9.00000	38.00000	27.00000	8.00000	7.00000
total_sulfur_dioxide	23.00000	17.00000	89.00000	85.00000	20.00000	15.00000
density	0.99974	0.99467	0.99236	0.99706	0.99603	0.99458
pH	3.21000	3.50000	3.30000	3.41000	3.39000	3.32000
sulphates	0.69000	0.63000	0.50000	0.58000	0.60000	0.80000
alcohol	10.90000	10.90000	10.55000	9.00000	10.50000	11.90000
quality	6.00000	6.00000	6.00000	5.00000	5.00000	7.00000
	1461	1462	1463	1464	1465	1466
fixed_acidity	6.40000	6.20000	6.80000	6.90000	6.8000	6.8000
volatile_acidity	0.42000	0.78500	0.64000	0.63000	0.5900	0.5900
citric_acid	0.09000	0.00000	0.03000	0.01000	0.1000	0.1000
residual_sugar	2.30000	2.10000	2.30000	2.40000	1.7000	1.7000
chlorides	0.05400	0.06000	0.07500	0.07600	0.0630	0.0630
free_sulfur_dioxide	34.00000	6.00000	14.00000	14.00000	34.0000	34.0000
total_sulfur_dioxide	64.00000	13.00000	31.00000	39.00000	53.0000	53.0000
density	0.99724	0.99664	0.99545	0.99522	0.9958	0.9958
pH	3.41000	3.59000	3.36000	3.34000	3.4100	3.4100
sulphates	0.68000	0.61000	0.58000	0.53000	0.6700	0.6700
alcohol	10.40000	10.00000	10.40000	10.80000	9.7000	9.7000
quality	6.00000	4.00000	6.00000	6.00000	5.0000	5.0000
	1467	1468	1469	1470	1471	1472
fixed_acidity	7.30000	6.70000	7.30000	7.30000	10.00000	6.70000
volatile_acidity	0.48000	1.04000	0.48000	0.98000	0.69000	0.70000
citric_acid	0.32000	0.08000	0.32000	0.05000	0.11000	0.08000
residual_sugar	2.10000	2.30000	2.10000	2.10000	1.40000	3.75000
chlorides	0.06200	0.06700	0.06200	0.06100	0.08400	0.06700
free_sulfur_dioxide	31.00000	19.00000	31.00000	20.00000	8.00000	8.00000
total_sulfur_dioxide	54.00000	32.00000	54.00000	49.00000	24.00000	16.00000

density	0.99728	0.99648	0.99728	0.99705	0.99578	0.99334
pH	3.30000	3.52000	3.30000	3.31000	2.88000	3.43000
sulphates	0.65000	0.57000	0.65000	0.55000	0.47000	0.52000
alcohol	10.00000	11.00000	10.00000	9.70000	9.70000	12.60000
quality	7.00000	4.00000	7.00000	3.00000	5.00000	5.00000
	1473	1474	1475	1476	1477	1478
fixed_acidity	7.60000	6.10000	9.90000	5.30000	9.90000	5.30000
volatile_acidity	0.35000	0.60000	0.50000	0.47000	0.50000	0.47000
citric_acid	0.60000	0.08000	0.50000	0.11000	0.50000	0.11000
residual_sugar	2.60000	1.80000	13.80000	2.20000	13.80000	2.20000
chlorides	0.07300	0.07100	0.20500	0.04800	0.20500	0.04800
free_sulfur_dioxide	23.00000	14.00000	48.00000	16.00000	48.00000	16.00000
total_sulfur_dioxide	44.00000	45.00000	82.00000	89.00000	82.00000	89.00000
density	0.99656	0.99336	1.00242	0.99182	1.00242	0.99182
pH	3.38000	3.38000	3.16000	3.54000	3.16000	3.54000
sulphates	0.79000	0.54000	0.75000	0.88000	0.75000	0.88000
alcohol	11.10000	11.00000	8.80000	13.56667	8.80000	13.60000
quality	6.00000	5.00000	5.00000	7.00000	5.00000	7.00000
	1479	1480	1481	1482	1483	1484
fixed_acidity	7.10000	8.20000	5.60000	8.20000	7.20000	8.10000
volatile_acidity	0.87500	0.28000	0.62000	0.28000	0.58000	0.33000
citric_acid	0.05000	0.60000	0.03000	0.60000	0.54000	0.44000
residual_sugar	5.70000	3.00000	1.50000	3.00000	2.10000	1.50000
chlorides	0.08200	0.10400	0.08000	0.10400	0.11400	0.04200
free_sulfur_dioxide	3.00000	10.00000	6.00000	10.00000	3.00000	6.00000
total_sulfur_dioxide	14.00000	22.00000	13.00000	22.00000	9.00000	12.00000
density	0.99808	0.99828	0.99498	0.99828	0.99719	0.99542
pH	3.40000	3.39000	3.66000	3.39000	3.33000	3.35000
sulphates	0.52000	0.68000	0.62000	0.68000	0.57000	0.61000
alcohol	10.20000	10.60000	10.10000	10.60000	10.30000	10.70000
quality	3.00000	5.00000	4.00000	5.00000	4.00000	5.00000
	1485	1486	1487	1488	1489	1490
fixed_acidity	6.80000	7.00000	6.80000	6.00000	5.6000	6.20000
volatile_acidity	0.91000	0.65500	0.68000	0.64000	0.5400	0.57000
citric_acid	0.06000	0.16000	0.21000	0.05000	0.0400	0.10000
residual_sugar	2.00000	2.10000	2.10000	1.90000	1.7000	2.10000
chlorides	0.06000	0.07400	0.07000	0.06600	0.0490	0.04800
free_sulfur_dioxide	4.00000	8.00000	9.00000	9.00000	5.0000	4.00000
total_sulfur_dioxide	11.00000	25.00000	23.00000	17.00000	13.0000	11.00000
density	0.99592	0.99606	0.99546	0.99496	0.9942	0.99448
pH	3.53000	3.37000	3.38000	3.52000	3.7200	3.44000
sulphates	0.64000	0.55000	0.60000	0.78000	0.5800	0.76000
alcohol	10.90000	9.70000	10.30000	10.60000	11.4000	10.80000
quality	4.00000	5.00000	5.00000	5.00000	5.0000	6.00000
	1491	1492	1493	1494	1495	1496

fixed_acidity	7.10000	5.6000	6.20000	7.70000	6.40000	7.00000
volatile_acidity	0.22000	0.5400	0.65000	0.54000	0.31000	0.43000
citric_acid	0.49000	0.0400	0.06000	0.26000	0.09000	0.02000
residual_sugar	1.80000	1.7000	1.60000	1.90000	1.40000	1.90000
chlorides	0.03900	0.0490	0.05000	0.08900	0.06600	0.08000
free_sulfur_dioxide	8.00000	5.0000	6.00000	23.00000	15.00000	15.00000
total_sulfur_dioxide	18.00000	13.0000	18.00000	147.00000	28.00000	28.00000
density	0.99344	0.9942	0.99348	0.99636	0.99459	0.99492
pH	3.39000	3.7200	3.57000	3.26000	3.42000	3.35000
sulphates	0.56000	0.5800	0.54000	0.59000	0.70000	0.81000
alcohol	12.40000	11.4000	11.95000	9.70000	10.00000	10.60000
quality	6.00000	5.0000	5.00000	5.00000	7.00000	6.00000
	1497	1498	1499	1500	1501	1502
fixed_acidity	7.70000	6.90000	6.60000	6.90000	7.50000	7.80000
volatile_acidity	0.54000	0.74000	0.89500	0.74000	0.72500	0.82000
citric_acid	0.26000	0.03000	0.04000	0.03000	0.04000	0.29000
residual_sugar	1.90000	2.30000	2.30000	2.30000	1.50000	4.30000
chlorides	0.08900	0.05400	0.06800	0.05400	0.07600	0.08300
free_sulfur_dioxide	23.00000	7.00000	7.00000	7.00000	8.00000	21.00000
total_sulfur_dioxide	147.00000	16.00000	13.00000	16.00000	15.00000	64.00000
density	0.99636	0.99508	0.99582	0.99508	0.99508	0.99642
pH	3.26000	3.45000	3.53000	3.45000	3.26000	3.16000
sulphates	0.59000	0.63000	0.58000	0.63000	0.53000	0.53000
alcohol	9.70000	11.50000	10.80000	11.50000	9.60000	9.40000
quality	5.00000	6.00000	6.00000	6.00000	5.00000	5.00000
	1503	1504	1505	1506	1507	1508
fixed_acidity	7.30000	6.20000	7.50000	6.700	6.80000	7.50000
volatile_acidity	0.58500	0.44000	0.38000	0.760	0.81000	0.38000
citric_acid	0.18000	0.39000	0.57000	0.020	0.05000	0.57000
residual_sugar	2.40000	2.50000	2.30000	1.800	2.00000	2.30000
chlorides	0.07800	0.07700	0.10600	0.078	0.07000	0.10600
free_sulfur_dioxide	15.00000	6.00000	5.00000	6.000	6.00000	5.00000
total_sulfur_dioxide	60.00000	14.00000	12.00000	12.000	14.00000	12.00000
density	0.99638	0.99555	0.99605	0.996	0.99562	0.99605
pH	3.31000	3.51000	3.36000	3.550	3.51000	3.36000
sulphates	0.54000	0.69000	0.55000	0.630	0.66000	0.55000
alcohol	9.80000	11.00000	11.40000	9.950	10.80000	11.40000
quality	5.00000	6.00000	6.00000	3.000	6.00000	6.00000
	1509	1510	1511	1512	1513	1514
fixed_acidity	7.10000	7.9000	6.40000	7.10000	6.40000	6.40000
volatile_acidity	0.27000	0.1800	0.36000	0.69000	0.79000	0.56000
citric_acid	0.60000	0.4000	0.21000	0.04000	0.04000	0.15000
residual_sugar	2.10000	1.8000	2.20000	2.10000	2.20000	1.80000
chlorides	0.07400	0.0620	0.04700	0.06800	0.06100	0.07800
free_sulfur_dioxide	17.00000	7.0000	26.00000	19.00000	11.00000	17.00000

total_sulfur_dioxide	25.00000	20.0000	48.00000	27.00000	17.00000	65.00000
density	0.99814	0.9941	0.99661	0.99712	0.99588	0.99294
pH	3.38000	3.2800	3.47000	3.44000	3.53000	3.33000
sulphates	0.72000	0.7000	0.77000	0.67000	0.65000	0.60000
alcohol	10.60000	11.1000	9.70000	9.80000	10.40000	10.50000
quality	6.00000	5.0000	6.00000	5.00000	6.00000	6.00000
	1515	1516	1517	1518	1519	1520
fixed_acidity	6.900000	6.90000	6.10000	6.50000	7.40000	6.60000
volatile_acidity	0.840000	0.84000	0.32000	0.53000	0.47000	0.70000
citric_acid	0.210000	0.21000	0.25000	0.06000	0.46000	0.08000
residual_sugar	4.100000	4.10000	2.30000	2.00000	2.20000	2.60000
chlorides	0.074000	0.07400	0.07100	0.06300	0.11400	0.10600
free_sulfur_dioxide	16.000000	16.00000	23.00000	29.00000	7.00000	14.00000
total_sulfur_dioxide	65.000000	65.00000	58.00000	44.00000	20.00000	27.00000
density	0.998420	0.99842	0.99633	0.99489	0.99647	0.99665
pH	3.530000	3.53000	3.42000	3.38000	3.32000	3.44000
sulphates	0.720000	0.72000	0.97000	0.83000	0.63000	0.58000
alcohol	9.233333	9.25000	10.60000	10.30000	10.50000	10.20000
quality	6.000000	6.00000	5.00000	6.00000	5.00000	5.00000
	1521	1522	1523	1524	1525	1526
fixed_acidity	6.50000	6.90000	6.10000	6.8000	6.00000	6.70000
volatile_acidity	0.53000	0.48000	0.32000	0.4800	0.42000	0.48000
citric_acid	0.06000	0.20000	0.25000	0.2500	0.19000	0.08000
residual_sugar	2.00000	1.90000	2.30000	2.0000	2.00000	2.10000
chlorides	0.06300	0.08200	0.07100	0.0760	0.07500	0.06400
free_sulfur_dioxide	29.00000	9.00000	23.00000	29.0000	22.00000	18.00000
total_sulfur_dioxide	44.00000	23.00000	58.00000	61.0000	47.00000	34.00000
density	0.99489	0.99585	0.99633	0.9953	0.99522	0.99552
pH	3.38000	3.39000	3.42000	3.3400	3.39000	3.33000
sulphates	0.83000	0.43000	0.97000	0.6000	0.78000	0.64000
alcohol	10.30000	9.05000	10.60000	10.4000	10.00000	9.70000
quality	6.00000	4.00000	5.00000	5.0000	6.00000	5.00000
	1527	1528	1529	1530	1531	1532
fixed_acidity	6.80000	7.1000	7.90000	7.10000	6.60000	6.10000
volatile_acidity	0.47000	0.5300	0.29000	0.69000	0.44000	0.70500
citric_acid	0.08000	0.0700	0.49000	0.08000	0.09000	0.10000
residual_sugar	2.20000	1.7000	2.20000	2.10000	2.20000	2.80000
chlorides	0.06400	0.0710	0.09600	0.06300	0.06300	0.08100
free_sulfur_dioxide	18.000000	15.0000	21.00000	42.00000	9.00000	13.00000
total_sulfur_dioxide	38.00000	24.0000	59.00000	52.00000	18.00000	28.00000
density	0.99553	0.9951	0.99714	0.99608	0.99444	0.99631
pH	3.30000	3.2900	3.31000	3.42000	3.42000	3.60000
sulphates	0.65000	0.6600	0.67000	0.60000	0.69000	0.66000
alcohol	9.60000	10.8000	10.10000	10.20000	11.30000	10.20000
quality	6.00000	6.0000	6.00000	6.00000	6.00000	5.00000

	1533	1534	1535	1536	1537	1538
fixed_acidity	7.20000	8.00000	6.60000	7.0000	6.10000	5.40000
volatile_acidity	0.53000	0.39000	0.56000	0.5500	0.53000	0.58000
citric_acid	0.13000	0.30000	0.14000	0.1300	0.08000	0.08000
residual_sugar	2.00000	1.90000	2.40000	2.2000	1.90000	1.90000
chlorides	0.05800	0.07400	0.06400	0.0750	0.07700	0.05900
free_sulfur_dioxide	18.00000	32.00000	13.00000	15.0000	24.00000	20.00000
total_sulfur_dioxide	22.00000	84.00000	29.00000	35.0000	45.00000	31.00000
density	0.99573	0.99717	0.99397	0.9959	0.99528	0.99484
pH	3.21000	3.39000	3.42000	3.3600	3.60000	3.50000
sulphates	0.68000	0.61000	0.62000	0.5900	0.68000	0.64000
alcohol	9.90000	9.00000	11.70000	9.7000	10.30000	10.20000
quality	6.00000	5.00000	7.00000	6.0000	6.00000	6.00000
	1539	1540	1541	1542	1543	1544
fixed_acidity	6.20000	7.20000	6.20000	7.40000	6.70000	11.10000
volatile_acidity	0.64000	0.39000	0.52000	0.25000	0.85500	0.44000
citric_acid	0.09000	0.32000	0.08000	0.29000	0.02000	0.42000
residual_sugar	2.50000	1.80000	4.40000	2.20000	1.90000	2.20000
chlorides	0.08100	0.06500	0.07100	0.05400	0.06400	0.06400
free_sulfur_dioxide	15.00000	34.00000	11.00000	19.00000	29.00000	14.00000
total_sulfur_dioxide	26.00000	60.00000	32.00000	49.00000	38.00000	19.00000
density	0.99538	0.99714	0.99646	0.99666	0.99472	0.99758
pH	3.57000	3.46000	3.56000	3.40000	3.30000	3.25000
sulphates	0.63000	0.78000	0.63000	0.76000	0.56000	0.57000
alcohol	12.00000	9.90000	11.60000	10.90000	10.75000	10.40000
quality	5.00000	5.00000	6.00000	7.00000	6.00000	6.00000
	1545	1546	1547	1548	1549	1550
fixed_acidity	8.4000	6.50000	7.00000	6.30000	11.20000	7.40000
volatile_acidity	0.3700	0.63000	0.57000	0.60000	0.40000	0.36000
citric_acid	0.4300	0.33000	0.02000	0.10000	0.50000	0.30000
residual_sugar	2.3000	1.80000	2.00000	1.60000	2.00000	1.80000
chlorides	0.0630	0.05900	0.07200	0.04800	0.09900	0.07400
free_sulfur_dioxide	12.0000	16.00000	17.00000	12.00000	19.00000	17.00000
total_sulfur_dioxide	19.0000	28.00000	26.00000	26.00000	50.00000	24.00000
density	0.9955	0.99531	0.99575	0.99306	0.99783	0.99419
pH	3.1700	3.36000	3.36000	3.55000	3.10000	3.24000
sulphates	0.8100	0.64000	0.61000	0.51000	0.58000	0.70000
alcohol	11.2000	10.10000	10.20000	12.10000	10.40000	11.40000
quality	7.0000	6.00000	5.00000	5.00000	5.00000	8.00000
	1551	1552	1553	1554	1555	1556
fixed_acidity	7.10000	7.10000	6.30000	7.30000	6.60000	7.00000
volatile_acidity	0.68000	0.67000	0.68000	0.73500	0.85500	0.56000
citric_acid	0.00000	0.00000	0.01000	0.00000	0.02000	0.17000
residual_sugar	2.30000	2.30000	3.70000	2.20000	2.40000	1.70000
chlorides	0.08700	0.08300	0.10300	0.08000	0.06200	0.06500

free_sulfur_dioxide	17.00000	18.00000	32.00000	18.00000	15.00000	15.00000
total_sulfur_dioxide	26.00000	27.00000	54.00000	28.00000	23.00000	24.00000
density	0.99783	0.99768	0.99586	0.99765	0.99627	0.99514
pH	3.45000	3.44000	3.51000	3.41000	3.54000	3.44000
sulphates	0.53000	0.54000	0.66000	0.60000	0.60000	0.68000
alcohol	9.50000	9.40000	11.30000	9.40000	11.00000	10.55000
quality	5.00000	5.00000	6.00000	5.00000	6.00000	7.00000
	1557	1558	1559	1560	1561	1562
fixed_acidity	6.60000	6.60000	6.90000	7.80000	7.80000	7.80000
volatile_acidity	0.88000	0.85500	0.63000	0.60000	0.60000	0.60000
citric_acid	0.04000	0.02000	0.33000	0.26000	0.26000	0.26000
residual_sugar	2.20000	2.40000	6.70000	2.00000	2.00000	2.00000
chlorides	0.06600	0.06200	0.23500	0.08000	0.08000	0.08000
free_sulfur_dioxide	12.00000	15.00000	66.00000	31.00000	31.00000	31.00000
total_sulfur_dioxide	20.00000	23.00000	115.00000	131.00000	131.00000	131.00000
density	0.99636	0.99627	0.99787	0.99622	0.99622	0.99622
pH	3.53000	3.54000	3.22000	3.21000	3.21000	3.21000
sulphates	0.56000	0.60000	0.56000	0.52000	0.52000	0.52000
alcohol	9.90000	11.00000	9.50000	9.90000	9.90000	9.90000
quality	5.00000	6.00000	5.00000	5.00000	5.00000	5.00000
	1563	1564	1565	1566	1567	1568
fixed_acidity	7.20000	7.20000	7.20000	6.70000	6.70000	7.20000
volatile_acidity	0.69500	0.69500	0.69500	0.67000	0.16000	0.69500
citric_acid	0.13000	0.13000	0.13000	0.02000	0.64000	0.13000
residual_sugar	2.00000	2.00000	2.00000	1.90000	2.10000	2.00000
chlorides	0.07600	0.07600	0.07600	0.06100	0.05900	0.07600
free_sulfur_dioxide	12.00000	12.00000	12.00000	26.00000	24.00000	12.00000
total_sulfur_dioxide	20.00000	20.00000	20.00000	42.00000	52.00000	20.00000
density	0.99546	0.99546	0.99546	0.99489	0.99494	0.99546
pH	3.29000	3.29000	3.29000	3.39000	3.34000	3.29000
sulphates	0.54000	0.54000	0.54000	0.82000	0.71000	0.54000
alcohol	10.10000	10.10000	10.10000	10.90000	11.20000	10.10000
quality	5.00000	5.00000	5.00000	6.00000	6.00000	5.00000
	1569	1570	1571	1572	1573	1574
fixed_acidity	7.00000	6.20000	6.4000	6.40000	7.30000	6.00000
volatile_acidity	0.56000	0.51000	0.3600	0.38000	0.69000	0.58000
citric_acid	0.13000	0.14000	0.5300	0.14000	0.32000	0.20000
residual_sugar	1.60000	1.90000	2.2000	2.20000	2.20000	2.40000
chlorides	0.07700	0.05600	0.2300	0.03800	0.06900	0.07500
free_sulfur_dioxide	25.00000	15.00000	19.0000	15.00000	35.00000	15.00000
total_sulfur_dioxide	42.00000	34.00000	35.0000	25.00000	104.00000	50.00000
density	0.99629	0.99396	0.9934	0.99514	0.99632	0.99467
pH	3.34000	3.48000	3.3700	3.44000	3.33000	3.58000
sulphates	0.59000	0.57000	0.9300	0.65000	0.51000	0.67000
alcohol	9.20000	11.50000	12.4000	11.10000	9.50000	12.50000

quality	5.00000	6.00000	6.0000	6.00000	5.00000	6.00000
	1575	1576	1577	1578	1579	1580
fixed_acidity	5.60000	7.50000	8.00000	6.20000	6.8000	6.20000
volatile_acidity	0.31000	0.52000	0.30000	0.70000	0.6700	0.56000
citric_acid	0.78000	0.40000	0.63000	0.15000	0.1500	0.09000
residual_sugar	13.90000	2.20000	1.60000	5.10000	1.8000	1.70000
chlorides	0.07400	0.06000	0.08100	0.07600	0.1180	0.05300
free_sulfur_dioxide	23.00000	12.00000	16.00000	13.00000	13.0000	24.00000
total_sulfur_dioxide	92.00000	20.00000	29.00000	27.00000	20.0000	32.00000
density	0.99677	0.99474	0.99588	0.99622	0.9954	0.99402
pH	3.39000	3.26000	3.30000	3.54000	3.4200	3.54000
sulphates	0.48000	0.64000	0.78000	0.60000	0.6700	0.60000
alcohol	10.50000	11.80000	10.80000	11.90000	11.3000	11.30000
quality	6.00000	6.00000	6.00000	6.00000	6.0000	5.00000
	1581	1582	1583	1584	1585	1586
fixed_acidity	7.4000	6.20000	6.10000	6.20000	6.70000	7.20000
volatile_acidity	0.3500	0.56000	0.71500	0.46000	0.32000	0.39000
citric_acid	0.3300	0.09000	0.10000	0.29000	0.44000	0.44000
residual_sugar	2.4000	1.70000	2.60000	2.10000	2.40000	2.60000
chlorides	0.0680	0.05300	0.05300	0.07400	0.06100	0.06600
free_sulfur_dioxide	9.0000	24.00000	13.00000	32.00000	24.00000	22.00000
total_sulfur_dioxide	26.0000	32.00000	27.00000	98.00000	34.00000	48.00000
density	0.9947	0.99402	0.99362	0.99578	0.99484	0.99494
pH	3.3600	3.54000	3.57000	3.33000	3.29000	3.30000
sulphates	0.6000	0.60000	0.50000	0.62000	0.80000	0.84000
alcohol	11.9000	11.30000	11.90000	9.80000	11.60000	11.50000
quality	6.0000	5.00000	5.00000	5.00000	7.00000	6.00000
	1587	1588	1589	1590	1591	1592
fixed_acidity	7.50000	5.80000	7.20000	6.6000	6.30000	5.40000
volatile_acidity	0.31000	0.61000	0.66000	0.7250	0.55000	0.74000
citric_acid	0.41000	0.11000	0.33000	0.2000	0.15000	0.09000
residual_sugar	2.40000	1.80000	2.50000	7.8000	1.80000	1.70000
chlorides	0.06500	0.06600	0.06800	0.0730	0.07700	0.08900
free_sulfur_dioxide	34.00000	18.00000	34.00000	29.0000	26.00000	16.00000
total_sulfur_dioxide	60.00000	28.00000	102.00000	79.0000	35.00000	26.00000
density	0.99492	0.99483	0.99414	0.9977	0.99314	0.99402
pH	3.34000	3.55000	3.27000	3.2900	3.32000	3.67000
sulphates	0.85000	0.66000	0.78000	0.5400	0.82000	0.56000
alcohol	11.40000	10.90000	12.80000	9.2000	11.60000	11.60000
quality	6.00000	6.00000	6.00000	5.0000	6.00000	6.00000
	1593	1594	1595	1596	1597	1598
fixed_acidity	6.30000	6.80000	6.2000	5.90000	6.30000	5.90000
volatile_acidity	0.51000	0.62000	0.6000	0.55000	0.51000	0.64500
citric_acid	0.13000	0.08000	0.0800	0.10000	0.13000	0.12000
residual_sugar	2.30000	1.90000	2.0000	2.20000	2.30000	2.00000

	chlorides	free_sulfur_dioxide	total_sulfur_dioxide	density	pH	sulphates	alcohol	quality	
	0.07600	0.06800	0.0900	0.06200	0.07600	0.07500			
	29.00000	28.00000	32.0000	39.00000	29.00000	32.00000			
	40.00000	38.00000	44.0000	51.00000	40.00000	44.00000			
	0.99574	0.99651	0.9949	0.99512	0.99574	0.99547			
	3.42000	3.42000	3.4500	3.52000	3.42000	3.57000			
	0.75000	0.82000	0.5800	0.76000	0.75000	0.71000			
	11.00000	9.50000	10.5000	11.20000	11.00000	10.20000			
	6.00000	6.00000	5.0000	6.00000	6.00000	5.00000			
			1599						
	fixed_acidity	6.00000							
	volatile_acidity	0.31000							
	citric_acid	0.47000							
	residual_sugar	3.60000							
	chlorides	0.06700							
	free_sulfur_dioxide	18.00000							
	total_sulfur_dioxide	42.00000							
	density	0.99549							
	pH	3.39000							
	sulphates	0.66000							
	alcohol	11.00000							
	quality	6.00000							

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Midterm WineQualit

[815]	6	5	6	6	5	5	5	7	5	5	5	5	7	5	8	6	4	6	3	4	5	5	7	7	7	5	7	5	6	5	5	6	
[852]	5	5	6	6	7	6	7	7	6	5	6	5	5	5	6	6	6	6	5	4	7	7	7	4	6	6	5	5	6	6	5	6	
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[963]	5	6	6	6	7	5	6	5	6	6	7	5	7	5	5	5	7	5	6	5	6	6	5	6	7	5	5	6	5	5	6	7	
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[1111]	6	7	6	6	6	6	6	6	5	8	6	6	6	4	7	6	6	5	6	6	5	7	7	7	6	6	6	5	6	6	6	5	
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Midterm WineQuality

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$delrsq  
[1] 0.01
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\$ns  
[1] 1

\$tx	fixed_acidity	volatile_acidity	citric_acid	residual_sugar	chlorides
1	5.260663e-07	6.766699e-07	-1.266885e-06	-7.121540e-08	6.620086e-08
2	3.339539e-07	9.810545e-07	-1.266885e-06	1.589250e-07	2.151427e-08
3	3.339539e-07	7.772737e-07	-1.099199e-06	5.738142e-08	5.272762e-08
4	-1.644436e-06	-1.017300e-06	1.368925e-06	-7.121540e-08	5.755661e-08
5	5.260663e-07	6.766699e-07	-1.266885e-06	-7.121540e-08	6.620086e-08
6	5.260663e-07	6.036550e-07	-1.266885e-06	-9.563976e-08	5.755661e-08
7	2.746319e-07	4.529497e-07	-1.015647e-06	-1.417289e-07	4.146663e-08
8	5.804193e-07	5.838653e-07	-1.266885e-06	-2.553407e-07	2.995542e-08
9	3.339539e-07	3.758986e-07	-1.182954e-06	-4.559895e-08	4.742314e-08
10	4.787620e-07	-3.408157e-08	5.023219e-07	-5.672593e-08	4.587879e-08

11	8.870939e-07	3.758986e-07	-9.323354e-07	-9.563976e-08	2.679843e-08
12	4.787620e-07	-3.408157e-08	5.023219e-07	-5.672593e-08	4.587879e-08
13	1.426101e-06	4.987223e-07	-1.266885e-06	-1.417289e-07	6.835400e-08
14	3.339539e-07	4.839119e-07	9.791995e-08	-1.417289e-07	-6.278841e-08
15	-2.924668e-07	5.130332e-07	-4.984645e-07	9.001577e-08	-3.886638e-07
16	-2.924668e-07	5.130332e-07	-4.502292e-07	8.373160e-08	-3.571277e-07
17	-6.712142e-08	-1.017300e-06	1.368925e-06	-9.563976e-08	5.272762e-08
18	1.587053e-07	2.835149e-07	4.149164e-08	-1.184267e-07	-1.397807e-06
19	5.260663e-07	4.174006e-07	-9.323354e-07	5.212399e-08	8.468339e-08
20	2.746319e-07	-8.846745e-07	1.171028e-06	-9.563976e-08	-1.255896e-06
21	-2.924668e-07	-1.128754e-06	1.045738e-06	-9.563976e-08	7.055881e-08
22	4.328965e-07	-5.898254e-07	2.136912e-07	5.738142e-08	8.039333e-08
23	2.746319e-07	-4.140677e-07	-3.491746e-07	-1.417289e-07	-2.070427e-08
24	-6.712142e-08	-8.427546e-08	-8.098654e-07	5.738142e-08	7.909160e-08
25	7.933367e-07	-5.572288e-07	-6.774583e-07	1.022976e-07	8.259377e-08
26	1.083292e-06	-5.898254e-07	-5.905550e-07	-1.950685e-07	7.224071e-08
27	4.328965e-07	-5.225867e-07	-1.811450e-07	-9.563976e-08	7.224071e-08
28	2.746319e-07	-4.140677e-07	-3.491746e-07	-1.417289e-07	-2.070427e-08
29	6.968316e-07	6.939921e-07	-1.266885e-06	-7.121540e-08	7.224071e-08
30	3.339539e-07	5.739479e-07	-1.266885e-06	-4.559895e-08	8.039333e-08
31	8.870939e-07	6.321453e-07	-9.739283e-07	1.022976e-07	6.835400e-08
32	7.933367e-07	6.503875e-07	-1.266885e-06	1.455103e-07	-1.543962e-08
33	4.505265e-08	5.937276e-07	-7.669679e-07	5.738142e-08	8.442682e-08
34	7.933367e-07	4.686744e-07	-7.669679e-07	-3.621921e-07	4.742314e-08
35	1.621262e-06	-8.846745e-07	-1.237680e-07	-9.563976e-08	-4.893533e-09
36	3.339539e-07	5.739479e-07	-1.266885e-06	-1.812470e-08	8.468339e-08
37	3.339539e-07	4.529497e-07	-6.774583e-07	1.022976e-07	8.468339e-08
38	1.587053e-07	-6.299520e-07	4.149164e-08	-1.207004e-08	3.199779e-08
39	1.377304e-06	1.420462e-06	-8.912425e-07	-1.673771e-07	-3.676398e-07
40	5.804193e-07	-2.950422e-07	5.023219e-07	-4.392685e-08	5.271686e-08
41	5.804193e-07	-2.950422e-07	5.023219e-07	-4.392685e-08	5.271686e-08
42	-2.377533e-07	4.839119e-07	1.556317e-07	1.518340e-07	7.486050e-08
43	4.787620e-07	-8.427546e-08	-3.997362e-07	1.589250e-07	-1.208593e-06
44	1.587053e-07	6.036550e-07	-2.935321e-07	1.100349e-08	4.146663e-08
45	8.403457e-07	6.228241e-07	-1.182954e-06	-9.563976e-08	-7.460363e-09
46	1.914003e-06	7.466536e-08	-6.338308e-07	-1.207004e-08	5.627579e-09
47	3.846396e-07	1.077376e-06	8.254983e-07	1.100349e-08	-6.278841e-08
48	-1.807172e-07	-9.875367e-07	1.211874e-06	-1.417289e-07	-5.753151e-08
49	1.033778e-06	-5.572288e-07	-2.370391e-07	-1.417289e-07	3.199779e-08
50	1.426101e-06	-9.217426e-07	5.584314e-07	-1.950685e-07	5.271686e-08
51	-2.377533e-07	6.036550e-07	-6.841191e-08	-1.184267e-07	5.271686e-08
52	9.348770e-07	7.466536e-08	-1.099199e-06	1.100349e-08	4.146663e-08
53	9.348770e-07	-3.408157e-08	-1.099199e-06	-1.207004e-08	3.952197e-08
54	-1.237739e-07	-6.299520e-07	5.023219e-07	1.402156e-07	6.840977e-08
55	4.328965e-07	2.012147e-08	-6.338308e-07	1.518340e-07	-4.175390e-08

56	3.846396e-07	5.130332e-07	-1.099199e-06	9.001577e-08	7.909160e-08
57	-1.068026e-06	-4.737109e-07	1.406807e-06	1.151666e-07	4.317297e-08
58	4.787620e-07	5.401252e-07	-7.669679e-07	7.490757e-09	-4.701447e-08
59	3.339539e-07	4.174006e-07	-4.984645e-07	5.738142e-08	6.620086e-08
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61	-2.377533e-07	-5.572288e-07	6.975014e-07	1.100349e-08	6.261019e-08
62	3.846396e-07	6.590682e-07	1.087158e-06	-9.563976e-08	-6.804538e-08
63	4.787620e-07	7.466536e-08	-5.905550e-07	-7.121540e-08	8.259377e-08
64	7.446521e-07	7.358029e-07	-1.057370e-06	-4.559895e-08	6.840977e-08
65	6.385285e-07	7.191894e-07	-1.057370e-06	3.621120e-08	8.468339e-08
66	6.385285e-07	7.191894e-07	-1.057370e-06	3.621120e-08	8.468339e-08
67	4.787620e-07	7.466536e-08	-8.098654e-07	-1.673771e-07	6.261019e-08
68	9.348770e-07	6.854438e-07	-9.739283e-07	-1.417289e-07	6.620086e-08
69	-5.452606e-07	-8.846745e-07	1.406807e-06	-4.559895e-08	5.271686e-08
70	2.149786e-07	6.854438e-07	-1.057370e-06	-7.121540e-08	5.271686e-08
71	3.846396e-07	5.401252e-07	-9.323354e-07	-7.121540e-08	6.620086e-08
72	3.846396e-07	6.228241e-07	-2.370391e-07	-1.207004e-08	7.486050e-08
73	3.846396e-07	6.590682e-07	-2.935321e-07	-7.121540e-08	7.909160e-08
74	4.505265e-08	6.321453e-07	-6.841191e-08	-1.207004e-08	7.909160e-08
75	-7.795642e-07	-8.846745e-07	1.291156e-06	1.455103e-07	4.248468e-08
76	-2.377533e-07	-5.225867e-07	1.662907e-06	1.100349e-08	4.765355e-08
77	-2.377533e-07	-5.225867e-07	1.662907e-06	1.100349e-08	4.765355e-08
78	8.403457e-07	8.187823e-07	-1.266885e-06	1.022976e-07	-1.016835e-08
79	8.870939e-07	7.608144e-07	-7.669679e-07	-4.559895e-08	8.468339e-08
80	4.505265e-08	5.267317e-07	-3.997362e-07	-1.673771e-07	7.224071e-08
81	1.132640e-06	-2.950422e-07	-3.997362e-07	-1.417289e-07	4.146663e-08
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83	5.260663e-07	-3.408157e-08	1.002594e-06	-4.559895e-08	8.468339e-08
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85	1.083292e-06	-9.556801e-07	1.045738e-06	-9.563976e-08	4.146663e-08
86	7.933367e-07	2.354558e-07	-6.338308e-07	1.100349e-08	6.620086e-08
87	-1.237739e-07	-8.427546e-08	4.149164e-08	-7.121540e-08	-4.175390e-08
88	3.846396e-07	-8.427546e-08	-6.841191e-08	-7.121540e-08	2.675330e-08
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90	7.446521e-07	5.130332e-07	-9.323354e-07	-9.563976e-08	6.620086e-08
91	2.746319e-07	7.466536e-08	-6.841191e-08	-7.121540e-08	6.261019e-08
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96	1.865213e-06	4.529497e-07	-5.452466e-07	5.738142e-08	1.739086e-08
97	8.403457e-07	8.020835e-07	-1.266885e-06	1.402156e-07	3.853350e-10
98	7.446521e-07	-3.408157e-08	-1.237680e-07	-4.559895e-08	4.317297e-08
99	4.328965e-07	1.015940e-06	-1.015647e-06	1.455103e-07	6.261019e-08
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103	1.587053e-07	2.097921e-07	-4.984645e-07	-7.121540e-08	7.224071e-08
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105	6.385285e-07	-8.427546e-08	-1.811450e-07	1.100349e-08	4.317297e-08
106	1.587053e-07	3.530209e-07	-2.935321e-07	-1.207004e-08	7.055881e-08
107	3.339539e-07	-5.225867e-07	1.795279e-06	-1.184267e-07	-1.918146e-06
108	1.132640e-06	5.401252e-07	2.136912e-07	-1.184267e-07	7.486050e-08
109	2.149786e-07	-8.453453e-07	1.251645e-06	1.455103e-07	5.780701e-08
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111	3.339539e-07	2.835149e-07	-4.502292e-07	-9.563976e-08	-1.016835e-08
112	-1.154526e-08	5.130332e-07	-8.912425e-07	1.100349e-08	7.909160e-08
113	-1.154526e-08	4.529497e-07	-8.511639e-07	1.100349e-08	8.259377e-08
114	-1.010306e-06	-9.217426e-07	8.690106e-07	5.738142e-08	7.224071e-08
115	3.339539e-07	2.835149e-07	-4.502292e-07	-9.563976e-08	-1.016835e-08
116	-6.061282e-07	-5.572288e-07	2.136912e-07	1.100349e-08	6.328653e-08
117	4.505265e-08	1.839437e-07	4.149164e-08	-7.121540e-08	7.055881e-08
118	3.339539e-07	2.835149e-07	-7.669679e-07	-4.559895e-08	8.039333e-08
119	-2.377533e-07	2.354558e-07	-1.099199e-06	1.100349e-08	-8.906991e-08
120	7.446521e-07	6.590682e-07	-9.323354e-07	-9.563976e-08	2.679843e-08
121	5.804193e-07	1.314897e-06	-8.912425e-07	-1.184267e-07	-3.991758e-07
122	-2.377533e-07	2.354558e-07	-1.099199e-06	1.100349e-08	-8.906991e-08
123	5.804193e-07	6.677922e-07	-1.266885e-06	1.455103e-07	5.755661e-08
124	2.149786e-07	6.939921e-07	-1.266885e-06	1.589250e-07	7.224071e-08
125	3.339539e-07	-3.408157e-08	-5.452466e-07	-1.417289e-07	8.039333e-08
126	-3.505905e-07	5.130332e-07	-1.099199e-06	-7.121540e-08	-2.309834e-07
127	1.029131e-07	1.772345e-06	-1.266885e-06	-1.184267e-07	6.840977e-08
128	1.587053e-07	1.772345e-06	-1.266885e-06	-9.563976e-08	8.039333e-08
129	2.149786e-07	4.174006e-07	-5.905550e-07	-9.563976e-08	2.995542e-08
130	1.181784e-06	-6.299520e-07	-6.338308e-07	-9.563976e-08	4.605984e-08
131	2.149786e-07	7.524913e-07	1.368925e-06	-4.559895e-08	-8.381383e-08
132	1.426101e-06	-3.408157e-08	-8.912425e-07	5.738142e-08	-1.104803e-08
133	1.426101e-06	-3.408157e-08	-8.912425e-07	5.738142e-08	-1.104803e-08
134	9.348770e-07	-3.408157e-08	-1.224916e-06	-1.673771e-07	2.266651e-08
135	2.746319e-07	1.262114e-06	-1.057370e-06	1.100349e-08	7.909160e-08
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137	4.505265e-08	7.024634e-07	-6.338308e-07	-9.563976e-08	6.835400e-08
138	6.385285e-07	-4.998949e-07	5.023219e-07	-4.559895e-08	6.840977e-08
139	3.339539e-07	2.835149e-07	-4.502292e-07	-1.207004e-08	6.840977e-08
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142	4.505265e-08	7.024634e-07	-6.338308e-07	-9.563976e-08	6.835400e-08
143	1.621262e-06	-8.039870e-07	-1.266885e-06	-9.563976e-08	-7.460363e-09
144	1.083292e-06	-5.898254e-07	-9.323354e-07	-1.184267e-07	3.199779e-08
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146	1.587053e-07	6.228241e-07	1.330290e-06	-9.563976e-08	-7.855775e-08
147	1.328501e-06	6.413609e-07	-1.182954e-06	-9.563976e-08	8.066278e-08
148	4.328965e-07	-8.427546e-08	-6.841191e-08	-1.417289e-07	-7.040215e-07
149	7.933367e-07	-8.427546e-08	-8.511639e-07	5.738142e-08	5.271686e-08
150	1.029131e-07	-5.572288e-07	8.690106e-07	1.518340e-07	6.835400e-08
151	5.804193e-07	-8.453453e-07	1.002594e-06	-1.207004e-08	7.055881e-08
152	-4.813379e-07	7.466536e-08	2.788249e-06	1.151666e-07	-2.669746e-06
153	4.787620e-07	4.529497e-07	-1.141060e-06	-9.563976e-08	3.729614e-08
154	4.787620e-07	4.529497e-07	-1.141060e-06	-9.563976e-08	3.729614e-08
155	6.968316e-07	-4.140677e-07	7.817892e-07	-1.812470e-08	4.317297e-08
156	6.968316e-07	-4.140677e-07	7.817892e-07	-1.812470e-08	4.587879e-08
157	6.968316e-07	-4.140677e-07	7.817892e-07	-1.812470e-08	4.317297e-08
158	6.968316e-07	-4.140677e-07	7.817892e-07	-1.812470e-08	4.587879e-08
159	6.968316e-07	6.413609e-07	-1.266885e-06	1.100349e-08	4.742314e-08
160	8.403457e-07	4.529497e-07	-4.984645e-07	-7.121540e-08	6.261019e-08
161	4.328965e-07	1.103767e-06	-1.141060e-06	-4.559895e-08	6.328653e-08
162	4.328965e-07	6.413609e-07	-1.182954e-06	-2.252781e-07	4.605984e-08
163	3.339539e-07	1.288176e-07	-1.099199e-06	-1.184267e-07	6.620086e-08
164	5.260663e-07	4.529497e-07	-6.841191e-08	-1.361043e-07	4.317297e-08
165	5.804193e-07	4.174006e-07	-6.841191e-08	-1.294546e-07	4.317297e-08
166	3.339539e-07	5.401252e-07	1.045738e-06	-1.184267e-07	1.094567e-08
167	8.403457e-07	5.633962e-07	-8.511639e-07	-1.207004e-08	8.259377e-08
168	5.804193e-07	2.354558e-07	-1.141060e-06	-1.417289e-07	4.605984e-08
169	8.403457e-07	5.401252e-07	-9.739283e-07	-1.207004e-08	6.835400e-08
170	4.787620e-07	6.854438e-07	-1.811450e-07	-9.563976e-08	-1.355759e-06
171	2.746319e-07	9.897283e-07	-1.141060e-06	-9.563976e-08	1.739086e-08
172	2.149786e-07	-4.737109e-07	-5.452466e-07	-4.559895e-08	4.742314e-08
173	2.149786e-07	-4.737109e-07	-5.452466e-07	-4.559895e-08	4.742314e-08
174	5.260663e-07	5.130332e-07	-1.057370e-06	-7.121540e-08	3.952197e-08
175	5.804193e-07	-6.299520e-07	-3.491746e-07	-4.559895e-08	7.224071e-08
176	7.933367e-07	-3.408157e-08	-1.099199e-06	-1.673771e-07	8.259377e-08
177	5.804193e-07	-6.299520e-07	-3.491746e-07	-4.559895e-08	7.224071e-08
178	4.787620e-07	7.466536e-08	7.817892e-07	5.738142e-08	8.066278e-08
179	7.446521e-07	8.524718e-07	-1.266885e-06	1.455103e-07	3.952197e-08
180	-2.377533e-07	4.839119e-07	-6.774583e-07	1.022976e-07	3.572843e-08
181	-2.377533e-07	4.839119e-07	-6.774583e-07	1.022976e-07	3.572843e-08
182	-2.924668e-07	4.839119e-07	1.087158e-06	-4.559895e-08	-8.827237e-07
183	6.385285e-07	7.275065e-07	-1.182954e-06	1.455103e-07	6.620086e-08
184	8.403457e-07	4.839119e-07	-3.997362e-07	-9.563976e-08	7.055881e-08
185	8.870939e-07	5.130332e-07	-3.491746e-07	-7.121540e-08	6.261019e-08
186	-2.924668e-07	-9.217426e-07	1.406807e-06	-4.559895e-08	-4.701447e-08
187	5.260663e-07	-5.898254e-07	1.045738e-06	-4.559895e-08	8.039333e-08
188	3.846396e-07	6.854438e-07	-8.511639e-07	1.589250e-07	7.909160e-08
189	2.746319e-07	-3.408157e-08	3.248752e-07	-4.559895e-08	7.909160e-08
190	2.746319e-07	-8.427546e-08	2.696970e-07	-7.121540e-08	8.039333e-08

191	1.029131e-07	-3.408157e-08	4.431150e-07	1.461542e-07	7.055881e-08
192	1.033778e-06	-6.732435e-07	-1.237680e-07	-7.121540e-08	5.271686e-08
193	8.403457e-07	5.401252e-07	-7.669679e-07	9.001577e-08	1.622829e-08
194	4.328965e-07	2.354558e-07	-3.491746e-07	1.100349e-08	4.587879e-08
195	4.328965e-07	2.354558e-07	-3.491746e-07	1.100349e-08	4.587879e-08
196	3.339539e-07	4.174006e-07	3.248752e-07	-4.559895e-08	5.271686e-08
197	5.804193e-07	3.758986e-07	1.556317e-07	1.022976e-07	5.271686e-08
198	-1.817350e-06	-9.556801e-07	1.518487e-06	-4.559895e-08	3.572843e-08
199	1.523681e-06	9.034346e-07	-9.323354e-07	-2.553407e-07	-2.681306e-08
200	7.933367e-07	1.350085e-06	-1.015647e-06	-1.207004e-08	2.486890e-08
201	-7.218657e-07	-8.846745e-07	1.002594e-06	-1.950685e-07	1.167609e-08
202	-2.377533e-07	-6.732435e-07	1.045738e-06	-1.207004e-08	2.679843e-08
203	8.403457e-07	-3.408157e-08	-8.098654e-07	-1.673771e-07	5.755661e-08
204	7.446521e-07	-4.737109e-07	4.431150e-07	-1.417289e-07	7.486050e-08
205	7.446521e-07	-4.140677e-07	5.023219e-07	-1.417289e-07	6.835400e-08
206	-2.566662e-06	-9.556801e-07	1.981461e-06	1.589250e-07	3.729614e-08
207	-2.566662e-06	-9.556801e-07	1.981461e-06	1.589250e-07	3.729614e-08
208	3.339539e-07	3.292852e-07	2.136912e-07	-9.563976e-08	4.146663e-08
209	3.339539e-07	-3.535391e-07	4.149164e-08	1.567053e-07	1.094567e-08
210	-1.529164e-06	-9.556801e-07	1.444324e-06	-1.207004e-08	5.627579e-09
211	-7.795642e-07	1.288176e-07	1.518487e-06	-4.559895e-08	-6.931579e-08
212	2.149786e-07	7.191894e-07	-1.811450e-07	1.518340e-07	8.442682e-08
213	-1.874989e-06	-3.535391e-07	1.662907e-06	-1.207004e-08	2.008402e-08
214	1.029131e-07	3.292852e-07	-6.841191e-08	1.100349e-08	2.266651e-08
215	3.339539e-07	7.358029e-07	-9.323354e-07	1.022976e-07	5.272762e-08
216	7.446521e-07	-8.427546e-08	1.087158e-06	-2.458274e-08	2.266651e-08
217	-1.807172e-07	5.267317e-07	-5.905550e-07	-4.559895e-08	5.665735e-09
218	1.587053e-07	7.191894e-07	-2.935321e-07	1.100349e-08	4.605984e-08
219	4.787620e-07	-8.427546e-08	-4.502292e-07	-7.121540e-08	6.620086e-08
220	3.339539e-07	1.288176e-07	3.248752e-07	1.022976e-07	7.224071e-08
221	3.339539e-07	-8.039870e-07	5.584314e-07	-4.559895e-08	8.039333e-08
222	5.260663e-07	1.288176e-07	-6.841191e-08	-4.559895e-08	5.665735e-09
223	8.403457e-07	4.839119e-07	-1.099199e-06	-1.673771e-07	1.458012e-08
224	-1.237739e-07	5.739479e-07	-1.237680e-07	-4.559895e-08	8.442682e-08
225	-1.154526e-08	5.524648e-07	5.023219e-07	-4.559895e-08	6.835400e-08
226	3.846396e-07	-4.140677e-07	-1.237680e-07	1.589250e-07	4.742314e-08
227	-2.924668e-07	4.174006e-07	1.129605e-06	-4.559895e-08	-1.234872e-06
228	-3.505905e-07	8.778924e-07	-6.774583e-07	1.589250e-07	6.835400e-08
229	3.846396e-07	-4.140677e-07	-1.237680e-07	1.589250e-07	4.742314e-08
230	7.933367e-07	7.466536e-08	-1.237680e-07	1.589250e-07	6.840977e-08
231	1.621262e-06	-1.337492e-07	-1.099199e-06	-1.417289e-07	5.627579e-09
232	2.149786e-07	-6.299520e-07	-1.015647e-06	-9.563976e-08	6.084576e-08
233	-6.712142e-08	-6.732435e-07	-3.997362e-07	1.518340e-07	6.328653e-08
234	7.933367e-07	7.466536e-08	-1.237680e-07	1.589250e-07	6.840977e-08
235	1.029131e-07	1.191738e-06	-8.912425e-07	5.738142e-08	2.995542e-08

236	6.385285e-07	5.401252e-07	-1.266885e-06	-7.121540e-08	2.679843e-08
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238	6.385285e-07	5.739479e-07	-1.266885e-06	-7.121540e-08	2.679843e-08
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241	-2.924668e-07	5.524648e-07	5.584314e-07	-1.184267e-07	-8.459321e-07
242	-2.105545e-06	-6.299520e-07	1.368925e-06	-1.207004e-08	4.765355e-08
243	3.846396e-07	3.758986e-07	-8.511639e-07	-9.563976e-08	3.853350e-10
244	-3.834736e-06	-1.140218e-06	8.690106e-07	1.100349e-08	5.755661e-08
245	-3.834736e-06	-1.140218e-06	8.690106e-07	1.100349e-08	5.755661e-08
246	5.804193e-07	6.036550e-07	-1.266885e-06	-4.559895e-08	7.909160e-08
247	6.968316e-07	6.413609e-07	-9.739283e-07	-7.121540e-08	5.755661e-08
248	1.029131e-07	4.529497e-07	-5.452466e-07	5.738142e-08	4.605984e-08
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252	6.968316e-07	4.529497e-07	-1.266885e-06	-9.563976e-08	5.271686e-08
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254	3.846396e-07	8.020835e-07	7.817892e-07	-7.121540e-08	5.272762e-08
255	6.968316e-07	4.529497e-07	-1.266885e-06	-9.563976e-08	5.271686e-08
256	2.149786e-07	3.292852e-07	-2.370391e-07	1.277547e-07	4.742314e-08
257	-6.061282e-07	-8.039870e-07	5.584314e-07	1.100349e-08	5.755661e-08
258	9.348770e-07	6.677922e-07	-1.266885e-06	-1.207004e-08	5.755661e-08
259	3.846396e-07	-5.225867e-07	2.043521e-06	-9.563976e-08	-2.675002e-06
260	-9.525852e-07	-9.217426e-07	1.002594e-06	1.589250e-07	8.259377e-08
261	2.746319e-07	-8.453453e-07	-2.370391e-07	-1.184267e-07	7.055881e-08
262	7.446521e-07	1.147753e-06	-1.099199e-06	-4.559895e-08	8.066278e-08
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265	-2.393743e-06	2.835149e-07	1.087158e-06	1.022976e-07	2.902407e-08
266	-1.990267e-06	-1.067556e-06	1.211874e-06	-9.563976e-08	4.587879e-08
267	1.587053e-07	9.636699e-07	-1.266885e-06	1.214781e-07	3.206437e-08
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269	7.933367e-07	1.839437e-07	-1.099199e-06	1.402156e-07	7.055881e-08
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289	-1.807172e-07	7.466536e-08	-8.912425e-07	1.455103e-07	5.780701e-08
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297	-1.298646e-06	8.948957e-07	5.584314e-07	1.589250e-07	8.468339e-08
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318	-7.218657e-07	7.937749e-07	-7.669679e-07	1.461542e-07	8.039333e-08
319	-8.372459e-07	6.036550e-07	6.559329e-07	1.277547e-07	8.442682e-08
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322	-5.452606e-07	4.839119e-07	-6.841191e-08	1.151666e-07	6.328653e-08
323	3.339539e-07	5.130332e-07	-1.057370e-06	5.738142e-08	6.261019e-08
324	-1.125716e-06	4.174006e-07	7.817892e-07	1.518340e-07	6.328653e-08
325	-9.525852e-07	-8.427546e-08	-3.997362e-07	-3.821410e-07	4.587879e-08

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328	-1.125716e-06	-3.535391e-07	1.129605e-06	4.576215e-08	-2.596940e-08
329	-2.912500e-06	-1.043878e-06	1.591430e-06	1.589250e-07	8.039333e-08
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331	-1.068026e-06	-7.167856e-07	1.662907e-06	1.461542e-07	-1.048381e-07
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333	2.149786e-07	3.758986e-07	4.149164e-08	1.277547e-07	3.199779e-08
334	-1.154526e-08	2.835149e-07	-9.323354e-07	-1.207004e-08	-1.543962e-08
335	2.746319e-07	5.838653e-07	-1.224916e-06	1.455103e-07	6.084576e-08
336	-2.047906e-06	6.677922e-07	1.251645e-06	1.151666e-07	-1.363746e-07
337	-2.924668e-07	-4.140677e-07	9.135059e-07	-7.121540e-08	-7.178486e-10
338	3.339539e-07	-4.140677e-07	2.696970e-07	1.518340e-07	7.224071e-08
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340	-2.393743e-06	-1.017300e-06	1.291156e-06	5.738142e-08	8.039333e-08
341	-2.220824e-06	-8.039870e-07	1.129605e-06	1.022976e-07	3.199779e-08
342	-1.298646e-06	-4.737109e-07	1.045738e-06	1.567053e-07	2.995542e-08
343	-1.471529e-06	-5.898254e-07	1.002594e-06	-9.563976e-08	-8.381383e-08
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345	-2.047906e-06	3.292852e-07	1.129605e-06	1.589250e-07	8.039333e-08
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352	-4.150472e-07	8.355905e-07	-1.266885e-06	1.589250e-07	3.206437e-08
353	3.846396e-07	6.133245e-07	-1.266885e-06	1.022976e-07	6.328653e-08
354	-2.970140e-06	1.288176e-07	2.136612e-06	2.664563e-08	-9.432598e-08
355	1.181784e-06	-1.140218e-06	6.975014e-07	-1.950685e-07	3.199779e-08
356	8.870939e-07	7.608144e-07	-1.224916e-06	1.022976e-07	6.084576e-08
357	-1.817350e-06	-5.225867e-07	1.211874e-06	1.402156e-07	7.224071e-08
358	-1.241017e-06	-4.737109e-07	1.732423e-06	1.431829e-07	-7.330166e-08
359	-2.047906e-06	-4.140677e-07	1.732423e-06	1.340186e-07	-3.649329e-08
360	-2.451382e-06	-6.299520e-07	1.732423e-06	1.589250e-07	7.486050e-08
361	1.029131e-07	6.766699e-07	-2.370391e-07	-4.559895e-08	1.622829e-08
362	-1.237739e-07	-2.950422e-07	2.136912e-07	1.589250e-07	8.468339e-08
363	-2.047906e-06	3.758986e-07	1.732423e-06	1.455103e-07	4.605984e-08
364	-2.393743e-06	-2.388716e-07	1.627404e-06	-4.559895e-08	4.587879e-08
365	-2.566662e-06	4.987223e-07	1.732423e-06	-3.747385e-08	8.442682e-08
366	-9.525852e-07	-4.737109e-07	1.129605e-06	1.151666e-07	-2.596940e-08
367	-2.566662e-06	4.987223e-07	1.732423e-06	-3.747385e-08	8.442682e-08
368	-1.183377e-06	3.530209e-07	1.555076e-06	1.589250e-07	6.620086e-08
369	-1.125716e-06	-8.039870e-07	1.211874e-06	1.518340e-07	-2.993117e-07
370	-6.061282e-07	-1.043878e-06	1.251645e-06	1.022976e-07	5.271686e-08

371	7.933367e-07	7.855131e-07	-1.182954e-06	5.738142e-08	2.823207e-08
372	2.746319e-07	-1.105254e-06	6.975014e-07	-1.417289e-07	1.167609e-08
373	-4.150472e-07	-1.017300e-06	1.045738e-06	-9.563976e-08	3.572843e-08
374	5.260663e-07	2.354558e-07	-2.935321e-07	1.100349e-08	-2.070427e-08
375	-3.258339e-06	-5.225867e-07	1.627404e-06	9.001577e-08	6.835400e-08
376	-1.817350e-06	1.839437e-07	1.888370e-06	5.212399e-08	-1.153503e-07
377	-1.817350e-06	-2.950422e-07	1.129605e-06	1.402156e-07	6.084576e-08
378	-6.061282e-07	-1.043878e-06	1.251645e-06	1.022976e-07	5.271686e-08
379	-1.759712e-06	5.267317e-07	1.732423e-06	-6.310747e-08	7.486050e-08
380	4.505265e-08	-4.737109e-07	6.098883e-07	1.455103e-07	4.248468e-08
381	4.505265e-08	-1.067556e-06	7.817892e-07	-4.559895e-08	7.224071e-08
382	-3.085420e-06	-4.998949e-07	1.795279e-06	1.461542e-07	8.259377e-08
383	4.505265e-08	-1.067556e-06	7.817892e-07	-4.559895e-08	7.224071e-08
384	4.505265e-08	-1.067556e-06	7.817892e-07	-4.559895e-08	7.224071e-08
385	3.846396e-07	2.012147e-08	4.149164e-08	-1.207004e-08	8.066278e-08
386	5.260663e-07	5.401252e-07	-9.739283e-07	1.022976e-07	6.328653e-08
387	3.339539e-07	1.839437e-07	-6.841191e-08	-4.559895e-08	7.486050e-08
388	4.505265e-08	6.036550e-07	-6.338308e-07	-7.121540e-08	6.261019e-08
389	3.339539e-07	-2.388716e-07	-6.841191e-08	-7.121540e-08	7.486050e-08
390	-7.218657e-07	-6.299520e-07	2.136912e-07	1.455103e-07	3.206437e-08
391	1.426101e-06	9.291503e-07	-1.057370e-06	-1.950685e-07	-3.288488e-08
392	-3.085420e-06	-4.998949e-07	1.795279e-06	1.461542e-07	8.259377e-08
393	-6.641668e-07	-6.732435e-07	1.211874e-06	-4.559895e-08	8.039333e-08
394	-1.154526e-08	6.133245e-07	1.555076e-06	-4.559895e-08	-5.227412e-08
395	-2.509022e-06	4.529497e-07	1.697719e-06	5.738142e-08	2.823207e-08
396	-2.105545e-06	-6.732435e-07	2.043521e-06	6.482585e-08	3.199779e-08
397	9.348770e-07	7.358029e-07	-1.182954e-06	-1.760021e-07	-1.048381e-07
398	-1.817350e-06	4.174006e-07	1.481563e-06	1.589250e-07	8.066278e-08
399	-1.817350e-06	4.174006e-07	1.481563e-06	1.589250e-07	8.066278e-08
400	-1.807172e-07	7.855131e-07	-2.935321e-07	5.738142e-08	2.902407e-08
401	9.348770e-07	7.358029e-07	-1.182954e-06	-1.760021e-07	-1.048381e-07
402	3.846396e-07	-1.067556e-06	1.556317e-07	-1.184267e-07	2.008402e-08
403	-2.220824e-06	-1.337492e-07	1.291156e-06	1.589250e-07	8.259377e-08
404	-1.759712e-06	4.529497e-07	1.087158e-06	1.567053e-07	8.259377e-08
405	3.846396e-07	6.590682e-07	-1.057370e-06	1.567053e-07	5.755661e-08
406	-1.807172e-07	-9.217426e-07	9.583580e-07	-1.950685e-07	2.008402e-08
407	-8.372459e-07	-3.535391e-07	1.002594e-06	1.455103e-07	2.823207e-08
408	-2.105545e-06	-5.898254e-07	1.732423e-06	1.402156e-07	4.765355e-08
409	-1.183377e-06	-8.039870e-07	1.444324e-06	9.629783e-08	-3.781518e-07
410	-2.393743e-06	-2.388716e-07	1.087158e-06	4.576215e-08	4.317297e-08
411	-3.505905e-07	-4.140677e-07	3.833080e-07	1.455103e-07	7.224071e-08
412	-4.150472e-07	-2.950422e-07	4.431150e-07	1.022976e-07	7.224071e-08
413	6.968316e-07	7.358029e-07	-5.905550e-07	-7.121540e-08	1.094567e-08
414	-8.949121e-07	-5.572288e-07	1.251645e-06	-9.620641e-08	2.679843e-08
415	-2.377533e-07	7.466536e-08	3.833080e-07	1.567053e-07	8.066278e-08

416	-1.237739e-07	7.191894e-07	-1.811450e-07	-8.955677e-08	-7.855775e-08
417	-1.298646e-06	-1.337492e-07	1.662907e-06	1.100349e-08	-4.701447e-08
418	7.446521e-07	3.758986e-07	-7.669679e-07	-7.121540e-08	5.780701e-08
419	-2.047906e-06	-6.299520e-07	1.171028e-06	-4.559895e-08	-9.958205e-08
420	8.403457e-07	7.937749e-07	-1.266885e-06	-9.563976e-08	3.199779e-08
421	-6.641668e-07	2.835149e-07	3.248752e-07	1.022976e-07	6.835400e-08
422	9.348770e-07	9.119893e-07	-1.141060e-06	5.738142e-08	2.008402e-08
423	3.846396e-07	1.121361e-06	-3.997362e-07	-4.559895e-08	-2.074124e-08
424	-1.241017e-06	-1.105254e-06	1.002594e-06	-1.207004e-08	3.199779e-08
425	3.846396e-07	1.121361e-06	-3.997362e-07	-4.559895e-08	-2.074124e-08
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428	-6.641668e-07	8.104161e-07	-2.935321e-07	-7.121540e-08	7.055881e-08
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432	3.339539e-07	2.354558e-07	4.431150e-07	1.100349e-08	5.271686e-08
433	-2.047906e-06	-6.732435e-07	1.826309e-06	5.738142e-08	6.084576e-08
434	-2.278463e-06	-5.898254e-07	1.627404e-06	5.738142e-08	5.780701e-08
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441	-2.451382e-06	-9.217426e-07	1.919400e-06	1.100349e-08	4.605984e-08
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445	1.572472e-06	3.292852e-07	-1.224916e-06	-1.184267e-07	5.627579e-09
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456	-1.702074e-06	5.130332e-07	1.764248e-06	1.093445e-09	8.468339e-08
457	-2.924668e-07	4.174006e-07	6.559329e-07	5.738142e-08	3.729614e-08
458	-4.813379e-07	5.401252e-07	-3.491746e-07	1.567053e-07	2.679843e-08
459	-1.183377e-06	-8.453453e-07	1.627404e-06	1.518340e-07	7.909160e-08
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461	-4.813379e-07	-4.140677e-07	1.211874e-06	5.738142e-08	8.442682e-08
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465	-1.817350e-06	-9.035114e-07	1.291156e-06	-1.207004e-08	7.909160e-08
466	-9.525852e-07	-9.875367e-07	6.975014e-07	1.461542e-07	2.151427e-08
467	-1.125716e-06	-3.408157e-08	7.817892e-07	-4.559895e-08	4.146663e-08
468	-2.377533e-07	-2.388716e-07	9.135059e-07	1.589250e-07	2.995542e-08
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470	-1.807172e-07	8.778924e-07	-1.182954e-06	-2.553407e-07	4.317297e-08
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479	-7.218657e-07	6.413609e-07	-1.811450e-07	1.100349e-08	8.066278e-08
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481	-1.298646e-06	-1.017300e-06	6.559329e-07	-6.813749e-07	4.146663e-08
482	-6.061282e-07	-9.556801e-07	1.368925e-06	1.518340e-07	7.224071e-08
483	-1.298646e-06	-7.167856e-07	1.481563e-06	1.100349e-08	-2.625195e-07
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485	-1.298646e-06	-3.535391e-07	1.795279e-06	7.116378e-08	-6.278841e-08
486	-1.068026e-06	6.228241e-07	6.559329e-07	-7.121540e-08	5.627579e-09
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489	-1.874989e-06	-8.846745e-07	1.330290e-06	1.518340e-07	6.840977e-08
490	-5.452606e-07	-5.898254e-07	6.975014e-07	1.589250e-07	4.742314e-08
491	-5.452606e-07	8.020835e-07	-1.438321e-08	1.518340e-07	6.084576e-08
492	-4.813379e-07	-5.225867e-07	1.129605e-06	1.455103e-07	8.681489e-09
493	-2.924668e-07	-5.572288e-07	1.171028e-06	1.589250e-07	-7.178486e-10
494	-1.807172e-07	6.590682e-07	2.136912e-07	1.402156e-07	8.468339e-08
495	9.841694e-07	-5.898254e-07	-2.370391e-07	-2.026007e-07	-4.043402e-09
496	-1.356271e-06	-7.605810e-07	1.251645e-06	1.589250e-07	4.317297e-08
497	3.339539e-07	7.466536e-08	-1.237680e-07	-7.121540e-08	6.840977e-08
498	6.385285e-07	-8.039870e-07	2.696970e-07	1.455103e-07	6.328653e-08
499	-1.356271e-06	-7.605810e-07	1.251645e-06	1.589250e-07	4.317297e-08
500	-1.807172e-07	6.590682e-07	2.136912e-07	1.402156e-07	8.468339e-08
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502	-1.183377e-06	-3.535391e-07	1.950430e-06	-8.623195e-08	5.271686e-08
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504	-1.241017e-06	-1.067556e-06	1.002594e-06	-7.121540e-08	6.084576e-08
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507	-1.183377e-06	-1.105254e-06	9.583580e-07	-9.563976e-08	5.755661e-08
508	-1.644436e-06	6.228241e-07	1.330290e-06	5.738142e-08	7.909160e-08
509	-9.525852e-07	4.174006e-07	2.136912e-07	1.100349e-08	6.328653e-08
510	-2.854861e-06	-9.875367e-07	2.012491e-06	1.518340e-07	7.909160e-08
511	-2.336103e-06	-4.737109e-07	1.087158e-06	3.939554e-08	4.742314e-08
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514	-1.241017e-06	2.012147e-08	1.662907e-06	1.022976e-07	-2.596940e-08
515	-1.241017e-06	2.012147e-08	1.662907e-06	1.022976e-07	-2.596940e-08
516	-6.712142e-08	5.937276e-07	1.087158e-06	-5.672593e-08	-1.048381e-07
517	-2.393743e-06	4.529497e-07	1.087158e-06	5.847877e-08	1.094567e-08
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520	5.804193e-07	-6.949387e-07	1.087158e-06	1.455103e-07	7.486050e-08
521	-8.372459e-07	-1.087516e-06	1.087158e-06	1.567053e-07	7.486050e-08
522	4.328965e-07	-5.225867e-07	1.087158e-06	-4.559895e-08	7.486050e-08
523	1.029131e-07	-5.898254e-07	1.087158e-06	5.738142e-08	1.622829e-08
524	-5.452606e-07	-5.572288e-07	1.087158e-06	1.455103e-07	8.259377e-08
525	-4.813379e-07	-4.140677e-07	1.087158e-06	1.022976e-07	8.468339e-08
526	-1.183377e-06	5.633962e-07	-1.811450e-07	1.518340e-07	-1.543962e-08
527	5.804193e-07	-6.949387e-07	1.087158e-06	1.455103e-07	7.486050e-08
528	7.446521e-07	-6.299520e-07	1.087158e-06	1.455103e-07	2.679843e-08
529	1.029131e-07	-4.737109e-07	1.087158e-06	1.589250e-07	7.909160e-08
530	-8.949121e-07	5.401252e-07	-1.811450e-07	1.022976e-07	7.055881e-08
531	-4.150472e-07	-1.128754e-06	-1.811450e-07	-1.207004e-08	6.084576e-08
532	-2.047906e-06	-6.299520e-07	1.087158e-06	1.567053e-07	2.151427e-08
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534	-1.125716e-06	-1.043878e-06	-1.811450e-07	-1.207004e-08	4.605984e-08
535	-9.525852e-07	-1.337492e-07	-1.811450e-07	1.567053e-07	3.853350e-10
536	-4.150472e-07	-1.128754e-06	-1.811450e-07	-1.207004e-08	6.084576e-08
537	-8.949121e-07	5.401252e-07	-1.811450e-07	1.022976e-07	7.055881e-08
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540	-1.644436e-06	-3.408157e-08	1.981461e-06	4.292550e-09	1.094567e-08
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542	-6.641668e-07	-2.388716e-07	1.087158e-06	-6.960785e-08	2.902407e-08
543	-5.452606e-07	7.024634e-07	-1.811450e-07	-1.207004e-08	4.317297e-08
544	-1.644436e-06	6.036550e-07	-1.811450e-07	1.455103e-07	8.259377e-08
545	-3.431258e-06	-9.217426e-07	1.981461e-06	-9.563976e-08	5.755661e-08
546	-4.150472e-07	-1.849636e-07	1.087158e-06	1.589250e-07	4.248468e-08
547	4.787620e-07	2.354558e-07	-1.811450e-07	-4.559895e-08	6.084576e-08
548	-1.298646e-06	-9.217426e-07	1.087158e-06	1.455103e-07	3.572843e-08
549	-2.336103e-06	-7.605810e-07	1.087158e-06	1.589250e-07	6.261019e-08
550	-3.505905e-07	1.288176e-07	1.087158e-06	-7.121540e-08	-3.623838e-07

551	8.403457e-07	2.012147e-08	-1.224916e-06	-1.207004e-08	5.271686e-08
552	-6.061282e-07	-4.140677e-07	-1.811450e-07	1.518340e-07	5.272762e-08
553	-6.641668e-07	-2.388716e-07	-1.811450e-07	1.567053e-07	5.272762e-08
554	1.718842e-06	1.262114e-06	-1.811450e-07	-1.417289e-07	-7.460363e-09
555	-4.122935e-06	5.739479e-07	1.087158e-06	6.482585e-08	3.729614e-08
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557	-1.471529e-06	1.288176e-07	1.087158e-06	3.939554e-08	-8.381383e-08
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560	-2.681941e-06	-1.849636e-07	1.087158e-06	5.847877e-08	8.259377e-08
561	-2.509022e-06	4.529497e-07	1.087158e-06	1.518340e-07	5.755661e-08
562	-3.505905e-07	-3.535391e-07	1.087158e-06	1.022976e-07	6.084576e-08
563	-3.505905e-07	1.839437e-07	1.087158e-06	1.461542e-07	4.248468e-08
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567	-1.807172e-07	6.766699e-07	-1.811450e-07	1.455103e-07	-6.514620e-07
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569	-8.372459e-07	-3.408157e-08	1.087158e-06	1.589250e-07	-7.776048e-07
570	1.132640e-06	-7.167856e-07	-1.811450e-07	1.100349e-08	3.729614e-08
571	-1.817350e-06	-7.605810e-07	1.087158e-06	1.214781e-07	4.317297e-08
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574	-1.241017e-06	4.174006e-07	1.087158e-06	-1.207004e-08	4.317297e-08
575	-1.298646e-06	-8.039870e-07	1.087158e-06	1.277547e-07	6.084576e-08
576	-2.278463e-06	-1.043878e-06	1.087158e-06	1.340186e-07	6.261019e-08
577	-8.949121e-07	-3.408157e-08	-1.811450e-07	5.738142e-08	-4.893533e-09
578	-2.377533e-07	-3.535391e-07	1.087158e-06	1.518340e-07	8.442682e-08
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583	-1.932628e-06	-8.427546e-08	1.087158e-06	1.100349e-08	8.442682e-08
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588	5.804193e-07	7.275065e-07	-1.811450e-07	-7.121540e-08	-3.123197e-08
589	1.718842e-06	-4.737109e-07	-1.811450e-07	-4.559895e-08	2.266651e-08
590	-1.068026e-06	-9.875367e-07	1.087158e-06	1.589250e-07	2.008402e-08
591	-3.505905e-07	-2.950422e-07	1.087158e-06	1.589250e-07	7.909160e-08
592	9.348770e-07	-5.898254e-07	1.087158e-06	-1.184267e-07	4.317297e-08
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596	-2.924668e-07	4.357764e-07	7.388933e-07	-1.760021e-07	8.468339e-08
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601	1.029131e-07	1.042197e-06	-1.438321e-08	-1.207004e-08	7.486050e-08
602	-2.797221e-06	-2.388716e-07	1.211874e-06	1.100349e-08	4.587879e-08
603	3.846396e-07	9.034346e-07	-1.266885e-06	1.589250e-07	6.840977e-08
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605	4.505265e-08	3.758986e-07	-7.223371e-07	1.461542e-07	3.206437e-08
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607	-6.061282e-07	-5.225867e-07	1.045738e-06	3.939554e-08	4.605984e-08
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638	-6.641668e-07	9.897283e-07	-1.438321e-08	5.738142e-08	7.909160e-08
639	3.846396e-07	1.042197e-06	-7.669679e-07	1.100349e-08	-2.152152e-07
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647	5.804193e-07	6.228241e-07	-1.057370e-06	1.025832e-07	-2.596940e-08
648	4.505265e-08	9.205596e-07	-1.224916e-06	1.100349e-08	4.317297e-08
649	-1.807172e-07	-1.337492e-07	1.556317e-07	1.518340e-07	3.199779e-08
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653	-4.353494e-06	-7.167856e-07	1.697719e-06	-1.494035e-07	3.206437e-08
654	-6.061282e-07	-8.453453e-07	1.481563e-06	1.518340e-07	6.261019e-08
655	-1.237739e-07	-1.849636e-07	1.002594e-06	1.022976e-07	5.271686e-08
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658	-2.105545e-06	-3.408157e-08	1.481563e-06	-1.950685e-07	4.742314e-08
659	6.385285e-07	7.466536e-08	-9.739283e-07	-1.950685e-07	5.271686e-08
660	6.968316e-07	9.119893e-07	-1.182954e-06	5.212399e-08	3.206437e-08
661	6.385285e-07	7.466536e-08	-9.739283e-07	-1.950685e-07	5.271686e-08
662	4.787620e-07	-4.737109e-07	2.136912e-07	-1.417289e-07	7.224071e-08
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667	4.505265e-08	-8.427546e-08	5.023219e-07	-9.563976e-08	-6.304382e-07
668	-1.702074e-06	-8.039870e-07	9.135059e-07	-4.559895e-08	8.039333e-08
669	-9.525852e-07	7.275065e-07	8.254983e-07	5.738142e-08	2.008402e-08
670	-1.702074e-06	-8.039870e-07	9.135059e-07	-4.559895e-08	8.039333e-08
671	7.933367e-07	-5.572288e-07	-1.811450e-07	1.455103e-07	8.442682e-08
672	1.029131e-07	7.275065e-07	-3.491746e-07	-1.184267e-07	5.271686e-08
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675	-1.413897e-06	-5.572288e-07	7.388933e-07	1.100349e-08	7.909160e-08
676	-5.452606e-07	-5.225867e-07	6.559329e-07	1.100349e-08	2.902407e-08
677	-1.413897e-06	-5.572288e-07	7.388933e-07	1.100349e-08	7.909160e-08
678	-1.237739e-07	8.440254e-07	-8.098654e-07	5.738142e-08	7.909160e-08
679	4.505265e-08	8.104161e-07	-8.511639e-07	1.589250e-07	6.840977e-08
680	-1.413897e-06	-1.067556e-06	9.135059e-07	1.214781e-07	2.266651e-08
681	-2.854861e-06	-4.140677e-07	1.444324e-06	-7.121540e-08	4.317297e-08
682	2.149786e-07	-2.950422e-07	-2.370391e-07	1.100349e-08	4.248468e-08
683	-6.712142e-08	-2.388716e-07	2.136912e-07	3.420559e-08	6.084576e-08
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688	-4.150472e-07	5.633962e-07	-2.370391e-07	1.340186e-07	3.729614e-08
689	3.846396e-07	6.036550e-07	-1.099199e-06	-1.417289e-07	-6.931579e-08
690	1.587053e-07	-6.299520e-07	1.045738e-06	-9.563976e-08	-2.887996e-07
691	5.260663e-07	1.517230e-06	-1.266885e-06	6.165256e-08	2.679843e-08
692	-4.813379e-07	1.050985e-06	-1.811450e-07	1.589250e-07	8.066278e-08
693	-1.237739e-07	-8.427546e-08	1.171028e-06	-4.559895e-08	-1.681628e-06
694	-3.505905e-07	-1.337492e-07	2.696970e-07	1.518340e-07	7.909160e-08
695	-3.505905e-07	-1.849636e-07	2.136912e-07	1.567053e-07	7.909160e-08
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697	7.446521e-07	5.838653e-07	-1.182954e-06	-1.207004e-08	3.199779e-08
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700	-1.990267e-06	-6.299520e-07	1.330290e-06	-1.207004e-08	4.587879e-08
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702	7.446521e-07	5.838653e-07	-1.182954e-06	-1.207004e-08	3.199779e-08
703	7.446521e-07	5.633962e-07	-1.182954e-06	-1.207004e-08	3.572843e-08
704	4.787620e-07	-6.299520e-07	1.045738e-06	1.589250e-07	4.742314e-08
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706	-1.154526e-08	1.253317e-06	-6.338308e-07	-5.036871e-08	4.742314e-08
707	7.446521e-07	8.104161e-07	-9.323354e-07	-4.559895e-08	4.765355e-08
708	5.260663e-07	-8.427546e-08	-4.502292e-07	1.402156e-07	7.055881e-08
709	3.339539e-07	2.097921e-07	-7.669679e-07	1.455103e-07	3.952197e-08
710	-7.795642e-07	-9.217426e-07	1.002594e-06	-1.417289e-07	2.675330e-08
711	-1.298646e-06	1.235723e-06	8.254983e-07	1.518340e-07	7.224071e-08
712	-2.924668e-07	3.062055e-07	3.833080e-07	1.402156e-07	4.765355e-08
713	-1.807172e-07	6.590682e-07	-1.266885e-06	1.277547e-07	7.909160e-08
714	2.149786e-07	-4.140677e-07	5.023219e-07	5.738142e-08	5.755661e-08
715	-8.949121e-07	7.441292e-07	4.149164e-08	1.589250e-07	6.084576e-08
716	6.385285e-07	-8.427546e-08	-4.984645e-07	1.567053e-07	4.146663e-08
717	2.149786e-07	-4.140677e-07	5.023219e-07	5.738142e-08	5.755661e-08
718	4.328965e-07	-2.388716e-07	-8.098654e-07	1.589250e-07	6.261019e-08
719	-1.154526e-08	2.835149e-07	-1.099199e-06	-4.559895e-08	8.039333e-08
720	6.968316e-07	6.036550e-07	-1.266885e-06	8.373160e-08	8.468339e-08
721	-1.154526e-08	2.835149e-07	-1.099199e-06	-4.559895e-08	8.039333e-08
722	-2.924668e-07	-1.337492e-07	-1.811450e-07	1.489977e-07	4.248468e-08
723	4.328965e-07	-4.737109e-07	-9.323354e-07	1.567053e-07	7.909160e-08
724	6.968316e-07	-9.217426e-07	1.556317e-07	1.100349e-08	2.495497e-09
725	4.787620e-07	1.394071e-06	-8.511639e-07	1.340186e-07	8.468339e-08
726	-3.505905e-07	6.036550e-07	-5.452466e-07	1.402156e-07	7.055881e-08
727	1.587053e-07	7.108504e-07	-8.912425e-07	1.518340e-07	7.909160e-08
728	1.033778e-06	3.292852e-07	-1.182954e-06	-9.563976e-08	3.572843e-08
729	1.033778e-06	3.292852e-07	-1.182954e-06	-9.563976e-08	3.572843e-08
730	1.033778e-06	9.550126e-07	-1.141060e-06	1.277547e-07	4.587879e-08

731	-6.641668e-07	2.354558e-07	1.732423e-06	5.738142e-08	-1.497670e-06
732	-2.924668e-07	9.723552e-07	-7.223371e-07	1.119892e-07	7.486050e-08
733	5.804193e-07	9.034346e-07	-1.141060e-06	-1.207004e-08	5.272762e-08
734	7.446521e-07	-2.950422e-07	3.833080e-07	1.567053e-07	8.039333e-08
735	3.846396e-07	2.835149e-07	-3.997362e-07	-4.559895e-08	5.755661e-08
736	3.846396e-07	1.130158e-06	-8.511639e-07	-1.207004e-08	-5.227412e-08
737	3.846396e-07	1.130158e-06	-8.511639e-07	-1.207004e-08	-5.227412e-08
738	1.029131e-07	4.174006e-07	-1.266885e-06	1.455103e-07	4.765355e-08
739	-3.505905e-07	-2.388716e-07	-2.370391e-07	1.518340e-07	5.272762e-08
740	-3.505905e-07	6.590682e-07	-1.266885e-06	1.022976e-07	7.486050e-08
741	4.505265e-08	7.772737e-07	9.791995e-08	6.482585e-08	5.755661e-08
742	-4.813379e-07	1.288176e-07	-1.811450e-07	1.589250e-07	6.084576e-08
743	9.841694e-07	4.987223e-07	-1.266885e-06	-7.121540e-08	2.995542e-08
744	-1.874989e-06	-5.225867e-07	1.444324e-06	1.518340e-07	3.206437e-08
745	-1.586800e-06	-5.898254e-07	1.291156e-06	1.567053e-07	3.729614e-08
746	5.804193e-07	2.012147e-08	-4.984645e-07	-1.207004e-08	4.317297e-08
747	1.029131e-07	-8.039870e-07	6.098883e-07	1.455103e-07	7.224071e-08
748	-1.237739e-07	-8.453453e-07	6.975014e-07	1.589250e-07	8.442682e-08
749	6.385285e-07	-3.408157e-08	-4.984645e-07	-1.207004e-08	4.587879e-08
750	5.804193e-07	2.012147e-08	-4.984645e-07	-1.207004e-08	4.317297e-08
751	4.505265e-08	5.838653e-07	-8.511639e-07	1.461542e-07	6.835400e-08
752	4.505265e-08	5.838653e-07	-8.511639e-07	1.461542e-07	6.835400e-08
753	4.328965e-07	1.839437e-07	-7.223371e-07	1.455103e-07	2.679843e-08
754	4.505265e-08	5.838653e-07	-8.511639e-07	1.461542e-07	6.835400e-08
755	3.339539e-07	-1.337492e-07	1.795279e-06	-1.184267e-07	-1.644836e-06
756	3.339539e-07	1.033461e-06	-9.739283e-07	-7.121540e-08	1.739086e-08
757	1.083292e-06	1.156550e-06	-1.224916e-06	-4.559895e-08	1.458012e-08
758	1.587053e-07	9.636699e-07	-1.266885e-06	1.100349e-08	7.909160e-08
759	1.587053e-07	9.636699e-07	-1.266885e-06	1.100349e-08	7.909160e-08
760	-2.377533e-07	-4.737109e-07	-3.491746e-07	1.455103e-07	5.272762e-08
761	-3.505905e-07	3.758986e-07	-1.237680e-07	1.518340e-07	5.755661e-08
762	-5.452606e-07	5.937276e-07	-6.841191e-08	-4.559895e-08	3.206437e-08
763	-2.377533e-07	6.766699e-07	-1.266885e-06	-1.184267e-07	4.146663e-08
764	-5.452606e-07	5.937276e-07	-6.841191e-08	-4.559895e-08	3.206437e-08
765	-4.150472e-07	6.413609e-07	-8.098654e-07	1.518340e-07	4.765355e-08
766	-4.813379e-07	6.228241e-07	-8.511639e-07	1.402156e-07	5.780701e-08
767	-2.377533e-07	4.174006e-07	-4.984645e-07	1.461542e-07	6.835400e-08
768	4.787620e-07	4.529497e-07	2.696970e-07	1.567053e-07	-4.893533e-09
769	6.968316e-07	4.174006e-07	-1.182954e-06	5.738142e-08	8.039333e-08
770	2.746319e-07	7.108504e-07	-1.224916e-06	-7.121540e-08	6.620086e-08
771	6.968316e-07	4.174006e-07	-1.182954e-06	5.738142e-08	8.039333e-08
772	-6.061282e-07	6.503875e-07	-6.841191e-08	1.022976e-07	8.039333e-08
773	-6.641668e-07	3.292852e-07	-1.438321e-08	5.738142e-08	8.039333e-08
774	2.746319e-07	-5.572288e-07	9.791995e-08	-9.563976e-08	-2.887996e-07
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776	6.385285e-07	1.191738e-06	-1.266885e-06	1.402156e-07	3.853350e-10
777	7.933367e-07	7.855131e-07	-4.984645e-07	1.022976e-07	-7.408131e-07
778	7.933367e-07	5.524648e-07	-5.452466e-07	1.022976e-07	-7.303012e-07
779	4.505265e-08	-4.140677e-07	1.556317e-07	1.151666e-07	6.261019e-08
780	6.968316e-07	7.466536e-08	-1.141060e-06	1.589250e-07	6.620086e-08
781	7.446521e-07	3.292852e-07	-1.266885e-06	-4.559895e-08	-4.622475e-07
782	9.841694e-07	-2.388716e-07	-6.774583e-07	1.022976e-07	-6.278841e-08
783	-3.505905e-07	8.778924e-07	-1.057370e-06	1.022976e-07	6.840977e-08
784	9.841694e-07	-2.388716e-07	-6.774583e-07	1.022976e-07	-6.278841e-08
785	6.968316e-07	4.174006e-07	-1.224916e-06	1.455103e-07	7.055881e-08
786	-8.949121e-07	-7.605810e-07	7.388933e-07	5.738142e-08	8.442682e-08
787	-8.949121e-07	-7.605810e-07	7.388933e-07	5.738142e-08	8.442682e-08
788	-9.525852e-07	2.835149e-07	-1.811450e-07	1.100349e-08	6.261019e-08
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790	-1.237739e-07	5.401252e-07	-5.452466e-07	1.461542e-07	1.622829e-08
791	5.260663e-07	-6.732435e-07	8.254983e-07	1.589250e-07	8.039333e-08
792	-2.377533e-07	5.633962e-07	-5.452466e-07	1.461542e-07	7.909160e-08
793	6.968316e-07	4.839119e-07	-1.182954e-06	1.455103e-07	6.840977e-08
794	3.846396e-07	4.529497e-07	-1.266885e-06	1.589250e-07	8.681489e-09
795	-1.010306e-06	-1.043878e-06	1.291156e-06	5.738142e-08	2.995542e-08
796	-1.413897e-06	9.984376e-07	1.556317e-07	1.589250e-07	-1.573988e-07
797	-1.807172e-07	-2.388716e-07	2.136912e-07	1.455103e-07	-1.258624e-07
798	-5.452606e-07	-6.732435e-07	8.690106e-07	-1.417289e-07	-7.538761e-08
799	-6.061282e-07	-3.408157e-08	3.833080e-07	1.025832e-07	8.039333e-08
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801	6.385285e-07	4.839119e-07	-9.323354e-07	7.745417e-08	8.039333e-08
802	-1.237739e-07	2.354558e-07	-8.912425e-07	1.214781e-07	3.952197e-08
803	1.670052e-06	3.981340e-07	-1.266885e-06	-1.184267e-07	-3.895669e-08
804	3.846396e-07	2.835149e-07	-9.323354e-07	1.455103e-07	-6.278841e-08
805	-1.154526e-08	7.466536e-08	-2.935321e-07	1.567053e-07	7.909160e-08
806	1.029131e-07	-1.017300e-06	6.975014e-07	1.022976e-07	-7.178486e-10
807	-1.154526e-08	-1.087516e-06	6.559329e-07	-4.559895e-08	-5.717215e-08
808	1.029131e-07	-1.017300e-06	6.975014e-07	1.022976e-07	-7.178486e-10
809	5.260663e-07	1.288176e-07	-7.669679e-07	-7.121540e-08	-3.308477e-07
810	4.328965e-07	-1.337492e-07	2.136912e-07	1.518340e-07	4.317297e-08
811	5.804193e-07	-8.427546e-08	-8.511639e-07	1.589250e-07	3.952197e-08
812	-2.624302e-06	-3.408157e-08	1.330290e-06	1.518340e-07	4.605984e-08
813	-1.413897e-06	-2.950422e-07	3.248752e-07	1.455103e-07	1.622829e-08
814	7.933367e-07	-5.898254e-07	-1.811450e-07	-1.207004e-08	3.853350e-10
815	-2.451382e-06	-5.225867e-07	1.291156e-06	1.518340e-07	-4.893533e-09
816	-1.413897e-06	-2.950422e-07	3.248752e-07	1.455103e-07	1.622829e-08
817	-8.372459e-07	2.012147e-08	-4.502292e-07	1.277547e-07	6.840977e-08
818	-1.413897e-06	-9.875367e-07	7.817892e-07	-1.417289e-07	7.909160e-08
819	6.968316e-07	7.024634e-07	-1.266885e-06	7.979141e-08	4.587879e-08
820	-4.150472e-07	6.036550e-07	-6.338308e-07	1.277547e-07	2.679843e-08

821	7.446521e-07	6.503875e-07	-1.266885e-06	-7.121540e-08	1.622829e-08
822	1.767632e-06	-4.737109e-07	-1.266885e-06	-1.207004e-08	-1.469264e-08
823	8.870939e-07	1.839437e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
824	8.870939e-07	1.839437e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
825	6.968316e-07	-1.337492e-07	4.149164e-08	1.518340e-07	3.952197e-08
826	6.968316e-07	-2.388716e-07	-6.774583e-07	1.518340e-07	6.620086e-08
827	4.787620e-07	-1.043878e-06	3.833080e-07	5.738142e-08	-7.460363e-09
828	6.968316e-07	-2.388716e-07	-6.774583e-07	1.518340e-07	6.620086e-08
829	3.339539e-07	3.292852e-07	-8.912425e-07	5.738142e-08	2.995542e-08
830	1.279653e-06	4.839119e-07	-9.323354e-07	-1.207004e-08	4.587879e-08
831	4.787620e-07	6.503875e-07	-9.739283e-07	1.455103e-07	1.739086e-08
832	1.279653e-06	4.839119e-07	-9.323354e-07	-1.207004e-08	4.587879e-08
833	-1.183377e-06	-3.535391e-07	7.817892e-07	-1.673771e-07	-2.257273e-07
834	-1.874989e-06	-1.849636e-07	8.690106e-07	-1.417289e-07	-2.362394e-07
835	-2.377533e-07	6.503875e-07	-6.841191e-08	-1.417289e-07	7.486050e-08
836	4.328965e-07	6.133245e-07	-8.511639e-07	-1.673771e-07	3.199779e-08
837	8.870939e-07	-1.017300e-06	4.149164e-08	1.022976e-07	-2.332549e-07
838	8.870939e-07	-1.017300e-06	4.149164e-08	1.022976e-07	-2.332549e-07
839	-1.010306e-06	-9.217426e-07	4.431150e-07	-1.417289e-07	5.755661e-08
840	1.230768e-06	-3.408157e-08	-1.099199e-06	1.100349e-08	5.272762e-08
841	-1.586800e-06	-4.737109e-07	1.002594e-06	1.582104e-07	8.259377e-08
842	9.348770e-07	6.036550e-07	-1.266885e-06	1.402156e-07	-6.804538e-08
843	-1.298646e-06	-3.408157e-08	9.135059e-07	1.589250e-07	-8.906991e-08
844	6.968316e-07	6.503875e-07	4.431150e-07	-4.559895e-08	7.486050e-08
845	-8.949121e-07	-1.087516e-06	9.583580e-07	-1.184267e-07	2.675330e-08
846	1.033778e-06	5.633962e-07	-3.491746e-07	-9.563976e-08	6.840977e-08
847	1.033778e-06	5.633962e-07	-3.491746e-07	-9.563976e-08	6.840977e-08
848	5.260663e-07	6.413609e-07	-5.905550e-07	-9.563976e-08	6.084576e-08
849	1.033778e-06	5.633962e-07	-3.491746e-07	-9.563976e-08	6.840977e-08
850	1.033778e-06	5.401252e-07	-3.491746e-07	-1.417289e-07	7.224071e-08
851	-5.452606e-07	-4.140677e-07	8.690106e-07	-7.121540e-08	8.259377e-08
852	-5.452606e-07	-4.140677e-07	8.690106e-07	-7.121540e-08	8.259377e-08
853	2.149786e-07	-4.737109e-07	2.696970e-07	1.455103e-07	7.224071e-08
854	-5.452606e-07	-7.167856e-07	6.559329e-07	-1.673771e-07	7.224071e-08
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856	4.328965e-07	7.358029e-07	-1.182954e-06	1.455103e-07	4.587879e-08
857	-5.452606e-07	-7.167856e-07	6.559329e-07	-1.673771e-07	7.224071e-08
858	1.029131e-07	-1.067556e-06	3.833080e-07	1.455103e-07	4.742314e-08
859	-1.932628e-06	-1.017300e-06	1.002594e-06	-1.184267e-07	5.627579e-09
860	8.403457e-07	2.835149e-07	-2.935321e-07	-9.563976e-08	5.271686e-08
861	6.385285e-07	5.130332e-07	-1.015647e-06	1.567053e-07	7.055881e-08
862	1.328501e-06	1.209332e-06	1.732423e-06	-4.559895e-08	-6.931579e-08
863	4.787620e-07	-4.737109e-07	2.696970e-07	1.567053e-07	3.572843e-08
864	6.385285e-07	5.130332e-07	-1.015647e-06	1.455103e-07	6.084576e-08
865	6.385285e-07	5.130332e-07	-1.015647e-06	1.567053e-07	7.055881e-08

866	6.385285e-07	5.524648e-07	-9.739283e-07	1.589250e-07	7.055881e-08
867	8.403457e-07	-8.427546e-08	-2.935321e-07	5.738142e-08	4.587879e-08
868	7.933367e-07	2.012147e-08	-2.370391e-07	-4.559895e-08	4.605984e-08
869	8.403457e-07	2.835149e-07	-2.935321e-07	-9.563976e-08	5.271686e-08
870	4.328965e-07	5.401252e-07	-1.141060e-06	-4.559895e-08	7.224071e-08
871	3.846396e-07	7.024634e-07	-1.224916e-06	-1.207004e-08	2.902407e-08
872	7.933367e-07	2.835149e-07	-1.141060e-06	-1.673771e-07	8.468339e-08
873	5.804193e-07	-7.605810e-07	-1.811450e-07	-4.559895e-08	3.572843e-08
874	-4.150472e-07	-1.140218e-06	5.584314e-07	-1.417289e-07	3.572843e-08
875	-1.183377e-06	-6.299520e-07	9.583580e-07	-1.207004e-08	-1.016835e-08
876	-2.377533e-07	-9.217426e-07	6.975014e-07	1.518340e-07	-3.649329e-08
877	6.968316e-07	-1.849636e-07	-1.266885e-06	1.100349e-08	3.572843e-08
878	3.846396e-07	7.024634e-07	-1.224916e-06	-1.207004e-08	2.902407e-08
879	-2.377533e-07	4.839119e-07	-4.502292e-07	7.745417e-08	4.248468e-08
880	6.385285e-07	4.529497e-07	-1.099199e-06	1.455103e-07	6.620086e-08
881	-4.813379e-07	2.835149e-07	-4.984645e-07	-1.417289e-07	6.084576e-08
882	4.328965e-07	7.024634e-07	-1.266885e-06	-1.207004e-08	3.952197e-08
883	-1.154526e-08	-9.217426e-07	9.791995e-08	1.340186e-07	-4.832714e-07
884	6.385285e-07	4.529497e-07	-1.099199e-06	1.455103e-07	6.620086e-08
885	-2.377533e-07	4.839119e-07	-4.502292e-07	7.745417e-08	4.248468e-08
886	-2.924668e-07	7.608144e-07	-6.774583e-07	1.455103e-07	8.468339e-08
887	-3.505905e-07	8.440254e-07	-7.669679e-07	1.022976e-07	8.442682e-08
888	-1.356271e-06	7.466536e-08	6.098883e-07	1.589250e-07	3.199779e-08
889	8.403457e-07	3.292852e-07	-1.266885e-06	1.455103e-07	4.605984e-08
890	-1.356271e-06	1.015940e-06	3.833080e-07	-8.955677e-08	-5.227412e-08
891	6.385285e-07	-8.039870e-07	-1.811450e-07	-4.559895e-08	4.587879e-08
892	6.385285e-07	6.036550e-07	-1.141060e-06	5.738142e-08	6.084576e-08
893	-1.010306e-06	-2.950422e-07	-2.370391e-07	-7.121540e-08	8.039333e-08
894	6.385285e-07	6.036550e-07	-1.141060e-06	5.738142e-08	6.084576e-08
895	6.385285e-07	5.401252e-07	-1.141060e-06	1.100349e-08	7.224071e-08
896	6.968316e-07	4.174006e-07	-1.224916e-06	5.738142e-08	7.224071e-08
897	4.505265e-08	-9.217426e-07	6.559329e-07	1.022976e-07	6.084576e-08
898	6.968316e-07	4.174006e-07	-1.224916e-06	5.738142e-08	7.224071e-08
899	4.505265e-08	-9.217426e-07	6.559329e-07	1.022976e-07	6.084576e-08
900	4.505265e-08	1.226926e-06	-1.182954e-06	1.151666e-07	7.909160e-08
901	-2.924668e-07	-9.217426e-07	5.023219e-07	1.589250e-07	1.167609e-08
902	5.260663e-07	5.524648e-07	-8.511639e-07	1.022976e-07	7.224071e-08
903	5.260663e-07	5.524648e-07	-8.511639e-07	1.022976e-07	7.224071e-08
904	8.403457e-07	4.174006e-07	-1.015647e-06	-5.036871e-08	2.266651e-08
905	8.403457e-07	4.174006e-07	-1.015647e-06	-5.036871e-08	2.266651e-08
906	-4.813379e-07	3.758986e-07	-3.997362e-07	1.402156e-07	6.840977e-08
907	6.385285e-07	1.839437e-07	-1.438321e-08	1.589250e-07	7.909160e-08
908	1.181784e-06	2.835149e-07	-1.266885e-06	1.100349e-08	6.261019e-08
909	5.260663e-07	7.466536e-08	-7.223371e-07	1.022976e-07	6.084576e-08
910	5.804193e-07	-9.388482e-07	6.559329e-07	-2.553407e-07	2.008402e-08

911	-5.452606e-07	-6.299520e-07	1.045738e-06	9.001577e-08	-1.573988e-07
912	-4.150472e-07	-1.017300e-06	9.583580e-07	-2.491482e-07	-6.278841e-08
913	-9.525852e-07	-2.388716e-07	8.690106e-07	1.461542e-07	2.995542e-08
914	-6.061282e-07	-5.724110e-07	9.583580e-07	3.939554e-08	4.248468e-08
915	5.804193e-07	-9.388482e-07	6.559329e-07	-2.553407e-07	2.008402e-08
916	-1.237739e-07	-9.035114e-07	6.975014e-07	1.100349e-08	6.261019e-08
917	1.572472e-06	7.024634e-07	-4.502292e-07	-1.673771e-07	-3.098237e-07
918	8.403457e-07	-5.225867e-07	2.136912e-07	-2.358489e-07	7.909160e-08
919	-1.154526e-08	-7.167856e-07	2.696970e-07	1.100349e-08	6.840977e-08
920	-1.154526e-08	5.130332e-07	-7.669679e-07	-9.563976e-08	4.605984e-08
921	-7.218657e-07	-5.225867e-07	5.584314e-07	5.738142e-08	5.780701e-08
922	-1.154526e-08	-7.167856e-07	2.696970e-07	1.100349e-08	6.840977e-08
923	-1.154526e-08	5.130332e-07	-7.669679e-07	-9.563976e-08	4.605984e-08
924	8.403457e-07	-5.225867e-07	2.136912e-07	-2.358489e-07	7.909160e-08
925	-1.237739e-07	-1.849636e-07	-1.438321e-08	5.738142e-08	8.681489e-09
926	-1.237739e-07	-1.128754e-06	5.023219e-07	-7.121540e-08	2.902407e-08
927	-6.061282e-07	-1.105254e-06	3.248752e-07	5.738142e-08	2.486890e-08
928	-1.154526e-08	6.228241e-07	-4.502292e-07	1.100349e-08	4.765355e-08
929	-1.237739e-07	-1.849636e-07	-1.438321e-08	5.738142e-08	8.681489e-09
930	-1.807172e-07	-8.453453e-07	6.098883e-07	1.214781e-07	2.823207e-08
931	9.348770e-07	4.839119e-07	-1.224916e-06	-7.121540e-08	7.224071e-08
932	5.260663e-07	4.839119e-07	-1.224916e-06	-4.559895e-08	5.271686e-08
933	4.328965e-07	-5.572288e-07	9.791995e-08	-7.121540e-08	6.084576e-08
934	5.260663e-07	4.839119e-07	-1.224916e-06	-4.559895e-08	5.271686e-08
935	9.348770e-07	4.839119e-07	-1.224916e-06	-7.121540e-08	7.224071e-08
936	-2.377533e-07	-9.556801e-07	6.098883e-07	5.738142e-08	2.266651e-08
937	-2.377533e-07	-9.556801e-07	6.098883e-07	5.738142e-08	2.266651e-08
938	-2.105545e-06	5.401252e-07	1.129605e-06	-1.950685e-07	4.587879e-08
939	6.385285e-07	-6.299520e-07	6.098883e-07	1.518340e-07	3.952197e-08
940	1.132640e-06	-2.388716e-07	-5.452466e-07	-1.417289e-07	4.742314e-08
941	-7.218657e-07	-8.453453e-07	1.211874e-06	1.100349e-08	5.271686e-08
942	-8.949121e-07	-1.043878e-06	1.087158e-06	1.387989e-08	8.039333e-08
943	-1.010306e-06	-4.140677e-07	6.975014e-07	1.589250e-07	5.272762e-08
944	-8.372459e-07	-3.408157e-08	3.833080e-07	5.738142e-08	4.248468e-08
945	4.505265e-08	-9.556801e-07	1.087158e-06	9.001577e-08	6.328653e-08
946	-1.068026e-06	-3.535391e-07	7.817892e-07	-4.559895e-08	4.587879e-08
947	-1.068026e-06	-3.535391e-07	1.444324e-06	7.116378e-08	5.272762e-08
948	4.505265e-08	-1.017300e-06	1.045738e-06	-1.207004e-08	4.765355e-08
949	-2.924668e-07	-1.243401e-06	9.135059e-07	-9.563976e-08	5.755661e-08
950	-2.924668e-07	-1.243401e-06	9.135059e-07	-9.563976e-08	5.755661e-08
951	-2.924668e-07	-1.243401e-06	9.135059e-07	-9.563976e-08	5.755661e-08
952	4.505265e-08	-1.017300e-06	1.045738e-06	-1.207004e-08	4.765355e-08
953	1.029131e-07	-9.217426e-07	6.975014e-07	1.100349e-08	1.739086e-08
954	-1.068026e-06	-8.039870e-07	1.045738e-06	-1.207004e-08	-7.178486e-10
955	4.328965e-07	-4.140677e-07	6.975014e-07	1.567053e-07	8.039333e-08

956	-6.712142e-08	-1.140218e-06	1.211874e-06	-7.121540e-08	6.328653e-08
957	-3.505905e-07	-7.167856e-07	1.211874e-06	-1.207004e-08	-4.701447e-08
958	-6.641668e-07	-6.732435e-07	1.211874e-06	-4.559895e-08	7.486050e-08
959	1.033778e-06	3.292852e-07	-7.669679e-07	5.738142e-08	-9.432598e-08
960	2.149786e-07	4.174006e-07	-1.057370e-06	-4.559895e-08	6.835400e-08
961	-6.712142e-08	-1.849636e-07	-1.438321e-08	-7.121540e-08	1.739086e-08
962	6.968316e-07	2.835149e-07	-6.774583e-07	-1.417289e-07	6.084576e-08
963	9.348770e-07	3.292852e-07	-1.182954e-06	-1.207004e-08	-6.804538e-08
964	-2.377533e-07	-1.043878e-06	6.559329e-07	-4.559895e-08	1.094567e-08
965	-6.712142e-08	-1.849636e-07	-1.438321e-08	-7.121540e-08	1.739086e-08
966	4.505265e-08	-8.039870e-07	6.975014e-07	1.022976e-07	2.995542e-08
967	-3.505905e-07	-6.299520e-07	7.388933e-07	1.022976e-07	-4.893533e-09
968	-6.712142e-08	6.036550e-07	-3.997362e-07	-1.207004e-08	2.679843e-08
969	-3.505905e-07	-5.572288e-07	8.254983e-07	1.022976e-07	3.952197e-08
970	8.870939e-07	2.835149e-07	-8.912425e-07	1.461542e-07	6.261019e-08
971	-1.183377e-06	-1.067556e-06	1.045738e-06	-7.121540e-08	3.199779e-08
972	-1.183377e-06	-1.067556e-06	1.045738e-06	-7.121540e-08	3.199779e-08
973	-1.010306e-06	-6.299520e-07	1.129605e-06	1.022976e-07	-1.016835e-08
974	-6.712142e-08	-8.039870e-07	8.690106e-07	-1.184267e-07	6.261019e-08
975	-2.377533e-07	-8.453453e-07	7.388933e-07	-4.392685e-08	4.742314e-08
976	6.385285e-07	-5.225867e-07	1.556317e-07	-1.207004e-08	8.442682e-08
977	6.385285e-07	-5.225867e-07	1.556317e-07	-1.207004e-08	8.442682e-08
978	-1.154526e-08	4.174006e-07	9.791995e-08	1.589250e-07	-3.649329e-08
979	7.446521e-07	-5.572288e-07	2.696970e-07	1.025832e-07	2.486890e-08
980	-2.220824e-06	-2.950422e-07	1.087158e-06	-1.950685e-07	5.755661e-08
981	-4.150472e-07	-3.408157e-08	1.556317e-07	-7.121540e-08	2.995542e-08
982	-6.641668e-07	9.463687e-07	-6.841191e-08	-7.121540e-08	6.261019e-08
983	5.804193e-07	7.466536e-08	2.696970e-07	-1.207004e-08	4.317297e-08
984	-4.150472e-07	-3.408157e-08	1.556317e-07	-7.121540e-08	2.995542e-08
985	-2.220824e-06	-2.950422e-07	1.087158e-06	-1.950685e-07	5.755661e-08
986	5.260663e-07	3.758986e-07	-1.266885e-06	-4.559895e-08	2.902407e-08
987	-8.372459e-07	-8.039870e-07	6.559329e-07	-1.950685e-07	3.199779e-08
988	6.968316e-07	-7.167856e-07	1.556317e-07	-1.417289e-07	7.224071e-08
989	3.846396e-07	-5.898254e-07	-7.669679e-07	-1.184267e-07	2.679843e-08
990	-7.795642e-07	-9.718809e-07	6.975014e-07	-1.673771e-07	4.742314e-08
991	3.846396e-07	-5.898254e-07	-7.669679e-07	-1.184267e-07	2.679843e-08
992	6.968316e-07	-8.039870e-07	4.149164e-08	-4.559895e-08	8.039333e-08
993	9.841694e-07	-5.572288e-07	-8.511639e-07	-4.559895e-08	6.620086e-08
994	6.968316e-07	-8.039870e-07	4.149164e-08	-4.559895e-08	8.039333e-08
995	-9.525852e-07	-7.605810e-07	9.135059e-07	1.455103e-07	5.272762e-08
996	3.846396e-07	4.529497e-07	-1.015647e-06	-4.559895e-08	6.261019e-08
997	1.426101e-06	6.036550e-07	-1.266885e-06	1.100349e-08	8.066278e-08
998	1.426101e-06	6.036550e-07	-1.266885e-06	1.100349e-08	8.066278e-08
999	-2.924668e-07	9.119893e-07	3.833080e-07	-1.950685e-07	-7.460363e-09
1000	1.033778e-06	6.590682e-07	-1.266885e-06	-1.300502e-07	8.681489e-09

## Midterm\_WineQuality

1001	4.787620e-07	-4.140677e-07	1.556317e-07	1.100349e-08	2.675330e-08
1002	-8.949121e-07	-7.605810e-07	6.098883e-07	-1.673771e-07	1.739086e-08
1003	-4.150472e-07	-9.875367e-07	3.248752e-07	-2.885981e-08	2.823207e-08
1004	8.403457e-07	-7.167856e-07	2.696970e-07	-9.563976e-08	3.572843e-08
1005	1.029131e-07	-4.140677e-07	9.791995e-08	-1.417289e-07	6.840977e-08
1006	8.403457e-07	-7.167856e-07	2.696970e-07	-9.563976e-08	3.572843e-08
1007	-4.150472e-07	-9.875367e-07	3.248752e-07	-2.885981e-08	2.823207e-08
1008	-4.150472e-07	-9.556801e-07	3.833080e-07	-4.559895e-08	2.902407e-08
1009	-2.924668e-07	-7.605810e-07	6.975014e-07	1.025832e-07	-4.175390e-08
1010	-7.218657e-07	-3.408157e-08	5.023219e-07	1.518340e-07	-7.330166e-08
1011	-2.924668e-07	-1.017300e-06	9.135059e-07	-1.184267e-07	3.572843e-08
1012	-2.924668e-07	-8.846745e-07	2.136912e-07	-4.559895e-08	7.486050e-08
1013	3.846396e-07	1.200535e-06	-6.338308e-07	-1.207004e-08	3.853350e-10
1014	4.787620e-07	6.939921e-07	-1.266885e-06	-1.417289e-07	5.272762e-08
1015	2.149786e-07	3.758986e-07	-5.905550e-07	-4.559895e-08	-9.432598e-08
1016	-1.241017e-06	-5.898254e-07	9.583580e-07	1.100349e-08	5.755661e-08
1017	-2.924668e-07	-6.299520e-07	6.975014e-07	1.100349e-08	3.952197e-08
1018	2.149786e-07	-1.174613e-06	5.584314e-07	-3.455287e-07	-1.104803e-08
1019	2.149786e-07	-1.174613e-06	5.584314e-07	-3.455287e-07	-1.104803e-08
1020	7.446521e-07	-3.408157e-08	-6.774583e-07	-9.563976e-08	6.084576e-08
1021	-1.702074e-06	-7.167856e-07	1.732423e-06	1.022976e-07	-1.100942e-07
1022	-1.702074e-06	-7.167856e-07	1.732423e-06	1.022976e-07	-1.100942e-07
1023	7.446521e-07	2.012147e-08	-8.912425e-07	-1.207004e-08	2.675330e-08
1024	1.029131e-07	-8.846745e-07	7.817892e-07	5.738142e-08	2.151427e-08
1025	3.846396e-07	3.758986e-07	-1.224916e-06	-9.563976e-08	7.486050e-08
1026	-1.237739e-07	8.948957e-07	-1.266885e-06	1.518340e-07	3.729614e-08
1027	2.746319e-07	-9.217426e-07	2.696970e-07	-7.121540e-08	3.199779e-08
1028	1.033778e-06	8.355905e-07	-1.266885e-06	1.100349e-08	2.995542e-08
1029	6.385285e-07	-8.039870e-07	-3.491746e-07	1.455103e-07	5.755661e-08
1030	3.846396e-07	3.758986e-07	-1.224916e-06	-9.563976e-08	7.486050e-08
1031	6.968316e-07	4.174006e-07	-1.266885e-06	-1.207004e-08	5.780701e-08
1032	5.804193e-07	2.354558e-07	-1.224916e-06	-9.563976e-08	4.765355e-08
1033	1.587053e-07	8.778924e-07	-1.266885e-06	7.116378e-08	3.729614e-08
1034	4.787620e-07	3.292852e-07	-9.323354e-07	1.589250e-07	6.835400e-08
1035	-2.924668e-07	7.524913e-07	-4.984645e-07	1.455103e-07	7.055881e-08
1036	-1.010306e-06	-6.732435e-07	3.833080e-07	1.022976e-07	8.259377e-08
1037	4.328965e-07	-9.217426e-07	3.833080e-07	1.455103e-07	8.039333e-08
1038	5.804193e-07	1.033461e-06	-8.511639e-07	-9.563976e-08	5.271686e-08
1039	-1.807172e-07	-5.225867e-07	7.388933e-07	-6.310747e-08	6.084576e-08
1040	-2.924668e-07	-3.408157e-08	-3.491746e-07	1.100349e-08	7.486050e-08
1041	5.260663e-07	1.130158e-06	-1.266885e-06	1.100349e-08	7.486050e-08
1042	7.933367e-07	-8.427546e-08	-4.502292e-07	-1.184267e-07	6.261019e-08
1043	-2.924668e-07	-3.408157e-08	-3.491746e-07	1.100349e-08	7.486050e-08
1044	-6.641668e-07	-5.898254e-07	7.388933e-07	-2.424985e-07	4.146663e-08
1045	1.033778e-06	-5.898254e-07	3.248752e-07	1.214781e-07	-2.681306e-08

1046	7.933367e-07	-3.535391e-07	-1.266885e-06	-1.950685e-07	4.317297e-08
1047	4.328965e-07	8.104161e-07	-1.266885e-06	-1.184267e-07	6.620086e-08
1048	6.968316e-07	-4.140677e-07	-5.452466e-07	-9.563976e-08	8.039333e-08
1049	-5.452606e-07	-8.427546e-08	5.023219e-07	-1.184267e-07	6.840977e-08
1050	-5.452606e-07	-3.408157e-08	5.023219e-07	-9.563976e-08	7.909160e-08
1051	6.968316e-07	-4.140677e-07	-5.452466e-07	-9.563976e-08	8.039333e-08
1052	-6.712142e-08	-2.388716e-07	1.481563e-06	-1.950685e-07	-1.639580e-06
1053	1.426101e-06	4.686744e-07	-1.057370e-06	1.022976e-07	4.742314e-08
1054	4.505265e-08	-8.453453e-07	7.817892e-07	5.738142e-08	4.317297e-08
1055	1.029131e-07	5.633962e-07	-1.438321e-08	-4.559895e-08	3.729614e-08
1056	1.029131e-07	5.633962e-07	-1.438321e-08	-4.559895e-08	3.729614e-08
1057	-2.924668e-07	-1.337492e-07	1.251645e-06	7.745417e-08	5.665735e-09
1058	4.328965e-07	-4.737109e-07	-1.237680e-07	8.373160e-08	-1.016835e-08
1059	-8.949121e-07	1.288176e-07	1.406807e-06	1.022976e-07	4.765355e-08
1060	-2.924668e-07	-1.337492e-07	1.251645e-06	7.745417e-08	5.665735e-09
1061	-1.874989e-06	-1.117289e-06	1.406807e-06	-9.563976e-08	5.271686e-08
1062	-4.150472e-07	-5.572288e-07	1.129605e-06	-9.563976e-08	4.587879e-08
1063	2.149786e-07	-6.299520e-07	8.690106e-07	-7.121540e-08	2.151427e-08
1064	-1.068026e-06	-9.875367e-07	1.697719e-06	1.022976e-07	5.755661e-08
1065	1.029131e-07	7.441292e-07	-8.912425e-07	-4.559895e-08	3.572843e-08
1066	3.846396e-07	4.839119e-07	-4.984645e-07	1.022976e-07	8.442682e-08
1067	9.348770e-07	7.466536e-08	-9.323354e-07	1.022976e-07	4.317297e-08
1068	-1.586800e-06	-9.217426e-07	1.251645e-06	1.100349e-08	2.266651e-08
1069	-1.586800e-06	-9.217426e-07	1.251645e-06	1.100349e-08	2.266651e-08
1070	2.149786e-07	5.130332e-07	4.431150e-07	1.518340e-07	8.468339e-08
1071	-5.452606e-07	-8.453453e-07	9.135059e-07	-1.673771e-07	1.458012e-08
1072	4.787620e-07	7.937749e-07	-3.997362e-07	-1.893014e-07	2.151427e-08
1073	6.385285e-07	-7.605810e-07	-6.841191e-08	-9.563976e-08	8.442682e-08
1074	2.149786e-07	5.130332e-07	3.248752e-07	1.567053e-07	7.486050e-08
1075	4.787620e-07	7.937749e-07	-3.997362e-07	-1.893014e-07	2.151427e-08
1076	-4.150472e-07	-1.087516e-06	3.833080e-07	-4.559895e-08	4.587879e-08
1077	-8.949121e-07	-8.846745e-07	1.368925e-06	-4.559895e-08	4.742314e-08
1078	-1.237739e-07	-6.732435e-07	1.697719e-06	-7.625749e-08	7.224071e-08
1079	-1.237739e-07	-6.732435e-07	1.697719e-06	-7.625749e-08	7.224071e-08
1080	2.746319e-07	-9.556801e-07	1.795279e-06	-2.026007e-07	-7.460363e-09
1081	-1.125716e-06	-1.043878e-06	1.368925e-06	-1.950685e-07	-2.074124e-08
1082	2.746319e-07	-9.556801e-07	1.795279e-06	-2.026007e-07	-7.460363e-09
1083	6.385285e-07	-6.299520e-07	1.556317e-07	-9.563976e-08	4.742314e-08
1084	-1.807172e-07	-4.737109e-07	9.135059e-07	1.022976e-07	4.605984e-08
1085	6.385285e-07	-6.299520e-07	1.556317e-07	-9.563976e-08	4.742314e-08
1086	8.403457e-07	-1.337492e-07	-9.323354e-07	-9.563976e-08	5.271686e-08
1087	-6.712142e-08	-8.039870e-07	6.975014e-07	3.302391e-08	8.681489e-09
1088	2.746319e-07	-1.163148e-06	7.817892e-07	-1.417289e-07	1.458012e-08
1089	-1.874989e-06	-5.225867e-07	1.291156e-06	-1.673771e-07	3.729614e-08
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1091	-9.525852e-07	-1.067556e-06	1.291156e-06	-7.121540e-08	8.442682e-08
1092	2.746319e-07	-8.039870e-07	7.817892e-07	-4.559895e-08	8.468339e-08
1093	7.446521e-07	1.839437e-07	-8.912425e-07	-4.559895e-08	6.840977e-08
1094	-4.813379e-07	-9.217426e-07	5.023219e-07	1.100349e-08	6.261019e-08
1095	9.348770e-07	7.191894e-07	-8.912425e-07	-1.812470e-08	-7.855775e-08
1096	-6.061282e-07	-5.572288e-07	1.002594e-06	1.455103e-07	8.066278e-08
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1098	-1.237739e-07	7.466536e-08	6.098883e-07	-1.673771e-07	3.206437e-08
1099	2.149786e-07	-9.217426e-07	9.135059e-07	-1.207004e-08	-5.989025e-07
1100	-1.237739e-07	7.466536e-08	6.098883e-07	-1.673771e-07	3.206437e-08
1101	-1.154526e-08	-8.039870e-07	7.817892e-07	-1.207004e-08	4.605984e-08
1102	5.260663e-07	-8.427546e-08	-1.438321e-08	-1.207004e-08	4.587879e-08
1103	1.181784e-06	-1.337492e-07	-8.912425e-07	-1.184267e-07	6.084576e-08
1104	5.260663e-07	-8.427546e-08	-1.438321e-08	-1.207004e-08	4.587879e-08
1105	2.149786e-07	-1.337492e-07	3.833080e-07	1.100349e-08	4.742314e-08
1106	1.083292e-06	3.292852e-07	4.149164e-08	-1.207004e-08	-1.469264e-08
1107	1.029131e-07	-1.117289e-06	7.817892e-07	-7.121540e-08	4.146663e-08
1108	-4.150472e-07	-9.556801e-07	7.388933e-07	-4.559895e-08	3.952197e-08
1109	1.587053e-07	8.104161e-07	-8.511639e-07	1.214781e-07	6.328653e-08
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1112	1.523681e-06	-4.737109e-07	-1.438321e-08	-4.559895e-08	5.272762e-08
1113	2.746319e-07	-8.453453e-07	7.388933e-07	-1.673771e-07	1.167609e-08
1114	-2.924668e-07	-1.105254e-06	6.559329e-07	-1.417289e-07	5.271686e-08
1115	1.718842e-06	-5.572288e-07	1.129605e-06	5.847877e-08	-2.681306e-08
1116	7.446521e-07	6.590682e-07	-9.739283e-07	1.455103e-07	5.780701e-08
1117	7.446521e-07	6.590682e-07	-9.739283e-07	1.455103e-07	5.780701e-08
1118	7.446521e-07	6.590682e-07	-9.739283e-07	1.455103e-07	5.780701e-08
1119	6.968316e-07	-5.898254e-07	-7.669679e-07	-1.207004e-08	2.995542e-08
1120	1.426101e-06	6.036550e-07	-1.266885e-06	1.455103e-07	3.199779e-08
1121	2.746319e-07	1.839437e-07	3.833080e-07	1.455103e-07	6.620086e-08
1122	9.348770e-07	-3.408157e-08	-1.266885e-06	-9.563976e-08	2.675330e-08
1123	1.083292e-06	-1.849636e-07	-1.266885e-06	-1.950685e-07	8.681489e-09
1124	-1.356271e-06	-5.572288e-07	5.584314e-07	-7.121540e-08	6.840977e-08
1125	9.841694e-07	3.758986e-07	-1.266885e-06	1.100349e-08	3.206437e-08
1126	-2.377533e-07	-1.105254e-06	4.431150e-07	-1.184267e-07	8.681489e-09
1127	1.328501e-06	-9.875367e-07	-6.841191e-08	-1.184267e-07	2.823207e-08
1128	1.083292e-06	7.772737e-07	-1.266885e-06	1.461542e-07	4.605984e-08
1129	-9.525852e-07	-4.140677e-07	3.248752e-07	1.567053e-07	3.729614e-08
1130	-1.241017e-06	-4.140677e-07	4.431150e-07	1.214781e-07	5.272762e-08
1131	-4.150472e-07	4.529497e-07	-1.266885e-06	-7.121540e-08	1.739086e-08
1132	1.279653e-06	-1.163148e-06	-3.491746e-07	-1.184267e-07	-3.288488e-08
1133	5.260663e-07	-7.167856e-07	3.833080e-07	-9.563976e-08	5.755661e-08
1134	6.385285e-07	-1.337492e-07	-9.739283e-07	-1.812470e-08	6.835400e-08
1135	-6.712142e-08	-1.017300e-06	4.431150e-07	-1.184267e-07	2.486890e-08

1136	2.149786e-07	-1.087516e-06	8.254983e-07	-1.184267e-07	3.572843e-08
1137	-1.183377e-06	7.466536e-08	9.135059e-07	-4.559895e-08	7.224071e-08
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1140	1.029131e-07	2.012147e-08	-1.811450e-07	-4.559895e-08	6.261019e-08
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1143	7.933367e-07	-2.950422e-07	-8.098654e-07	1.022976e-07	-4.502851e-08
1144	7.446521e-07	-1.128754e-06	1.556317e-07	-9.563976e-08	2.995542e-08
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1147	3.339539e-07	-3.408157e-08	-7.669679e-07	-9.563976e-08	-3.991758e-07
1148	-9.525852e-07	-5.225867e-07	9.135059e-07	-6.310747e-08	4.587879e-08
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1151	1.029131e-07	-8.453453e-07	2.696970e-07	1.518340e-07	3.572843e-08
1152	1.181784e-06	3.758986e-07	-2.370391e-07	1.455103e-07	-3.895669e-08
1153	4.505265e-08	4.529497e-07	-1.237680e-07	1.100349e-08	-8.381383e-08
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1155	9.348770e-07	3.758986e-07	-1.266885e-06	1.100349e-08	1.094567e-08
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1163	-6.712142e-08	-8.846745e-07	7.817892e-07	5.738142e-08	5.755661e-08
1164	-3.505905e-07	8.187823e-07	-1.811450e-07	-1.184267e-07	6.084576e-08
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1166	-6.712142e-08	-3.535391e-07	1.129605e-06	-7.121540e-08	-1.403063e-06
1167	-8.949121e-07	1.839437e-07	-6.841191e-08	-4.559895e-08	-4.701447e-08
1168	1.029131e-07	-8.453453e-07	6.559329e-07	1.455103e-07	5.271686e-08
1169	9.841694e-07	-8.039870e-07	-1.438321e-08	1.518340e-07	3.572843e-08
1170	4.328965e-07	-3.408157e-08	9.791995e-08	5.738142e-08	8.468339e-08
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1172	6.968316e-07	4.174006e-07	-1.266885e-06	1.100349e-08	6.084576e-08
1173	-7.795642e-07	-4.737109e-07	9.583580e-07	-1.207004e-08	5.271686e-08
1174	4.328965e-07	-7.167856e-07	2.136912e-07	-1.184267e-07	6.261019e-08
1175	4.328965e-07	-7.167856e-07	2.136912e-07	-1.184267e-07	6.261019e-08
1176	9.841694e-07	4.839119e-07	-1.266885e-06	1.100349e-08	3.729614e-08
1177	9.841694e-07	9.810545e-07	-1.141060e-06	-2.458274e-08	6.261019e-08
1178	6.968316e-07	6.036550e-07	-1.266885e-06	1.022976e-07	-7.178486e-10
1179	1.426101e-06	1.042197e-06	-1.266885e-06	-1.207004e-08	-5.717215e-08
1180	1.029131e-07	-7.605810e-07	3.248752e-07	1.022976e-07	6.620086e-08

1181	1.029131e-07	-7.605810e-07	3.248752e-07	1.022976e-07	6.620086e-08
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1183	-1.068026e-06	-5.572288e-07	6.975014e-07	1.455103e-07	3.952197e-08
1184	8.403457e-07	6.036550e-07	-9.739283e-07	-1.417289e-07	4.317297e-08
1185	8.870939e-07	5.633962e-07	-2.370391e-07	-1.207004e-08	7.224071e-08
1186	7.446521e-07	-4.140677e-07	1.556317e-07	-4.559895e-08	8.259377e-08
1187	9.348770e-07	8.440254e-07	-1.141060e-06	-1.693525e-07	6.261019e-08
1188	7.446521e-07	-4.140677e-07	1.556317e-07	-4.559895e-08	8.259377e-08
1189	8.870939e-07	5.633962e-07	-2.370391e-07	-1.207004e-08	7.224071e-08
1190	-2.377533e-07	1.112564e-06	-1.057370e-06	-9.563976e-08	5.755661e-08
1191	-4.150472e-07	-5.572288e-07	1.406807e-06	3.939554e-08	7.224071e-08
1192	9.841694e-07	9.897283e-07	-1.266885e-06	5.738142e-08	-3.361037e-07
1193	6.385285e-07	-1.087516e-06	5.584314e-07	1.455103e-07	2.823207e-08
1194	1.033778e-06	9.897283e-07	-1.266885e-06	5.738142e-08	-3.361037e-07
1195	7.446521e-07	7.524913e-07	-7.669679e-07	-9.563976e-08	-6.278841e-08
1196	1.132640e-06	-4.140677e-07	-2.935321e-07	-9.563976e-08	6.084576e-08
1197	2.746319e-07	3.758986e-07	-2.370391e-07	5.738142e-08	6.620086e-08
1198	3.846396e-07	3.292852e-07	-3.491746e-07	-1.673771e-07	4.146663e-08
1199	3.846396e-07	-1.067556e-06	-6.841191e-08	-4.559895e-08	-7.178486e-10
1200	2.746319e-07	3.758986e-07	-2.370391e-07	5.738142e-08	6.620086e-08
1201	3.846396e-07	3.292852e-07	-3.491746e-07	-1.673771e-07	4.146663e-08
1202	2.746319e-07	-8.039870e-07	5.023219e-07	-7.121540e-08	2.995542e-08
1203	-1.237739e-07	-4.737109e-07	6.559329e-07	-9.563976e-08	3.952197e-08
1204	-8.949121e-07	7.441292e-07	-4.502292e-07	-3.747385e-08	-4.701447e-08
1205	6.385285e-07	-7.167856e-07	9.583580e-07	-1.207004e-08	5.271686e-08
1206	6.385285e-07	-7.167856e-07	9.583580e-07	-1.207004e-08	5.271686e-08
1207	6.385285e-07	-7.167856e-07	9.583580e-07	-1.207004e-08	5.271686e-08
1208	-8.949121e-07	7.108504e-07	1.330290e-06	-1.184267e-07	-1.784230e-07
1209	6.385285e-07	-7.167856e-07	9.583580e-07	-1.207004e-08	5.271686e-08
1210	1.132640e-06	-5.898254e-07	8.254983e-07	-4.559895e-08	4.587879e-08
1211	8.403457e-07	5.838653e-07	-1.182954e-06	-1.207004e-08	6.084576e-08
1212	9.348770e-07	-3.535391e-07	-6.338308e-07	-1.207004e-08	6.620086e-08
1213	8.403457e-07	5.838653e-07	-1.182954e-06	-1.207004e-08	6.084576e-08
1214	-7.218657e-07	-6.299520e-07	7.817892e-07	-7.121540e-08	4.587879e-08
1215	-1.068026e-06	-8.453453e-07	9.583580e-07	-7.121540e-08	6.840977e-08
1216	-2.377533e-07	-1.043878e-06	9.583580e-07	-1.207004e-08	3.729614e-08
1217	2.746319e-07	3.292852e-07	2.136912e-07	-4.559895e-08	6.261019e-08
1218	1.029131e-07	-8.039870e-07	5.584314e-07	-7.121540e-08	1.458012e-08
1219	1.029131e-07	-5.572288e-07	2.136912e-07	-7.121540e-08	8.039333e-08
1220	-3.505905e-07	-5.898254e-07	6.975014e-07	-2.252781e-07	-3.895669e-08
1221	-1.471529e-06	-8.846745e-07	1.211874e-06	-9.563976e-08	-1.573988e-07
1222	-1.471529e-06	-8.846745e-07	1.211874e-06	-9.563976e-08	-1.573988e-07
1223	1.587053e-07	1.288176e-07	-2.935321e-07	1.100349e-08	6.084576e-08
1224	-1.241017e-06	-7.167856e-07	1.002594e-06	1.100349e-08	5.271686e-08
1225	-2.451382e-06	-5.898254e-07	1.087158e-06	1.455103e-07	7.224071e-08

1226	-4.813379e-07	-2.388716e-07	-2.370391e-07	1.589250e-07	5.780701e-08
1227	4.787620e-07	3.758986e-07	-1.141060e-06	7.116378e-08	7.224071e-08
1228	-3.505905e-07	3.758986e-07	-1.237680e-07	-4.559895e-08	-1.016835e-08
1229	1.670052e-06	-4.737109e-07	-1.266885e-06	-9.563976e-08	-3.895669e-08
1230	4.328965e-07	-4.140677e-07	9.791995e-08	-1.207004e-08	5.755661e-08
1231	3.846396e-07	-1.174613e-06	3.833080e-07	1.567053e-07	3.199779e-08
1232	3.339539e-07	8.694048e-07	-1.224916e-06	1.589250e-07	5.271686e-08
1233	4.328965e-07	-4.140677e-07	9.791995e-08	-1.207004e-08	5.755661e-08
1234	-1.068026e-06	-1.117289e-06	5.584314e-07	1.100349e-08	1.458012e-08
1235	6.968316e-07	7.608144e-07	-1.224916e-06	1.100349e-08	2.008402e-08
1236	1.230768e-06	-8.453453e-07	2.696970e-07	-5.084842e-07	5.627579e-09
1237	3.339539e-07	2.354558e-07	-1.266885e-06	-1.184267e-07	4.317297e-08
1238	6.968316e-07	7.608144e-07	-1.224916e-06	1.100349e-08	2.008402e-08
1239	1.587053e-07	7.275065e-07	-1.266885e-06	1.455103e-07	6.840977e-08
1240	9.841694e-07	6.228241e-07	-1.266885e-06	5.847877e-08	1.458012e-08
1241	4.787620e-07	4.839119e-07	-3.997362e-07	-1.184267e-07	6.620086e-08
1242	-8.372459e-07	-6.732435e-07	6.559329e-07	1.455103e-07	6.261019e-08
1243	-3.505905e-07	-5.572288e-07	7.388933e-07	-4.559895e-08	1.739086e-08
1244	4.505265e-08	2.835149e-07	-2.935321e-07	1.022976e-07	8.039333e-08
1245	1.279653e-06	-9.875367e-07	-1.237680e-07	-5.417324e-07	3.572843e-08
1246	5.260663e-07	2.354558e-07	-4.502292e-07	-9.563976e-08	8.039333e-08
1247	5.260663e-07	7.441292e-07	-9.739283e-07	-1.184267e-07	8.468339e-08
1248	5.260663e-07	2.354558e-07	-4.502292e-07	-9.563976e-08	8.039333e-08
1249	7.933367e-07	-5.225867e-07	3.248752e-07	1.100349e-08	6.840977e-08
1250	6.968316e-07	4.529497e-07	-1.224916e-06	5.738142e-08	6.261019e-08
1251	6.968316e-07	4.529497e-07	-1.224916e-06	5.738142e-08	6.261019e-08
1252	4.787620e-07	3.758986e-07	-6.774583e-07	1.100349e-08	7.055881e-08
1253	6.968316e-07	7.108504e-07	-1.266885e-06	-9.563976e-08	-1.100942e-07
1254	2.746319e-07	6.036550e-07	-1.266885e-06	-1.950685e-07	3.206437e-08
1255	3.339539e-07	6.766699e-07	-1.015647e-06	-7.121540e-08	6.261019e-08
1256	1.181784e-06	5.633962e-07	-1.182954e-06	1.022976e-07	4.146663e-08
1257	4.787620e-07	4.174006e-07	-2.935321e-07	-9.563976e-08	8.039333e-08
1258	7.446521e-07	3.758986e-07	4.149164e-08	2.664563e-08	8.259377e-08
1259	8.403457e-07	5.633962e-07	-1.266885e-06	1.567053e-07	-1.100942e-07
1260	8.403457e-07	5.633962e-07	-1.266885e-06	1.567053e-07	-1.100942e-07
1261	-1.237739e-07	5.524648e-07	1.795279e-06	-9.563976e-08	-1.581765e-06
1262	1.083292e-06	1.226926e-06	-1.266885e-06	-4.559895e-08	8.442682e-08
1263	-8.372459e-07	-2.950422e-07	6.098883e-07	1.455103e-07	6.840977e-08
1264	1.029131e-07	8.104161e-07	-1.266885e-06	1.100349e-08	6.835400e-08
1265	-6.712142e-08	-6.732435e-07	2.696970e-07	-9.563976e-08	3.199779e-08
1266	6.385285e-07	3.292852e-07	-1.057370e-06	5.738142e-08	6.840977e-08
1267	6.385285e-07	3.292852e-07	-1.057370e-06	5.738142e-08	6.840977e-08
1268	-1.183377e-06	-4.140677e-07	1.129605e-06	5.738142e-08	3.952197e-08
1269	7.933367e-07	-5.225867e-07	2.136912e-07	-4.559895e-08	6.261019e-08
1270	1.474891e-06	-8.427546e-08	-1.141060e-06	-9.563976e-08	-3.895669e-08

1271	1.718842e-06	-6.299520e-07	-1.224916e-06	-1.417289e-07	-1.469264e-08
1272	5.804193e-07	-3.535391e-07	-3.997362e-07	-1.417289e-07	-1.104803e-08
1273	1.279653e-06	-2.388716e-07	-1.266885e-06	-7.121540e-08	7.055881e-08
1274	4.787620e-07	3.758986e-07	-3.997362e-07	-4.559895e-08	4.742314e-08
1275	3.339539e-07	3.758986e-07	-7.223371e-07	-1.207004e-08	3.853350e-10
1276	2.149786e-07	7.024634e-07	-2.935321e-07	5.738142e-08	5.755661e-08
1277	-6.712142e-08	-5.572288e-07	6.975014e-07	-6.960785e-08	-7.460363e-09
1278	7.446521e-07	6.590682e-07	-1.266885e-06	-7.121540e-08	-6.278841e-08
1279	2.149786e-07	7.024634e-07	-2.935321e-07	5.738142e-08	5.755661e-08
1280	-8.372459e-07	-9.556801e-07	6.559329e-07	-1.184267e-07	2.675330e-08
1281	6.968316e-07	-2.388716e-07	-3.997362e-07	-7.121540e-08	7.055881e-08
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1283	2.746319e-07	7.855131e-07	-1.266885e-06	-4.559895e-08	7.909160e-08
1284	-1.807172e-07	5.401252e-07	4.149164e-08	1.567053e-07	3.206437e-08
1285	7.446521e-07	-4.737109e-07	-4.502292e-07	5.738142e-08	4.587879e-08
1286	-1.702074e-06	-6.732435e-07	1.129605e-06	-9.563976e-08	6.328653e-08
1287	6.968316e-07	-1.197542e-06	8.690106e-07	1.455103e-07	3.952197e-08
1288	2.149786e-07	4.529497e-07	-9.323354e-07	1.589250e-07	1.167609e-08
1289	7.446521e-07	4.529497e-07	1.556317e-07	4.576215e-08	3.952197e-08
1290	7.446521e-07	4.529497e-07	1.556317e-07	4.576215e-08	3.952197e-08
1291	4.328965e-07	7.441292e-07	-1.266885e-06	-7.121540e-08	1.094567e-08
1292	1.029131e-07	5.524648e-07	-8.511639e-07	-1.207004e-08	4.742314e-08
1293	1.279653e-06	-5.724110e-07	-7.223371e-07	1.022976e-07	1.167609e-08
1294	4.787620e-07	7.690434e-07	-1.266885e-06	-7.121540e-08	7.909160e-08
1295	1.029131e-07	5.524648e-07	-8.511639e-07	-1.207004e-08	4.742314e-08
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1298	6.385285e-07	1.288176e-07	-6.774583e-07	-1.207004e-08	2.902407e-08
1299	1.377304e-06	4.529497e-07	-1.266885e-06	-1.950685e-07	2.823207e-08
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1302	8.870939e-07	9.463687e-07	-9.739283e-07	-4.559895e-08	1.094567e-08
1303	-4.150472e-07	-6.732435e-07	2.696970e-07	-1.207004e-08	2.902407e-08
1304	2.149786e-07	-1.017300e-06	8.690106e-07	-9.563976e-08	6.840977e-08
1305	4.328965e-07	8.271696e-07	-3.491746e-07	5.738142e-08	8.066278e-08
1306	4.787620e-07	4.839119e-07	-6.841191e-08	-7.121540e-08	4.742314e-08
1307	-7.795642e-07	6.590682e-07	2.696970e-07	1.455103e-07	7.486050e-08
1308	8.403457e-07	6.413609e-07	-8.912425e-07	8.373160e-08	3.952197e-08
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1310	7.446521e-07	5.130332e-07	-8.511639e-07	-1.950685e-07	4.587879e-08
1311	4.787620e-07	4.839119e-07	-6.841191e-08	-7.121540e-08	4.742314e-08
1312	9.841694e-07	2.012147e-08	-6.338308e-07	1.402156e-07	2.902407e-08
1313	2.149786e-07	1.508433e-06	-3.491746e-07	-7.121540e-08	8.442682e-08
1314	7.446521e-07	-7.167856e-07	-3.491746e-07	5.738142e-08	8.468339e-08
1315	7.446521e-07	-7.167856e-07	-3.491746e-07	1.022976e-07	8.468339e-08

1316	4.787620e-07	5.401252e-07	-1.438321e-08	-4.559895e-08	8.442682e-08
1317	1.523681e-06	7.441292e-07	-1.266885e-06	-2.553407e-07	-5.717215e-08
1318	-8.949121e-07	-3.535391e-07	9.583580e-07	1.100349e-08	5.780701e-08
1319	4.787620e-07	5.401252e-07	-1.438321e-08	-4.559895e-08	8.442682e-08
1320	-4.150472e-07	7.772737e-07	1.795279e-06	-1.184267e-07	-1.639580e-06
1321	-7.795642e-07	6.036550e-07	3.833080e-07	1.589250e-07	4.248468e-08
1322	1.718842e-06	7.441292e-07	-1.266885e-06	-2.553407e-07	-5.717215e-08
1323	-4.150472e-07	-8.039870e-07	7.817892e-07	-9.563976e-08	1.739086e-08
1324	-4.150472e-07	-7.167856e-07	6.559329e-07	-9.563976e-08	2.266651e-08
1325	8.870939e-07	-2.388716e-07	-1.811450e-07	-1.184267e-07	7.055881e-08
1326	8.870939e-07	-2.388716e-07	-1.811450e-07	-1.184267e-07	7.055881e-08
1327	8.870939e-07	-2.388716e-07	-1.811450e-07	-1.184267e-07	7.055881e-08
1328	8.870939e-07	-2.388716e-07	-1.811450e-07	-1.184267e-07	7.055881e-08
1329	9.841694e-07	7.466536e-08	-8.098654e-07	-9.563976e-08	4.742314e-08
1330	5.260663e-07	4.529497e-07	-6.841191e-08	-1.207004e-08	8.442682e-08
1331	5.260663e-07	4.529497e-07	-6.841191e-08	-1.207004e-08	8.442682e-08
1332	3.339539e-07	9.636699e-07	-6.841191e-08	9.001577e-08	-2.596940e-08
1333	-1.154526e-08	-5.898254e-07	-8.511639e-07	-1.184267e-07	5.755661e-08
1334	-4.150472e-07	8.020835e-07	-2.935321e-07	1.100349e-08	6.261019e-08
1335	6.385285e-07	9.034346e-07	-1.266885e-06	-4.559895e-08	-3.361037e-07
1336	9.348770e-07	3.758986e-07	-1.182954e-06	1.022976e-07	4.146663e-08
1337	1.230768e-06	-3.408157e-08	-1.266885e-06	-1.950685e-07	1.458012e-08
1338	1.230768e-06	-3.408157e-08	-1.266885e-06	-1.950685e-07	1.458012e-08
1339	1.230768e-06	-3.408157e-08	-1.266885e-06	-1.950685e-07	1.458012e-08
1340	4.787620e-07	2.012147e-08	-1.182954e-06	-1.184267e-07	7.909160e-08
1341	4.787620e-07	2.012147e-08	-1.182954e-06	-1.184267e-07	7.909160e-08
1342	4.787620e-07	2.012147e-08	-1.182954e-06	-1.184267e-07	7.909160e-08
1343	4.328965e-07	1.839437e-07	-1.182954e-06	-1.184267e-07	8.259377e-08
1344	4.787620e-07	2.012147e-08	-1.182954e-06	-1.184267e-07	7.909160e-08
1345	-1.817350e-06	-4.737109e-07	1.045738e-06	1.589250e-07	7.055881e-08
1346	1.029131e-07	-3.535391e-07	-1.811450e-07	5.738142e-08	2.823207e-08
1347	1.181784e-06	4.174006e-07	-1.224916e-06	-1.207004e-08	1.167609e-08
1348	6.385285e-07	5.937276e-07	-1.141060e-06	-9.563976e-08	6.084576e-08
1349	6.385285e-07	5.937276e-07	-1.141060e-06	-9.563976e-08	6.084576e-08
1350	7.933367e-07	3.292852e-07	-1.266885e-06	1.518340e-07	6.840977e-08
1351	-3.505905e-07	4.529497e-07	9.791995e-08	-4.559895e-08	4.146663e-08
1352	6.385285e-07	5.130332e-07	-1.224916e-06	5.738142e-08	2.995542e-08
1353	4.328965e-07	5.739479e-07	-1.141060e-06	-7.121540e-08	8.468339e-08
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1355	6.385285e-07	3.758986e-07	-1.141060e-06	5.738142e-08	7.055881e-08
1356	1.181784e-06	-8.846745e-07	-1.237680e-07	-9.563976e-08	8.468339e-08
1357	1.181784e-06	-8.039870e-07	-1.237680e-07	-9.563976e-08	7.909160e-08
1358	5.804193e-07	-4.140677e-07	-1.811450e-07	1.455103e-07	6.084576e-08
1359	5.260663e-07	5.633962e-07	-5.452466e-07	-1.170398e-08	-3.466157e-07
1360	-1.874989e-06	-1.593898e-07	6.975014e-07	-1.950685e-07	5.780701e-08

1361	-4.813379e-07	1.839437e-07	2.136912e-07	5.738142e-08	-5.227412e-08
1362	4.505265e-08	9.291503e-07	-6.774583e-07	1.455103e-07	4.765355e-08
1363	-1.874989e-06	-1.593898e-07	6.975014e-07	-1.950685e-07	5.780701e-08
1364	2.149786e-07	8.948957e-07	-1.438321e-08	-4.559895e-08	7.224071e-08
1365	6.385285e-07	4.686744e-07	-1.182954e-06	-7.121540e-08	3.206437e-08
1366	3.339539e-07	-3.408157e-08	-8.912425e-07	1.100349e-08	-6.804538e-08
1367	5.804193e-07	7.441292e-07	-9.323354e-07	-1.184267e-07	4.248468e-08
1368	7.933367e-07	1.839437e-07	1.556317e-07	1.100349e-08	7.486050e-08
1369	2.149786e-07	7.937749e-07	2.696970e-07	-1.207004e-08	6.261019e-08
1370	9.348770e-07	4.839119e-07	-1.266885e-06	-1.417289e-07	4.146663e-08
1371	-1.807172e-07	8.104161e-07	1.171028e-06	-1.184267e-07	-1.644836e-06
1372	4.787620e-07	3.758986e-07	1.368925e-06	1.340186e-07	-2.677756e-07
1373	-1.807172e-07	8.104161e-07	1.171028e-06	-1.184267e-07	-1.644836e-06
1374	3.846396e-07	7.608144e-07	-1.438321e-08	9.001577e-08	-4.175390e-08
1375	8.403457e-07	8.694048e-07	-1.266885e-06	-2.553407e-07	-8.669559e-07
1376	6.385285e-07	2.835149e-07	-6.841191e-08	-4.559895e-08	8.442682e-08
1377	1.029131e-07	9.897283e-07	-3.997362e-07	-1.950685e-07	8.468339e-08
1378	1.621262e-06	-8.427546e-08	-6.841191e-08	5.738142e-08	6.328653e-08
1379	6.385285e-07	-2.950422e-07	-6.338308e-07	-4.559895e-08	6.084576e-08
1380	4.787620e-07	3.292852e-07	-1.182954e-06	1.589250e-07	7.055881e-08
1381	4.787620e-07	3.292852e-07	-1.182954e-06	1.589250e-07	7.055881e-08
1382	8.403457e-07	8.948957e-07	-8.912425e-07	-9.563976e-08	5.271686e-08
1383	2.149786e-07	4.529497e-07	-2.935321e-07	-1.207004e-08	7.224071e-08
1384	2.149786e-07	4.529497e-07	-2.935321e-07	-1.207004e-08	7.224071e-08
1385	6.968316e-07	7.690434e-07	-6.338308e-07	-9.563976e-08	-2.596940e-08
1386	2.149786e-07	8.609318e-07	-1.237680e-07	1.151666e-07	6.620086e-08
1387	5.260663e-07	5.633962e-07	-9.739283e-07	-9.563976e-08	1.094567e-08
1388	5.260663e-07	5.633962e-07	-9.739283e-07	-9.563976e-08	1.094567e-08
1389	9.348770e-07	5.633962e-07	2.136912e-07	-5.672593e-08	8.442682e-08
1390	8.870939e-07	-1.337492e-07	-1.182954e-06	1.100349e-08	7.224071e-08
1391	1.230768e-06	-8.427546e-08	-1.266885e-06	5.738142e-08	3.952197e-08
1392	2.149786e-07	5.633962e-07	-2.935321e-07	1.022976e-07	4.248468e-08
1393	6.968316e-07	5.130332e-07	-1.015647e-06	-2.252781e-07	4.317297e-08
1394	2.149786e-07	7.466536e-08	-1.237680e-07	-4.559895e-08	6.084576e-08
1395	1.033778e-06	3.292852e-07	-6.774583e-07	8.373160e-08	4.317297e-08
1396	-1.237739e-07	6.503875e-07	-8.511639e-07	-1.417289e-07	5.272762e-08
1397	-1.807172e-07	6.321453e-07	-8.511639e-07	-1.417289e-07	6.328653e-08
1398	5.804193e-07	4.174006e-07	-6.841191e-08	-4.559895e-08	7.224071e-08
1399	7.446521e-07	4.529497e-07	-7.669679e-07	1.100349e-08	8.442682e-08
1400	6.385285e-07	6.228241e-07	-1.266885e-06	1.100349e-08	3.952197e-08
1401	2.746319e-07	6.590682e-07	-3.491746e-07	-1.207004e-08	7.224071e-08
1402	2.746319e-07	6.590682e-07	-3.491746e-07	-1.207004e-08	7.224071e-08
1403	4.328965e-07	-9.556801e-07	7.817892e-07	-4.559895e-08	-7.178486e-10
1404	6.385285e-07	-8.453453e-07	3.248752e-07	-1.184267e-07	2.486890e-08
1405	2.149786e-07	-3.408157e-08	6.559329e-07	1.589250e-07	8.039333e-08

1406	3.846396e-07	-1.017300e-06	1.556317e-07	-4.559895e-08	2.675330e-08
1407	1.029131e-07	-1.105254e-06	3.833080e-07	7.490757e-09	2.675330e-08
1408	1.230768e-06	2.012147e-08	-1.266885e-06	-1.207004e-08	2.902407e-08
1409	1.587053e-07	-9.875367e-07	5.023219e-07	1.100349e-08	-1.469264e-08
1410	1.230768e-06	2.012147e-08	-1.266885e-06	-1.207004e-08	2.902407e-08
1411	9.348770e-07	1.121361e-06	-1.266885e-06	-9.563976e-08	8.039333e-08
1412	1.033778e-06	-1.849636e-07	6.975014e-07	1.022976e-07	4.587879e-08
1413	1.029131e-07	-1.105254e-06	3.833080e-07	7.490757e-09	2.675330e-08
1414	-8.949121e-07	3.292852e-07	-1.237680e-07	-4.559895e-08	-1.016835e-08
1415	-9.525852e-07	-8.846745e-07	1.481563e-06	1.100349e-08	7.055881e-08
1416	1.132640e-06	3.758986e-07	-1.266885e-06	-1.417289e-07	2.995542e-08
1417	-9.525852e-07	-8.846745e-07	1.481563e-06	1.100349e-08	7.055881e-08
1418	5.804193e-07	-8.039870e-07	3.248752e-07	1.455103e-07	2.902407e-08
1419	3.339539e-07	1.288176e-07	-1.224916e-06	-1.417289e-07	7.055881e-08
1420	3.846396e-07	5.633962e-07	-3.491746e-07	1.100349e-08	7.055881e-08
1421	3.339539e-07	1.288176e-07	-1.224916e-06	-1.417289e-07	7.055881e-08
1422	4.787620e-07	-5.572288e-07	-4.984645e-07	-1.417289e-07	6.261019e-08
1423	7.446521e-07	1.839437e-07	-1.266885e-06	-1.207004e-08	6.261019e-08
1424	1.033778e-06	1.288176e-07	-8.912425e-07	8.373160e-08	-1.100942e-07
1425	4.505265e-08	-1.067556e-06	5.584314e-07	-1.950685e-07	6.620086e-08
1426	4.505265e-08	-1.067556e-06	5.584314e-07	-1.950685e-07	6.620086e-08
1427	3.846396e-07	-1.117289e-06	5.584314e-07	-9.563976e-08	-2.681306e-08
1428	4.328965e-07	-5.225867e-07	3.248752e-07	1.455103e-07	6.084576e-08
1429	3.339539e-07	5.633962e-07	-1.266885e-06	-7.121540e-08	4.605984e-08
1430	2.746319e-07	-1.174613e-06	6.975014e-07	1.100349e-08	-1.104803e-08
1431	5.260663e-07	-5.225867e-07	-1.811450e-07	-9.563976e-08	3.199779e-08
1432	4.328965e-07	-4.140677e-07	2.136912e-07	-1.207004e-08	4.146663e-08
1433	1.279653e-06	-3.535391e-07	-1.266885e-06	-1.417289e-07	-5.110033e-08
1434	1.181784e-06	-5.572288e-07	-5.905550e-07	-9.563976e-08	4.146663e-08
1435	-1.068026e-06	1.839437e-07	5.584314e-07	-6.747252e-07	-5.883906e-07
1436	-1.068026e-06	1.839437e-07	5.584314e-07	-6.747252e-07	-5.883906e-07
1437	-9.525852e-07	-6.299520e-07	6.098883e-07	-1.417289e-07	-3.518717e-07
1438	8.403457e-07	1.042197e-06	9.791995e-08	2.664563e-08	4.317297e-08
1439	7.446521e-07	4.174006e-07	-1.266885e-06	-1.184267e-07	-7.178486e-10
1440	5.804193e-07	6.228241e-07	-1.182954e-06	1.100349e-08	4.605984e-08
1441	6.385285e-07	-6.732435e-07	2.696970e-07	-4.559895e-08	2.675330e-08
1442	5.260663e-07	8.187823e-07	-4.502292e-07	1.093445e-09	4.248468e-08
1443	7.933367e-07	5.401252e-07	-1.182954e-06	-7.121540e-08	6.084576e-08
1444	7.933367e-07	3.758986e-07	-3.997362e-07	-1.070345e-07	1.739086e-08
1445	5.804193e-07	6.228241e-07	-1.182954e-06	1.100349e-08	4.605984e-08
1446	5.260663e-07	8.187823e-07	-4.502292e-07	1.093445e-09	4.248468e-08
1447	7.933367e-07	5.401252e-07	-1.182954e-06	-7.121540e-08	6.084576e-08
1448	8.403457e-07	6.228241e-07	-1.266885e-06	-7.121540e-08	7.224071e-08
1449	7.933367e-07	3.758986e-07	-1.224916e-06	-7.121540e-08	7.224071e-08
1450	6.385285e-07	-6.299520e-07	2.136912e-07	-4.559895e-08	1.167609e-08

## Midterm\_WineQuality

1451	6.385285e-07	-6.732435e-07	2.696970e-07	-4.559895e-08	2.675330e-08
1452	3.339539e-07	-8.846745e-07	8.690106e-07	1.567053e-07	-1.016835e-08
1453	9.348770e-07	3.758986e-07	-1.182954e-06	-4.559895e-08	2.675330e-08
1454	4.328965e-07	-8.427546e-08	3.248752e-07	-7.121540e-08	5.271686e-08
1455	-1.932628e-06	-2.950422e-07	1.627404e-06	1.100349e-08	4.742314e-08
1456	9.841694e-07	1.015940e-06	-1.266885e-06	-1.417289e-07	-7.178486e-10
1457	1.230768e-06	1.839437e-07	-1.015647e-06	-9.563976e-08	-7.460363e-09
1458	4.328965e-07	-8.427546e-08	3.248752e-07	-7.121540e-08	5.271686e-08
1459	-1.154526e-08	-9.875367e-07	6.975014e-07	-1.184267e-07	3.572843e-08
1460	2.746319e-07	-1.151683e-06	4.431150e-07	-1.184267e-07	5.627579e-09
1461	1.033778e-06	-4.737109e-07	-8.912425e-07	5.738142e-08	5.627579e-09
1462	1.132640e-06	8.187823e-07	-1.266885e-06	-1.207004e-08	2.266651e-08
1463	8.403457e-07	5.633962e-07	-1.141060e-06	5.738142e-08	5.755661e-08
1464	7.933367e-07	5.401252e-07	-1.224916e-06	1.022976e-07	6.620086e-08
1465	8.403457e-07	4.174006e-07	-8.511639e-07	-1.184267e-07	2.823207e-08
1466	8.403457e-07	4.174006e-07	-8.511639e-07	-1.184267e-07	2.823207e-08
1467	5.804193e-07	-1.337492e-07	2.696970e-07	-1.207004e-08	2.675330e-08
1468	8.870939e-07	1.262114e-06	-9.323354e-07	5.738142e-08	3.572843e-08
1469	5.804193e-07	-1.337492e-07	2.696970e-07	-1.207004e-08	2.675330e-08
1470	5.804193e-07	1.156550e-06	-1.057370e-06	-1.207004e-08	2.486890e-08
1471	-9.525852e-07	6.590682e-07	-8.098654e-07	-1.950685e-07	7.909160e-08
1472	8.870939e-07	6.766699e-07	-9.323354e-07	9.315949e-08	3.572843e-08
1473	4.328965e-07	-7.605810e-07	1.518487e-06	1.589250e-07	4.742314e-08
1474	1.181784e-06	4.529497e-07	-9.323354e-07	-9.563976e-08	4.587879e-08
1475	-8.949121e-07	-3.408157e-08	1.129605e-06	-5.683309e-07	-5.410871e-07
1476	1.572472e-06	-1.849636e-07	-8.098654e-07	1.100349e-08	-1.469264e-08
1477	-8.949121e-07	-3.408157e-08	1.129605e-06	-5.683309e-07	-5.410871e-07
1478	1.572472e-06	-1.849636e-07	-8.098654e-07	1.100349e-08	-1.469264e-08
1479	6.968316e-07	9.723552e-07	-1.057370e-06	-3.102697e-08	8.039333e-08
1480	1.029131e-07	-1.017300e-06	1.518487e-06	1.402156e-07	-1.016835e-08
1481	1.426101e-06	5.130332e-07	-1.141060e-06	-1.673771e-07	7.224071e-08
1482	1.029131e-07	-1.017300e-06	1.518487e-06	1.402156e-07	-1.016835e-08
1483	6.385285e-07	3.758986e-07	1.291156e-06	-1.207004e-08	-6.278841e-08
1484	1.587053e-07	-8.453453e-07	8.690106e-07	-1.673771e-07	-5.110033e-08
1485	8.403457e-07	1.033461e-06	-1.015647e-06	-4.559895e-08	2.266651e-08
1486	7.446521e-07	5.937276e-07	-5.905550e-07	-1.207004e-08	5.271686e-08
1487	8.403457e-07	6.413609e-07	-3.491746e-07	-1.207004e-08	4.317297e-08
1488	1.230768e-06	5.633962e-07	-1.057370e-06	-7.121540e-08	3.199779e-08
1489	1.426101e-06	1.839437e-07	-1.099199e-06	-1.184267e-07	-1.104803e-08
1490	1.132640e-06	3.292852e-07	-8.511639e-07	-1.207004e-08	-1.469264e-08
1491	6.968316e-07	-1.128754e-06	1.087158e-06	-9.563976e-08	-6.931579e-08
1492	1.426101e-06	1.839437e-07	-1.099199e-06	-1.184267e-07	-1.104803e-08
1493	1.132640e-06	5.838653e-07	-1.015647e-06	-1.417289e-07	-7.460363e-09
1494	3.846396e-07	1.839437e-07	-6.841191e-08	-7.121540e-08	6.835400e-08
1495	1.033778e-06	-9.217426e-07	-8.912425e-07	-1.950685e-07	3.199779e-08

1496	7.446521e-07	-4.140677e-07	-1.182954e-06	-7.121540e-08	7.224071e-08
1497	3.846396e-07	1.839437e-07	-6.841191e-08	-7.121540e-08	6.835400e-08
1498	7.933367e-07	7.441292e-07	-1.141060e-06	5.738142e-08	5.627579e-09
1499	9.348770e-07	1.007200e-06	-1.099199e-06	5.738142e-08	3.952197e-08
1500	7.933367e-07	7.441292e-07	-1.141060e-06	5.738142e-08	5.627579e-09
1501	4.787620e-07	7.191894e-07	-1.099199e-06	-1.673771e-07	6.620086e-08
1502	3.339539e-07	8.778924e-07	9.791995e-08	5.847877e-08	8.442682e-08
1503	5.804193e-07	3.981340e-07	-4.984645e-07	1.022976e-07	6.084576e-08
1504	1.132640e-06	-3.535391e-07	6.559329e-07	1.455103e-07	7.055881e-08
1505	4.787620e-07	-6.299520e-07	1.406807e-06	5.738142e-08	-2.070427e-08
1506	8.870939e-07	7.772737e-07	-1.182954e-06	-9.563976e-08	6.084576e-08
1507	8.403457e-07	8.609318e-07	-1.057370e-06	-4.559895e-08	4.317297e-08
1508	4.787620e-07	-6.299520e-07	1.406807e-06	5.738142e-08	-2.070427e-08
1509	6.968316e-07	-1.043878e-06	1.518487e-06	-1.207004e-08	5.271686e-08
1510	2.746319e-07	-1.174613e-06	6.975014e-07	-9.563976e-08	2.675330e-08
1511	1.033778e-06	-7.167856e-07	-3.491746e-07	1.100349e-08	-2.074124e-08
1512	6.968316e-07	6.590682e-07	-1.099199e-06	-1.207004e-08	3.952197e-08
1513	1.033778e-06	8.271696e-07	-1.099199e-06	1.100349e-08	2.486890e-08
1514	1.033778e-06	2.835149e-07	-6.338308e-07	-9.563976e-08	6.084576e-08
1515	7.933367e-07	9.119893e-07	-3.491746e-07	7.116378e-08	5.271686e-08
1516	7.933367e-07	9.119893e-07	-3.491746e-07	7.116378e-08	5.271686e-08
1517	1.181784e-06	-8.846745e-07	-1.237680e-07	5.738142e-08	4.587879e-08
1518	9.841694e-07	1.288176e-07	-1.015647e-06	-4.559895e-08	2.823207e-08
1519	5.260663e-07	-1.849636e-07	9.583580e-07	1.100349e-08	-6.278841e-08
1520	9.348770e-07	6.766699e-07	-9.323354e-07	1.589250e-07	-2.070427e-08
1521	9.841694e-07	1.288176e-07	-1.015647e-06	-4.559895e-08	2.823207e-08
1522	7.933367e-07	-1.337492e-07	-3.997362e-07	-7.121540e-08	8.039333e-08
1523	1.181784e-06	-8.846745e-07	-1.237680e-07	5.738142e-08	4.587879e-08
1524	8.403457e-07	-1.337492e-07	-1.237680e-07	-4.559895e-08	6.620086e-08
1525	1.230768e-06	-4.737109e-07	-4.502292e-07	-4.559895e-08	5.755661e-08
1526	8.870939e-07	-1.337492e-07	-9.323354e-07	-1.207004e-08	2.902407e-08
1527	8.403457e-07	-1.849636e-07	-9.323354e-07	1.100349e-08	2.902407e-08
1528	6.968316e-07	1.288176e-07	-9.739283e-07	-1.184267e-07	4.587879e-08
1529	2.746319e-07	-9.875367e-07	1.087158e-06	1.100349e-08	3.206437e-08
1530	6.968316e-07	6.590682e-07	-9.323354e-07	-1.207004e-08	2.823207e-08
1531	9.348770e-07	-3.535391e-07	-8.912425e-07	1.100349e-08	2.823207e-08
1532	1.181784e-06	6.854438e-07	-8.511639e-07	1.518340e-07	6.840977e-08
1533	6.385285e-07	1.288176e-07	-7.223371e-07	-4.559895e-08	1.739086e-08
1534	2.149786e-07	-5.898254e-07	1.556317e-07	-7.121540e-08	5.271686e-08
1535	9.348770e-07	2.835149e-07	-6.774583e-07	1.022976e-07	2.902407e-08
1536	7.446521e-07	2.354558e-07	-7.223371e-07	1.100349e-08	5.755661e-08
1537	1.181784e-06	1.288176e-07	-9.323354e-07	-7.121540e-08	7.055881e-08
1538	1.523681e-06	3.758986e-07	-9.323354e-07	-7.121540e-08	2.008402e-08
1539	1.132640e-06	5.633962e-07	-8.912425e-07	1.455103e-07	6.840977e-08
1540	6.385285e-07	-5.898254e-07	2.696970e-07	-9.563976e-08	2.995542e-08

1541	1.132640e-06	7.466536e-08	-9.323354e-07	5.212399e-08	4.587879e-08
1542	5.260663e-07	-1.087516e-06	9.791995e-08	1.100349e-08	5.627579e-09
1543	8.870939e-07	9.377527e-07	-1.182954e-06	-7.121540e-08	2.902407e-08
1544	-1.586800e-06	-3.535391e-07	7.817892e-07	1.100349e-08	2.902407e-08
1545	-1.154526e-08	-6.732435e-07	8.254983e-07	5.738142e-08	2.823207e-08
1546	9.841694e-07	5.401252e-07	3.248752e-07	-9.563976e-08	2.008402e-08
1547	7.446521e-07	3.292852e-07	-1.182954e-06	-4.559895e-08	4.605984e-08
1548	1.083292e-06	4.529497e-07	-8.511639e-07	-1.417289e-07	-1.469264e-08
1549	-1.644436e-06	-5.572288e-07	1.129605e-06	-4.559895e-08	1.622829e-08
1550	5.260663e-07	-7.167856e-07	1.556317e-07	-9.563976e-08	5.271686e-08
1551	6.968316e-07	6.413609e-07	-1.266885e-06	5.738142e-08	8.066278e-08
1552	6.968316e-07	6.228241e-07	-1.266885e-06	5.738142e-08	8.442682e-08
1553	1.083292e-06	6.413609e-07	-1.224916e-06	9.629783e-08	-4.893533e-09
1554	5.804193e-07	7.358029e-07	-1.266885e-06	1.100349e-08	7.224071e-08
1555	9.348770e-07	9.377527e-07	-1.182954e-06	1.022976e-07	2.675330e-08
1556	7.446521e-07	2.835149e-07	-5.452466e-07	-1.184267e-07	2.995542e-08
1557	9.348770e-07	9.810545e-07	-1.099199e-06	1.100349e-08	3.199779e-08
1558	9.348770e-07	9.377527e-07	-1.182954e-06	1.022976e-07	2.675330e-08
1559	7.933367e-07	5.401252e-07	3.248752e-07	-9.620641e-08	-6.987655e-07
1560	3.339539e-07	4.529497e-07	-6.841191e-08	-4.559895e-08	7.224071e-08
1561	3.339539e-07	4.529497e-07	-6.841191e-08	-4.559895e-08	7.224071e-08
1562	3.339539e-07	4.529497e-07	-6.841191e-08	-4.559895e-08	7.224071e-08
1563	6.385285e-07	6.677922e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
1564	6.385285e-07	6.677922e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
1565	6.385285e-07	6.677922e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
1566	8.870939e-07	6.228241e-07	-1.182954e-06	-7.121540e-08	2.486890e-08
1567	8.870939e-07	-1.197542e-06	1.662907e-06	-1.207004e-08	2.008402e-08
1568	6.385285e-07	6.677922e-07	-7.223371e-07	-4.559895e-08	6.620086e-08
1569	7.446521e-07	2.835149e-07	-7.223371e-07	-1.417289e-07	7.055881e-08
1570	1.132640e-06	2.012147e-08	-6.774583e-07	-7.121540e-08	1.167609e-08
1571	1.033778e-06	-7.167856e-07	1.251645e-06	1.100349e-08	-6.724858e-07
1572	1.033778e-06	-6.299520e-07	-6.774583e-07	1.100349e-08	-7.538761e-08
1573	5.804193e-07	6.590682e-07	2.696970e-07	1.100349e-08	4.146663e-08
1574	1.230768e-06	3.758986e-07	-3.997362e-07	1.022976e-07	5.755661e-08
1575	1.426101e-06	-9.217426e-07	2.105582e-06	-5.749806e-07	5.271686e-08
1576	4.787620e-07	7.466536e-08	6.975014e-07	1.100349e-08	2.266651e-08
1577	2.149786e-07	-9.556801e-07	1.627404e-06	-1.417289e-07	6.840977e-08
1578	1.132640e-06	6.766699e-07	-6.338308e-07	7.490757e-09	6.620086e-08
1579	8.403457e-07	6.228241e-07	-6.338308e-07	-9.563976e-08	-8.381383e-08
1580	1.132640e-06	2.835149e-07	-8.912425e-07	-1.184267e-07	2.495497e-09
1581	5.260663e-07	-7.605810e-07	3.248752e-07	1.022976e-07	3.952197e-08
1582	1.132640e-06	2.835149e-07	-8.912425e-07	-1.184267e-07	2.495497e-09
1583	1.181784e-06	7.024634e-07	-8.511639e-07	1.589250e-07	2.495497e-09
1584	1.132640e-06	-2.388716e-07	9.791995e-08	-1.207004e-08	5.271686e-08
1585	8.870939e-07	-8.846745e-07	8.690106e-07	1.022976e-07	2.486890e-08

1586	6.385285e-07	-5.898254e-07	8.690106e-07	1.589250e-07	3.199779e-08
1587	4.787620e-07	-9.217426e-07	7.388933e-07	1.022976e-07	2.995542e-08
1588	1.328501e-06	4.839119e-07	-8.098654e-07	-9.563976e-08	3.199779e-08
1589	6.385285e-07	6.036550e-07	3.248752e-07	1.455103e-07	3.952197e-08
1590	9.348770e-07	7.191894e-07	-3.997362e-07	-1.693525e-07	4.742314e-08
1591	1.083292e-06	2.354558e-07	-6.338308e-07	-9.563976e-08	7.055881e-08
1592	1.523681e-06	7.441292e-07	-8.912425e-07	-1.184267e-07	6.835400e-08
1593	1.083292e-06	2.012147e-08	-7.223371e-07	5.738142e-08	6.620086e-08
1594	8.403457e-07	5.130332e-07	-9.323354e-07	-7.121540e-08	3.952197e-08
1595	1.132640e-06	4.529497e-07	-9.323354e-07	-4.559895e-08	6.328653e-08
1596	1.279653e-06	2.354558e-07	-8.511639e-07	1.100349e-08	2.675330e-08
1597	1.083292e-06	2.012147e-08	-7.223371e-07	5.738142e-08	6.620086e-08
1598	1.279653e-06	5.739479e-07	-7.669679e-07	-4.559895e-08	5.755661e-08
1599	1.230768e-06	-9.217426e-07	1.002594e-06	1.025832e-07	3.572843e-08
	free_sulfur_dioxide	total_sulfur_dioxide		density	pH
1	-9.954406e-08		1.319187e-07	-9.902321e-08	-3.137590e-07
2	1.807154e-07		-2.771039e-07	-1.954420e-07	2.044902e-07
3	-7.868431e-09		-1.162420e-07	-1.836767e-07	6.892044e-08
4	1.882786e-08		-1.948273e-07	-5.768307e-08	2.955078e-07
5	-9.954406e-08		1.319187e-07	-9.902321e-08	-3.137590e-07
6	-6.146904e-08		5.415023e-08	-9.902321e-08	-3.137590e-07
7	-7.868431e-09		-1.821525e-07	-1.966464e-07	-2.557486e-08
8	-7.868431e-09		3.145656e-07	1.139030e-07	-2.013010e-07
9	-1.399430e-07		3.618707e-07	-1.954420e-07	-1.448573e-07
10	1.882786e-08		-6.687566e-07	-9.902321e-08	-1.338378e-07
11	-7.868431e-09		-2.547070e-07	-1.502729e-07	1.279405e-08
12	1.882786e-08		-6.687566e-07	-9.902321e-08	-1.338378e-07
13	9.908174e-09		-1.821525e-07	1.759986e-07	-3.705868e-07
14	-1.399430e-07		1.930174e-07	-1.579996e-07	6.892044e-08
15	6.450020e-07		-1.062396e-06	6.950582e-08	2.955078e-07
16	6.277736e-07		-1.084319e-06	6.950582e-08	2.726979e-07
17	3.520728e-07		-6.795331e-07	-1.924790e-07	-2.557486e-08
18	9.908174e-09		-1.430389e-07	-1.954420e-07	4.110493e-07
19	-1.832284e-07		1.930174e-07	-1.579996e-07	-1.879023e-07
20	1.882786e-08		-1.430389e-07	-1.924790e-07	5.725802e-07
21	2.487998e-07		-1.948273e-07	-1.954420e-07	-2.013010e-07
22	1.484059e-07		-3.216715e-07	-1.472881e-08	-3.223068e-07
23	-1.213479e-07		9.360812e-08	-2.000202e-07	2.726979e-07
24	-1.399430e-07		-2.771039e-07	-1.954420e-07	2.726979e-07
25	1.070925e-07		5.415023e-08	-1.954420e-07	-2.438294e-07
26	-9.954406e-08		2.797899e-07	-7.102618e-08	-1.185262e-07
27	-2.054800e-07		4.825363e-07	-1.882556e-07	1.279405e-08
28	-1.213479e-07		9.360812e-08	-2.000202e-07	2.726979e-07
29	-3.700497e-08		1.182841e-07	-1.707948e-07	-2.785347e-07
30	-1.574159e-07		3.927916e-07	-1.966464e-07	-1.879023e-07

31	1.882786e-08	-4.453450e-07	-1.328214e-07	-1.338378e-07
32	1.289502e-07	9.360812e-08	-2.000202e-07	-2.697296e-07
33	-7.868431e-09	-7.844087e-07	-2.000202e-07	2.726979e-07
34	4.382575e-07	-4.566260e-07	2.234732e-07	-2.610590e-07
35	-6.146904e-08	-6.672605e-08	-1.129120e-07	-1.879023e-07
36	-1.930414e-07	3.618707e-07	6.950582e-08	-2.162206e-07
37	-2.201356e-07	4.084411e-07	-1.519744e-07	-2.352413e-07
38	-6.146904e-08	1.849054e-07	-1.954420e-07	1.322413e-07
39	-1.698864e-07	3.464295e-07	2.387870e-07	-3.050671e-07
40	-9.085632e-08	-5.018471e-07	-9.902321e-08	-9.834612e-08
41	-9.085632e-08	-5.018471e-07	-9.902321e-08	-9.834612e-08
42	1.882786e-08	-1.988621e-08	-1.417024e-07	6.892044e-08
43	-1.574159e-07	4.249879e-07	-1.954420e-07	1.803522e-07
44	-1.399430e-07	2.797899e-07	-1.954420e-07	-2.557486e-08
45	-1.930414e-07	4.825363e-07	-1.882556e-07	-2.874198e-07
46	-1.574159e-07	-2.547070e-07	3.662121e-07	-5.609288e-07
47	1.289502e-07	-7.946220e-07	-1.836767e-07	9.287626e-08
48	-9.085632e-08	9.360812e-08	-1.924790e-07	9.287626e-08
49	-1.930414e-07	4.622601e-07	-1.328214e-07	-1.185262e-07
50	-9.085632e-08	-6.030279e-07	-5.037284e-08	-6.966524e-08
51	-2.054800e-07	2.797899e-07	-1.761979e-07	3.186201e-07
52	-1.574159e-07	4.084411e-07	-9.219410e-08	-2.162206e-07
53	-1.832284e-07	4.249879e-07	-7.102618e-08	-2.013010e-07
54	2.659212e-07	-8.449059e-07	-1.836767e-07	2.044902e-07
55	3.175905e-07	-3.440265e-07	-7.102618e-08	2.726979e-07
56	1.807154e-07	-5.532650e-09	-9.902321e-08	-1.185262e-07
57	-2.054800e-07	5.040945e-07	-1.761979e-07	5.725802e-07
58	6.105452e-07	-7.534777e-07	6.574152e-09	6.892044e-08
59	1.882786e-08	-1.162420e-07	-1.519744e-07	-2.438294e-07
60	-1.399430e-07	-1.988621e-08	-1.882556e-07	-2.267532e-07
61	5.547624e-08	-9.052807e-08	-5.768307e-08	-2.524416e-07
62	8.094568e-08	-7.741413e-07	-1.954420e-07	1.803522e-07
63	-9.085632e-08	1.182841e-07	-1.954420e-07	-1.879023e-07
64	-6.146904e-08	-1.162420e-07	-2.000202e-07	-2.013010e-07
65	-2.054800e-07	4.825363e-07	-1.882556e-07	-2.267532e-07
66	-2.054800e-07	4.825363e-07	-1.882556e-07	-2.267532e-07
67	-9.954406e-08	6.725385e-08	-1.954420e-07	-2.352413e-07
68	-1.832284e-07	4.084411e-07	-1.882556e-07	-2.524416e-07
69	2.144871e-07	-2.547070e-07	-1.924790e-07	1.279405e-08
70	-1.574159e-07	3.464295e-07	-1.882556e-07	-1.185262e-07
71	-7.868431e-09	2.145641e-07	-1.954545e-07	-6.966524e-08
72	1.882786e-08	-6.030279e-07	-1.882556e-07	-6.966524e-08
73	3.620130e-08	-5.807475e-07	-1.746153e-07	-4.708504e-08
74	-9.954406e-08	1.953168e-08	-1.417024e-07	-4.708504e-08
75	2.316801e-07	-4.566260e-07	2.751498e-08	1.279405e-08

76	-1.399430e-07	3.086291e-08	6.950582e-08	-3.389296e-07
77	-1.399430e-07	3.086291e-08	6.950582e-08	-3.389296e-07
78	-3.700497e-08	1.849054e-07	-2.000202e-07	-3.223068e-07
79	-9.085632e-08	-4.228186e-07	-1.328214e-07	-1.879023e-07
80	2.144871e-07	-8.449059e-07	-1.707948e-07	2.955078e-07
81	-2.201356e-07	4.084411e-07	-1.328214e-07	-2.267532e-07
82	1.289502e-07	-2.771039e-07	-1.579996e-07	3.648722e-07
83	1.070925e-07	-3.440265e-07	-1.836767e-07	-1.448573e-07
84	9.908174e-09	-7.806793e-08	-1.924790e-07	2.955078e-07
85	3.620130e-08	-2.070732e-07	-1.502729e-07	-2.524416e-07
86	5.547624e-08	5.415023e-08	-1.746153e-07	-2.267532e-07
87	8.094568e-08	-9.966273e-07	-1.707948e-07	8.264228e-07
88	-1.399430e-07	1.751580e-07	-2.000202e-07	-2.013010e-07
89	3.348322e-07	-9.036224e-07	-9.902321e-08	3.417597e-07
90	-1.574159e-07	2.618465e-07	-9.902321e-08	-2.874198e-07
91	4.727179e-07	-1.025858e-06	-1.966464e-07	1.322413e-07
92	8.094568e-08	-9.966273e-07	-1.707948e-07	8.264228e-07
93	5.547624e-08	-9.747045e-07	-1.707948e-07	8.264228e-07
94	-1.399430e-07	1.751580e-07	-2.000202e-07	-2.013010e-07
95	4.554895e-07	-4.791916e-07	2.809486e-07	-4.747945e-07
96	1.882786e-08	-7.115445e-07	4.093849e-07	-5.322173e-07
97	-1.574159e-07	2.797899e-07	-2.021188e-07	-2.610590e-07
98	-2.201356e-07	2.974618e-07	-1.910370e-07	9.287626e-08
99	-1.930414e-07	5.040945e-07	-1.954545e-07	-2.013010e-07
100	-6.146904e-08	1.182841e-07	-1.707948e-07	-2.557486e-08
101	-9.954406e-08	-6.672605e-08	-1.707948e-07	-2.162206e-07
102	-1.574159e-07	2.974618e-07	-1.502729e-07	-4.708504e-08
103	-6.146904e-08	1.182841e-07	-1.707948e-07	-2.557486e-08
104	-9.085632e-08	-2.547070e-07	-1.954545e-07	-6.730916e-09
105	-1.930414e-07	1.059504e-07	-1.622284e-07	-9.834612e-08
106	-9.085632e-08	-2.547070e-07	-1.954545e-07	-6.730916e-09
107	3.620130e-08	-2.993649e-07	-1.658585e-07	4.802745e-07
108	-7.868431e-09	-2.429637e-07	-1.924790e-07	-2.697296e-07
109	3.620130e-08	-4.228186e-07	-1.417024e-07	-1.695273e-07
110	3.865506e-07	-1.120857e-06	-1.924790e-07	1.803522e-07
111	-9.085632e-08	-3.332248e-08	-1.966464e-07	2.274022e-07
112	-9.954406e-08	-7.325857e-07	-1.966464e-07	3.186201e-07
113	-3.700497e-08	-7.638385e-07	-1.966464e-07	3.186201e-07
114	1.289502e-07	-1.988621e-08	1.123147e-07	-6.966524e-08
115	-9.085632e-08	-3.332248e-08	-1.966464e-07	2.274022e-07
116	-6.146904e-08	-2.192878e-07	-2.000202e-07	5.033506e-07
117	-9.954406e-08	5.415023e-08	-9.902321e-08	-2.013010e-07
118	-1.698864e-07	2.015588e-07	-1.836767e-07	-1.695273e-07
119	-3.700497e-08	-1.430389e-07	-1.882556e-07	1.803522e-07
120	1.289502e-07	-5.245099e-07	-1.502729e-07	-1.185262e-07

121	-1.213479e-07	-5.245099e-07	-1.882556e-07	-2.557486e-08
122	-3.700497e-08	-1.430389e-07	-1.882556e-07	1.803522e-07
123	-2.201356e-07	4.430114e-07	-5.768307e-08	-2.962637e-07
124	-9.954406e-08	1.319187e-07	-1.417024e-07	-2.524416e-07
125	1.070925e-07	-6.687566e-07	-1.622284e-07	-2.013010e-07
126	2.144871e-07	-5.357871e-07	2.751498e-08	2.955078e-07
127	-2.201356e-07	4.622601e-07	-1.966464e-07	-3.306805e-07
128	-2.201356e-07	4.622601e-07	-1.966464e-07	-3.389296e-07
129	-2.201356e-07	3.927916e-07	-1.882556e-07	-2.352413e-07
130	-1.832284e-07	3.464295e-07	-7.102618e-08	-2.352413e-07
131	2.659212e-07	-9.820121e-07	-1.954420e-07	1.129875e-07
132	1.882786e-08	-6.361134e-07	3.021354e-07	-4.058870e-07
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134	1.882786e-08	2.291578e-07	-9.001783e-09	-2.162206e-07
135	-6.146904e-08	1.930174e-07	-1.502729e-07	1.545022e-07
136	9.908174e-09	-2.312843e-07	-2.021188e-07	2.274022e-07
137	-1.213479e-07	-9.052807e-08	-1.954420e-07	1.322413e-07
138	-6.146904e-08	-5.532650e-09	-1.707948e-07	-2.874198e-07
139	-7.868431e-09	-7.009158e-07	-1.882556e-07	-9.834612e-08
140	1.882786e-08	-7.325857e-07	-1.882556e-07	-6.966524e-08
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143	2.144871e-07	-2.312843e-07	7.627210e-07	-4.345985e-07
144	-2.201356e-07	3.308575e-07	-5.037284e-08	-1.185262e-07
145	2.144871e-07	-2.312843e-07	7.627210e-07	-4.345985e-07
146	3.003484e-07	-1.033165e-06	-1.954420e-07	2.726979e-07
147	1.070925e-07	-5.807475e-07	1.552767e-07	-3.389296e-07
148	-1.213479e-07	-5.131995e-07	-1.954420e-07	4.110493e-07
149	-9.085632e-08	1.849054e-07	-1.502729e-07	-2.352413e-07
150	-9.954406e-08	1.953168e-08	-1.519744e-07	-3.306805e-07
151	-1.930414e-07	4.825363e-07	-1.328214e-07	-9.834612e-08
152	3.003484e-07	-2.993649e-07	2.907186e-07	1.264878e-06
153	1.807154e-07	-6.361134e-07	3.176653e-08	-1.338378e-07
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155	2.487998e-07	-9.418831e-07	-1.658585e-07	-2.352413e-07
156	2.316801e-07	-9.324268e-07	-1.658585e-07	-2.352413e-07
157	2.487998e-07	-9.418831e-07	-1.658585e-07	-2.352413e-07
158	2.316801e-07	-9.324268e-07	-1.658585e-07	-2.352413e-07
159	-9.085632e-08	2.974618e-07	-1.924790e-07	-2.874198e-07
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161	-1.698864e-07	3.308575e-07	-1.502729e-07	2.044902e-07
162	-1.399430e-07	3.308575e-07	-2.021188e-07	2.726979e-07
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164	3.693124e-07	-8.646085e-07	-1.472881e-08	-1.695273e-07
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166	-3.700497e-08	-6.030279e-07	-1.746153e-07	2.274022e-07
167	3.620130e-08	-6.579190e-07	-9.219410e-08	-1.185262e-07
168	1.882786e-08	3.086291e-08	-9.219410e-08	-1.695273e-07
169	-9.954406e-08	7.943340e-09	-2.964760e-08	-2.785347e-07
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171	-2.054800e-07	5.504377e-07	-1.707948e-07	-1.448573e-07
172	-1.832284e-07	3.618707e-07	-1.707948e-07	-6.730916e-09
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174	1.647149e-07	3.086291e-08	-1.746153e-07	-2.352413e-07
175	-1.698864e-07	1.182841e-07	-1.746153e-07	-9.834612e-08
176	5.547624e-08	-5.577426e-08	-1.328214e-07	-1.338378e-07
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197	-7.868431e-09	-1.293885e-07	-1.954420e-07	-2.697296e-07
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209	3.620130e-08	-5.919090e-07	-2.000202e-07	1.545022e-07
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211	-1.930414e-07	3.464295e-07	-1.422578e-07	-2.557486e-08
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222	9.908174e-09	-3.328410e-07	-1.129120e-07	3.186201e-07
223	-1.930414e-07	5.040945e-07	-1.929095e-08	-2.352413e-07
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225	-7.868431e-09	-1.293885e-07	-1.544241e-07	-4.708504e-08
226	2.487998e-07	-2.312843e-07	-1.817031e-07	-1.695273e-07
227	2.144871e-07	-4.340781e-07	-1.966464e-07	5.725802e-07
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236	-3.700497e-08	7.962269e-08	-1.944748e-07	-1.695273e-07
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243	2.316801e-07	-7.430519e-07	-1.022695e-07	4.802745e-07
244	-1.213479e-07	2.618465e-07	3.911599e-07	5.033506e-07
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249	-1.399430e-07	6.725385e-08	-1.817031e-07	-1.338378e-07
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278	-2.054800e-07	2.797899e-07	2.907186e-07	1.279405e-08
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281	-1.832284e-07	3.464295e-07	6.950582e-08	3.879697e-07
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323	-1.832284e-07	3.618707e-07	-1.623266e-07	-6.730916e-09
324	3.520728e-07	-3.440265e-07	1.565042e-07	1.279405e-08
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326	-6.146904e-08	-6.672605e-08	7.105265e-07	2.955078e-07
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328	-1.930414e-07	4.430114e-07	-5.768307e-08	1.279405e-08
329	-1.832284e-07	3.145656e-07	4.244768e-07	2.955078e-07
330	-1.698864e-07	4.084411e-07	-3.614755e-08	2.501031e-07
331	-1.213479e-07	4.163321e-08	-5.768307e-08	1.322413e-07
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333	1.070925e-07	-7.946220e-07	-1.658585e-07	1.545022e-07
334	9.908174e-09	7.943340e-09	-1.328214e-07	3.648722e-07
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339	2.316801e-07	-6.361134e-07	5.567482e-07	2.955078e-07
340	-9.085632e-08	1.930174e-07	3.130824e-07	4.110493e-07
341	-1.213479e-07	3.145656e-07	3.800436e-07	3.879697e-07
342	-1.930414e-07	3.618707e-07	-1.707948e-07	1.803522e-07
343	-1.832284e-07	4.249879e-07	-1.472881e-08	-2.557486e-08
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346	4.382575e-07	-2.312843e-07	-7.790100e-08	-3.854323e-07
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348	-1.832284e-07	4.084411e-07	6.950582e-08	6.187336e-07
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355	4.468753e-07	-1.208548e-06	8.512206e-07	9.287626e-08
356	1.882786e-08	1.618087e-07	-7.102618e-08	-3.470507e-07
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359	-1.213479e-07	2.797899e-07	3.800436e-07	3.186201e-07
360	-1.213479e-07	4.163321e-08	6.006848e-07	2.726979e-07
361	-3.700497e-08	-4.340781e-07	-1.658585e-07	2.274022e-07
362	1.070925e-07	-6.672605e-08	-1.472881e-08	-1.695273e-07
363	-1.832284e-07	9.360812e-08	2.010964e-07	5.495035e-07
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365	-1.698864e-07	3.086291e-08	8.643047e-07	5.033506e-07
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369	-7.868431e-09	-3.664783e-07	3.354250e-07	2.501031e-07
370	-1.832284e-07	3.618707e-07	-1.882556e-07	2.044902e-07
371	3.520728e-07	-2.312843e-07	-1.519744e-07	-3.629235e-07
372	-9.954406e-08	2.457254e-07	-1.954545e-07	-6.966524e-08
373	1.972757e-07	-1.988621e-08	-1.954545e-07	-6.966524e-08
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375	-1.832284e-07	-3.332248e-08	6.885581e-07	6.418103e-07
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379	-1.832284e-07	2.618465e-07	1.123147e-07	4.110493e-07
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389	1.484059e-07	-1.035888e-07	-3.614755e-08	-2.438294e-07
390	9.908174e-09	-5.577426e-08	-1.472881e-08	2.274022e-07

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393	-1.832284e-07	2.291578e-07	-5.768307e-08	2.501031e-07
394	-6.146904e-08	-5.919090e-07	-1.836767e-07	2.955078e-07
395	-1.832284e-07	2.457254e-07	3.130824e-07	5.956568e-07
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400	-1.399430e-07	3.086291e-08	-1.910370e-07	4.341244e-07
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424	-1.832284e-07	2.618465e-07	-9.902321e-08	3.186201e-07
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438	-1.832284e-07	2.974618e-07	6.950582e-08	2.726979e-07
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441	-1.832284e-07	1.930174e-07	9.067444e-08	9.418056e-07
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444	-9.954406e-08	3.464295e-07	-1.910370e-07	1.322413e-07
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446	-1.832284e-07	1.751580e-07	6.950582e-08	1.322413e-07
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448	-1.832284e-07	3.927916e-07	-1.954420e-07	1.545022e-07
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456	-1.832284e-07	3.464295e-07	1.123147e-07	1.545022e-07
457	-1.930414e-07	2.974618e-07	6.950582e-08	-1.695273e-07
458	2.487998e-07	-2.547070e-07	1.123147e-07	1.279405e-08
459	-1.930414e-07	2.974618e-07	3.354250e-07	6.892044e-08
460	-1.213479e-07	-3.332248e-08	5.567482e-07	9.287626e-08
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465	-1.930414e-07	4.084411e-07	9.067444e-08	7.110400e-07
466	-1.213479e-07	2.291578e-07	5.128116e-07	-2.874198e-07
467	1.070925e-07	-7.806793e-08	-1.472881e-08	2.955078e-07
468	-1.698864e-07	3.618707e-07	9.326681e-08	-6.966524e-08
469	-1.832284e-07	3.145656e-07	3.800436e-07	2.726979e-07
470	3.693124e-07	-4.430220e-08	-9.001783e-09	2.044902e-07
471	-7.868431e-09	-3.332248e-08	2.907186e-07	5.495035e-07
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475	-1.213479e-07	2.618465e-07	-1.472881e-08	2.044902e-07
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479	-1.930414e-07	2.015588e-07	1.123147e-07	3.417597e-07
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483	-1.832284e-07	3.618707e-07	6.950582e-08	5.725802e-07
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488	-1.930414e-07	4.249879e-07	-1.472881e-08	2.726979e-07
489	3.520728e-07	-2.771039e-07	4.244768e-07	-6.966524e-08
490	-1.213479e-07	2.291578e-07	2.751498e-08	-1.185262e-07
491	1.647149e-07	-1.430389e-07	2.751498e-08	-4.708504e-08
492	-9.085632e-08	2.457254e-07	-9.001783e-09	-1.185262e-07
493	-6.146904e-08	2.145641e-07	3.176653e-08	-6.966524e-08
494	1.484059e-07	-4.340781e-07	4.244768e-07	-2.874198e-07
495	2.316801e-07	-5.470520e-07	-9.001783e-09	-2.524416e-07
496	-1.930414e-07	3.927916e-07	-1.707948e-07	3.186201e-07
497	-3.700497e-08	7.962269e-08	2.751498e-08	-2.438294e-07
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502	4.037874e-07	-3.777268e-07	1.565042e-07	2.726979e-07
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504	-1.832284e-07	2.618465e-07	-1.417024e-07	2.501031e-07
505	-1.832284e-07	2.974618e-07	-1.417024e-07	1.803522e-07
506	-1.213479e-07	2.291578e-07	-1.954420e-07	2.955078e-07
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508	-1.832284e-07	4.430114e-07	3.800436e-07	2.726979e-07
509	1.972757e-07	-2.192878e-07	2.458992e-07	2.501031e-07
510	1.484059e-07	1.953168e-08	6.950582e-08	5.725802e-07
511	5.547624e-08	1.953168e-08	-9.902321e-08	6.187336e-07
512	1.972757e-07	-2.192878e-07	2.458992e-07	2.501031e-07
513	-7.868431e-09	-5.577426e-08	-5.768307e-08	5.956568e-07
514	-1.832284e-07	4.084411e-07	-1.658585e-07	4.571992e-07
515	-1.832284e-07	4.084411e-07	-1.658585e-07	4.571992e-07
516	3.348322e-07	-1.106242e-06	6.006848e-07	-4.708504e-08
517	-1.930414e-07	4.249879e-07	6.006848e-07	9.287626e-08
518	-1.930414e-07	3.927916e-07	2.458992e-07	2.955078e-07
519	-9.954406e-08	1.618087e-07	-1.707948e-07	1.545022e-07
520	4.210228e-07	-7.115445e-07	-2.000202e-07	-1.448573e-07
521	-7.868431e-09	1.463590e-07	-1.472881e-08	-2.352413e-07
522	9.908174e-09	1.953168e-08	-5.768307e-08	-2.874198e-07
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524	4.037874e-07	-1.040473e-06	-9.902321e-08	1.545022e-07
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526	2.487998e-07	-1.035888e-07	3.354250e-07	1.129875e-07
527	4.210228e-07	-7.115445e-07	-2.000202e-07	-1.448573e-07
528	3.175905e-07	-4.791916e-07	-1.882556e-07	-2.013010e-07
529	3.003484e-07	-1.293885e-07	1.123147e-07	-1.185262e-07
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531	-2.519912e-07	2.015588e-07	1.565042e-07	-2.267532e-07
532	-9.085632e-08	3.086291e-08	4.687920e-07	2.955078e-07
533	-9.085632e-08	3.086291e-08	4.687920e-07	2.955078e-07
534	-7.868431e-09	1.463590e-07	-9.219410e-08	1.545022e-07
535	-6.146904e-08	1.618087e-07	3.800436e-07	1.279405e-08
536	-2.519912e-07	2.015588e-07	1.565042e-07	-2.267532e-07
537	-1.832284e-07	1.463590e-07	-1.579996e-07	4.571992e-07
538	-1.930414e-07	4.430114e-07	-1.707948e-07	-1.695273e-07
539	-1.930414e-07	1.182841e-07	6.885581e-07	2.044902e-07
540	-1.930414e-07	3.773327e-07	2.907186e-07	1.545022e-07
541	8.094568e-08	-3.332248e-08	1.123147e-07	6.892044e-08
542	-1.930414e-07	3.773327e-07	1.123147e-07	1.803522e-07
543	-1.930414e-07	3.308575e-07	-2.000202e-07	3.879697e-07
544	9.908174e-09	-1.035888e-07	2.234732e-07	5.264270e-07
545	-1.832284e-07	4.084411e-07	5.567482e-07	9.879587e-07
546	4.037874e-07	-7.115445e-07	-1.472881e-08	4.802745e-07
547	-1.213479e-07	2.015588e-07	6.574152e-09	-2.610590e-07
548	-1.832284e-07	3.145656e-07	9.067444e-08	6.892044e-08
549	2.144871e-07	-2.993649e-07	2.458992e-07	3.879697e-07
550	-1.832284e-07	2.457254e-07	-1.519744e-07	3.813585e-08
551	-1.399430e-07	2.457254e-07	-1.328214e-07	-9.834612e-08
552	-3.700497e-08	-5.532650e-09	-5.768307e-08	2.274022e-07
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555	-1.213479e-07	2.797899e-07	1.073004e-06	8.494994e-07
556	-1.213479e-07	2.797899e-07	1.073004e-06	8.494994e-07
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558	-1.213479e-07	2.797899e-07	1.073004e-06	8.494994e-07
559	-1.213479e-07	3.773327e-07	4.244768e-07	5.033506e-07
560	-1.832284e-07	-3.332248e-08	8.423364e-07	-2.557486e-08
561	-1.930414e-07	3.464295e-07	2.458992e-07	3.417597e-07
562	1.972757e-07	-8.646085e-07	-9.902321e-08	1.322413e-07
563	4.554895e-07	-7.534777e-07	-1.472881e-08	4.802745e-07
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567	-1.930414e-07	4.084411e-07	1.787815e-07	-6.966524e-08
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569	-1.930414e-07	3.308575e-07	1.565042e-07	-4.708504e-08
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576	2.316801e-07	-1.988621e-08	2.234732e-07	2.044902e-07
577	-1.832284e-07	4.249879e-07	-9.902321e-08	-1.185262e-07
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581	-1.930414e-07	4.249879e-07	4.244768e-07	2.274022e-07
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583	-1.930414e-07	4.084411e-07	3.800436e-07	2.274022e-07
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585	6.794588e-07	-4.228186e-07	4.244768e-07	-2.557486e-08
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588	3.620130e-08	-6.687566e-07	-1.954545e-07	6.892044e-08
589	5.547624e-08	-6.672605e-08	7.405961e-07	-4.575676e-07
590	-1.930414e-07	4.430114e-07	-1.417024e-07	5.495035e-07
591	1.070925e-07	-3.664783e-07	9.067444e-08	-1.338378e-07
592	1.484059e-07	-1.091626e-06	6.299716e-07	3.879697e-07
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594	-1.399430e-07	1.953168e-08	4.687920e-07	-6.730916e-09
595	8.094568e-08	7.962269e-08	-9.902321e-08	-2.162206e-07
596	2.659212e-07	-7.430519e-07	3.354250e-07	3.813585e-08
597	-1.832284e-07	2.618465e-07	2.458992e-07	5.725802e-07
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599	-1.930414e-07	1.849054e-07	-1.954545e-07	2.044902e-07
600	-9.954406e-08	2.974618e-07	3.800436e-07	6.648868e-07
601	-1.698864e-07	2.797899e-07	-1.882556e-07	6.892044e-08
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603	-1.832284e-07	4.249879e-07	-1.519744e-07	-2.557486e-08
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607	-1.213479e-07	3.308575e-07	-1.658585e-07	-1.185262e-07
608	1.972757e-07	-9.052807e-08	-1.472881e-08	-4.708504e-08
609	-9.954406e-08	-2.547070e-07	9.521780e-07	-6.966524e-08
610	-7.868431e-09	6.725385e-08	-9.219410e-08	-3.550478e-07
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612	-1.930414e-07	3.927916e-07	5.128116e-07	7.110400e-07
613	3.620130e-08	1.930174e-07	-2.021188e-07	-6.966524e-08
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622	-3.700497e-08	-6.902724e-07	-1.417024e-07	1.279405e-08
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624	1.070925e-07	-5.532650e-09	-1.579996e-07	-2.962637e-07
625	1.070925e-07	-1.694319e-07	3.130824e-07	-2.697296e-07
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627	-1.930414e-07	4.084411e-07	1.123147e-07	-1.448573e-07
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636	1.647149e-07	1.463590e-07	-5.037284e-08	3.813585e-08
637	2.659212e-07	-1.077011e-06	-7.790100e-08	1.129875e-07
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641	9.908174e-09	5.415023e-08	1.787815e-07	-2.013010e-07
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647	-1.832284e-07	3.308575e-07	-1.707948e-07	-2.162206e-07
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653	1.289502e-07	-3.216715e-07	-1.417024e-07	7.110400e-07
654	-1.399430e-07	1.849054e-07	-1.417024e-07	3.879697e-07
655	-1.698864e-07	1.930174e-07	-7.790100e-08	4.802745e-07
656	8.094568e-08	-1.035888e-07	4.687920e-07	3.417597e-07
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660	-1.930414e-07	4.430114e-07	-1.836767e-07	-2.267532e-07

661	-1.930414e-07	3.308575e-07	-1.658585e-07	-6.966524e-08
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668	-1.832284e-07	4.084411e-07	1.123147e-07	8.033462e-07
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676	-9.085632e-08	1.751580e-07	2.751498e-08	6.892044e-08
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679	5.244032e-07	-5.018471e-07	6.574152e-09	-2.874198e-07
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681	-7.868431e-09	5.415023e-08	4.687920e-07	5.264270e-07
682	9.908174e-09	1.930174e-07	-1.882556e-07	1.803522e-07
683	3.003484e-07	-1.694319e-07	-5.768307e-08	-9.834612e-08
684	-1.930414e-07	4.084411e-07	-1.836767e-07	-1.695273e-07
685	3.520728e-07	-1.113549e-06	-5.768307e-08	9.287626e-08
686	-1.930414e-07	4.084411e-07	-1.836767e-07	-1.695273e-07
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690	-1.930414e-07	3.773327e-07	-1.417024e-07	-2.557486e-08
691	-1.930414e-07	4.249879e-07	-2.000202e-07	-4.058870e-07
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694	1.070925e-07	-8.744541e-07	2.751498e-08	-6.966524e-08
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704	1.289502e-07	-4.679055e-07	-1.707948e-07	-6.966524e-08
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708	9.908174e-09	9.360812e-08	-2.000202e-07	-1.695273e-07
709	-9.954406e-08	1.182841e-07	-1.622284e-07	-1.185262e-07
710	-6.146904e-08	1.463590e-07	6.574152e-09	3.813585e-08
711	1.070925e-07	-4.679055e-07	4.844129e-08	5.264270e-07
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713	-6.146904e-08	1.463590e-07	2.010964e-07	-1.448573e-07
714	-1.213479e-07	-4.430220e-08	-1.417024e-07	-1.185262e-07
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717	-1.213479e-07	-4.430220e-08	-1.417024e-07	-1.185262e-07
718	-9.085632e-08	-5.577426e-08	-1.954420e-07	1.803522e-07
719	-1.213479e-07	2.974618e-07	-1.417024e-07	1.545022e-07
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726	-1.930414e-07	4.430114e-07	-1.417024e-07	-6.730916e-09
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733	-1.213479e-07	3.464295e-07	-2.000202e-07	-2.013010e-07
734	9.908174e-09	-3.328410e-07	-5.768307e-08	-3.470507e-07
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736	-9.954406e-08	2.974618e-07	-1.910370e-07	6.892044e-08
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738	5.547624e-08	-1.694319e-07	4.244768e-07	-3.050671e-07
739	2.316801e-07	-6.902724e-07	6.574152e-09	4.341244e-07
740	5.547624e-08	7.962269e-08	1.565042e-07	-1.338378e-07
741	-9.085632e-08	3.927916e-07	-2.021188e-07	-2.610590e-07
742	2.316801e-07	-1.018550e-06	-8.170717e-08	1.803522e-07
743	-1.399430e-07	3.618707e-07	-1.707948e-07	-2.697296e-07
744	1.807154e-07	-6.579190e-07	4.333764e-07	3.648722e-07
745	1.070925e-07	-6.579190e-07	4.022714e-07	3.648722e-07
746	-9.085632e-08	2.015588e-07	-1.255573e-07	-3.223068e-07
747	-9.085632e-08	-1.564112e-07	-9.902321e-08	-2.557486e-08
748	9.908174e-09	-2.882292e-07	-9.472737e-08	-2.557486e-08
749	-9.085632e-08	1.751580e-07	-1.416214e-07	-3.223068e-07
750	-9.085632e-08	2.015588e-07	-1.255573e-07	-3.223068e-07

751	1.882786e-08	5.415023e-08	-5.119535e-08	-6.730916e-09
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753	1.647149e-07	-2.659934e-07	-8.824121e-08	-2.013010e-07
754	1.882786e-08	5.415023e-08	-5.119535e-08	-6.730916e-09
755	-3.700497e-08	1.618087e-07	-2.018274e-07	4.571992e-07
756	1.289502e-07	-3.332248e-08	-1.929095e-08	-3.137590e-07
757	-7.868431e-09	1.463590e-07	5.634043e-08	-3.854323e-07
758	-1.213479e-07	1.751580e-07	-2.018274e-07	9.287626e-08
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760	3.175905e-07	-5.131995e-07	-8.282539e-09	2.274022e-07
761	-1.399430e-07	-6.902724e-07	-1.006518e-07	1.322413e-07
762	-1.930414e-07	1.182841e-07	-1.597941e-07	9.287626e-08
763	-1.574159e-07	3.464295e-07	-1.823097e-07	-4.708504e-08
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765	-9.954406e-08	7.943340e-09	1.299271e-07	-4.708504e-08
766	-9.085632e-08	-4.430220e-08	1.299271e-07	-4.708504e-08
767	-9.085632e-08	-3.552429e-07	-1.597941e-07	3.417597e-07
768	-6.146904e-08	-6.251452e-07	2.414229e-07	-2.610590e-07
769	1.647149e-07	-5.807475e-07	-1.551684e-07	-3.470507e-07
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774	-2.519912e-07	7.943340e-09	-1.658585e-07	-2.557486e-08
775	-2.361180e-07	-5.532650e-09	-1.681778e-07	-4.708504e-08
776	-1.698864e-07	3.927916e-07	-1.438269e-07	-2.438294e-07
777	-1.881220e-07	-4.430220e-08	-1.773394e-07	-2.162206e-07
778	-1.832284e-07	3.618707e-07	-1.746153e-07	-2.162206e-07
779	-1.698864e-07	1.319187e-07	-8.170717e-08	-1.448573e-07
780	1.070925e-07	-5.583110e-07	-1.544241e-07	-3.050671e-07
781	-9.085632e-08	-5.532650e-09	-1.944961e-07	-4.708504e-08
782	-1.399430e-07	9.360812e-08	-1.644518e-07	-4.231139e-07
783	1.972757e-07	-6.030279e-07	-2.759234e-08	-1.448573e-07
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785	8.094568e-08	-4.791916e-07	-1.540673e-07	-3.470507e-07
786	-9.954406e-08	-2.070732e-07	-1.472881e-08	1.803522e-07
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788	5.547624e-08	-1.694319e-07	1.787815e-07	2.501031e-07
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791	3.620130e-08	-4.453450e-07	-1.771975e-07	-9.834612e-08
792	1.807154e-07	-9.518982e-07	-1.903422e-08	1.322413e-07
793	1.882786e-08	-5.018471e-07	-1.544241e-07	-2.874198e-07
794	-1.698864e-07	4.430114e-07	-1.962751e-07	-1.879023e-07
795	-1.698864e-07	2.291578e-07	-3.172210e-08	2.726979e-07

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798	1.070925e-07	3.086291e-08	-2.135975e-08	1.129875e-07
799	-1.930414e-07	4.249879e-07	9.067444e-08	-6.730916e-09
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801	1.972757e-07	-7.325857e-07	-1.976926e-07	9.287626e-08
802	-1.574159e-07	3.773327e-07	-1.623266e-07	1.322413e-07
803	-3.700497e-08	-4.905108e-07	5.326221e-07	-3.550478e-07
804	-3.700497e-08	-1.988621e-08	-1.761979e-07	1.129875e-07
805	-2.054800e-07	3.618707e-07	-1.963102e-07	6.892044e-08
806	-2.054800e-07	5.040945e-07	3.319545e-07	-9.834612e-08
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810	-2.054800e-07	4.084411e-07	-1.905649e-07	1.545022e-07
811	-2.054800e-07	4.249879e-07	-9.615105e-08	-2.557486e-08
812	-1.698864e-07	2.618465e-07	4.067154e-07	4.571992e-07
813	8.094568e-08	7.962269e-08	-1.903422e-08	1.129875e-07
814	-2.054800e-07	5.736400e-07	1.097596e-07	-2.524416e-07
815	5.547624e-08	4.163321e-08	2.436659e-07	1.803522e-07
816	8.094568e-08	7.962269e-08	-1.903422e-08	1.129875e-07
817	-1.574159e-07	1.849054e-07	2.751498e-08	1.322413e-07
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819	1.070925e-07	-3.332248e-08	-1.918967e-07	-6.730916e-09
820	-1.399430e-07	-1.821525e-07	3.264888e-07	1.279405e-08
821	-1.399430e-07	2.974618e-07	-1.695434e-07	-1.185262e-07
822	9.908174e-09	3.086291e-08	7.759959e-07	-4.518253e-07
823	-7.868431e-09	1.059504e-07	-1.658585e-07	-3.931116e-07
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825	-1.832284e-07	3.927916e-07	-1.963102e-07	1.129875e-07
826	-7.868431e-09	9.360812e-08	-1.902900e-07	-1.448573e-07
827	-2.054800e-07	5.504377e-07	1.143040e-08	-2.162206e-07
828	-7.868431e-09	9.360812e-08	-1.902900e-07	-1.448573e-07
829	3.348322e-07	-5.532650e-09	2.031103e-07	-2.697296e-07
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836	2.144871e-07	-1.293885e-07	-2.020797e-07	-2.013010e-07
837	3.693124e-07	-6.470405e-07	9.751200e-07	6.892044e-08
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839	-1.399430e-07	2.015588e-07	-1.949763e-07	1.129875e-07
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841	-1.399430e-07	1.319187e-07	-1.616781e-07	1.129875e-07
842	1.070925e-07	1.751580e-07	-1.902586e-07	-2.610590e-07
843	3.348322e-07	-2.882292e-07	-1.771975e-07	1.322413e-07
844	-1.399430e-07	-5.583110e-07	-1.910370e-07	1.279405e-08
845	1.972757e-07	3.086291e-08	-1.502729e-07	2.501031e-07
846	-3.700497e-08	1.751580e-07	-1.930783e-07	-3.780903e-07
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848	-9.085632e-08	6.725385e-08	-1.210030e-07	-3.050671e-07
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850	-9.085632e-08	1.618087e-07	-1.930783e-07	-3.705868e-07
851	-1.399430e-07	2.974618e-07	-1.771975e-07	1.279405e-08
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853	1.972757e-07	-8.744541e-07	-5.551103e-08	1.545022e-07
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856	-1.213479e-07	4.249879e-07	-4.623092e-08	-3.137590e-07
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858	9.908174e-09	-3.332248e-08	-1.552515e-07	-2.162206e-07
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862	-7.868431e-09	-5.131995e-07	3.298162e-07	-4.231139e-07
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867	-6.146904e-08	2.618465e-07	1.593876e-07	-2.267532e-07
868	-6.146904e-08	2.974618e-07	1.593876e-07	-2.162206e-07
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870	2.144871e-07	1.953168e-08	-1.291274e-07	-2.524416e-07
871	2.831093e-07	1.953168e-08	3.000134e-07	-2.267532e-07
872	3.693124e-07	-1.988621e-08	-1.310632e-08	-3.306805e-07
873	2.316801e-07	-4.430220e-08	-1.251517e-07	-2.438294e-07
874	-1.832284e-07	5.040945e-07	-7.529413e-08	1.322413e-07
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876	-1.698864e-07	3.927916e-07	-1.802635e-07	-4.708504e-08
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880	3.620130e-08	-5.131995e-07	-1.544241e-07	-3.306805e-07
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882	2.659212e-07	1.182841e-07	-3.587206e-08	-2.874198e-07
883	-3.700497e-08	2.291578e-07	-4.209040e-08	1.545022e-07
884	3.620130e-08	-5.131995e-07	-1.544241e-07	-3.306805e-07
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888	2.487998e-07	-1.430389e-07	-1.271660e-07	3.186201e-07
889	3.003484e-07	-2.429637e-07	5.022336e-08	-2.438294e-07
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891	2.659212e-07	-9.052807e-08	-1.251517e-07	-2.524416e-07
892	9.908174e-09	-4.905108e-07	-1.558012e-07	-3.306805e-07
893	-1.213479e-07	3.618707e-07	-1.119677e-07	1.545022e-07
894	9.908174e-09	-4.905108e-07	-1.558012e-07	-3.306805e-07
895	1.882786e-08	-5.131995e-07	-1.544241e-07	-3.306805e-07
896	2.144871e-07	1.953168e-08	-7.102618e-08	-2.352413e-07
897	1.882786e-08	1.953168e-08	1.470011e-07	-4.708504e-08
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901	-1.213479e-07	6.725385e-08	-9.615105e-08	-2.162206e-07
902	9.908174e-09	1.463590e-07	-1.616781e-07	-3.705868e-07
903	9.908174e-09	1.463590e-07	-1.616781e-07	-3.705868e-07
904	-9.954406e-08	3.618707e-07	-1.882556e-07	-2.267532e-07
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906	-7.868431e-09	-8.047582e-07	-5.768307e-08	1.322413e-07
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908	-1.832284e-07	5.272354e-07	7.273534e-08	-3.780903e-07
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912	-2.201356e-07	5.272354e-07	1.587263e-07	2.501031e-07
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919	3.003484e-07	-4.115419e-07	-1.966464e-07	-2.557486e-08
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921	-1.213479e-07	2.797899e-07	-8.603233e-08	1.129875e-07
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925	-3.700497e-08	2.015588e-07	-8.055206e-10	2.501031e-07
926	6.622304e-07	-3.889907e-07	-1.671133e-07	-2.785347e-07
927	6.450020e-07	-3.440265e-07	-8.603233e-08	-2.785347e-07
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929	-3.700497e-08	2.015588e-07	-8.055206e-10	2.501031e-07
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931	-1.574159e-07	2.457254e-07	-1.540673e-07	-4.403407e-07
932	-6.146904e-08	7.962269e-08	-1.531068e-07	-2.874198e-07
933	2.487998e-07	-2.659934e-07	-1.761979e-07	-2.610590e-07
934	-6.146904e-08	7.962269e-08	-1.531068e-07	-2.874198e-07
935	-1.574159e-07	2.457254e-07	-1.540673e-07	-4.403407e-07
936	5.547624e-08	-3.328410e-07	-5.659913e-08	-2.013010e-07
937	5.547624e-08	-3.328410e-07	-5.659913e-08	-2.013010e-07
938	-1.832284e-07	2.291578e-07	-7.606593e-08	5.033506e-07
939	1.484059e-07	3.086291e-08	3.319545e-07	-1.185262e-07
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942	-1.399430e-07	3.773327e-07	6.455194e-08	2.274022e-07
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1143	-1.832284e-07	4.622601e-07	3.362294e-07	-2.557486e-08
1144	9.908174e-09	3.308575e-07	-1.949763e-07	-3.931116e-07
1145	3.520728e-07	-3.105106e-07	-1.472031e-07	-2.438294e-07
1146	2.831093e-07	-7.806793e-08	-1.949763e-07	-3.306805e-07
1147	-1.832284e-07	3.145656e-07	-1.622284e-07	1.279405e-08
1148	-1.832284e-07	4.249879e-07	-1.812445e-07	1.803522e-07
1149	-1.399430e-07	3.145656e-07	-2.135975e-08	-2.013010e-07
1150	-1.832284e-07	4.825363e-07	-1.422578e-07	1.322413e-07
1151	-2.054800e-07	4.622601e-07	8.708241e-08	-2.557486e-08
1152	9.908174e-09	-3.105106e-07	3.405036e-07	-2.697296e-07
1153	-1.399430e-07	7.962269e-08	-1.828119e-07	3.186201e-07
1154	1.882786e-08	7.962269e-08	-1.898171e-07	1.322413e-07
1155	6.105452e-07	-2.312843e-07	-5.867499e-08	-3.780903e-07

1156	-1.399430e-07	7.962269e-08	-1.828119e-07	3.186201e-07
1157	5.244032e-07	-5.131995e-07	-1.722507e-08	-9.834612e-08
1158	9.908174e-09	-6.579190e-07	5.857218e-07	-2.697296e-07
1159	1.289502e-07	-1.162420e-07	-1.172396e-07	-2.352413e-07
1160	-9.954406e-08	9.360812e-08	-1.675342e-07	2.955078e-07
1161	-1.832284e-07	3.308575e-07	-1.944961e-07	3.417597e-07
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1163	-9.085632e-08	3.464295e-07	1.676768e-07	3.417597e-07
1164	-1.213479e-07	3.145656e-07	-1.914739e-07	-6.730916e-09
1165	-1.213479e-07	3.145656e-07	-1.914739e-07	-6.730916e-09
1166	-7.868431e-09	7.962269e-08	-1.928655e-07	6.418103e-07
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1170	-1.930414e-07	4.249879e-07	2.768304e-08	-6.966524e-08
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1172	1.972757e-07	7.943340e-09	-1.310632e-08	-2.352413e-07
1173	-1.930414e-07	3.927916e-07	-2.019298e-07	3.813585e-08
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1175	1.972757e-07	-2.547070e-07	-1.724418e-07	-2.697296e-07
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1182	-1.930414e-07	4.825363e-07	7.680657e-08	2.274022e-07
1183	4.554895e-07	-1.162420e-07	-1.491172e-07	-1.879023e-07
1184	9.908174e-09	-2.070732e-07	-1.172396e-07	-6.730916e-09
1185	-9.954406e-08	-8.449059e-07	-4.623092e-08	-1.448573e-07
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1187	-1.832284e-07	4.622601e-07	-1.910370e-07	-3.223068e-07
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1193	-9.954406e-08	4.163321e-08	1.573392e-07	-3.223068e-07
1194	-1.832284e-07	4.622601e-07	-7.312691e-08	-3.550478e-07
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1196	1.070925e-07	-1.430389e-07	-1.923635e-07	-3.223068e-07
1197	1.484059e-07	-5.807475e-07	-1.953483e-07	1.803522e-07
1198	-2.054800e-07	5.272354e-07	1.180551e-07	2.955078e-07
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1203	-1.832284e-07	4.622601e-07	-8.055206e-10	-1.338378e-07
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1206	1.647149e-07	7.943340e-09	-3.794393e-08	-2.162206e-07
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1216	8.094568e-08	1.930174e-07	5.634043e-08	6.892044e-08
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1218	4.899463e-07	-3.552429e-07	2.219762e-07	1.322413e-07
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1225	-1.574159e-07	3.308575e-07	2.010964e-07	5.033506e-07
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1227	2.144871e-07	-1.988621e-08	-1.528274e-07	6.187336e-07
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1247	-7.868431e-09	-4.430220e-08	2.768304e-08	3.879697e-07
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1266	9.908174e-09	1.059504e-07	-1.002200e-07	-1.879023e-07
1267	9.908174e-09	1.059504e-07	-1.002200e-07	-1.879023e-07
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1272	1.647149e-07	-2.429637e-07	3.447840e-07	-1.879023e-07
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1285	3.620130e-08	1.059504e-07	8.091675e-08	-2.013010e-07
1286	8.094568e-08	-3.332248e-08	-1.628317e-07	3.186201e-07
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1311	1.647149e-07	-5.131995e-07	-1.773394e-07	-2.557486e-08
1312	-9.085632e-08	2.145641e-07	4.750973e-07	-9.834612e-08
1313	-3.700497e-08	4.163321e-08	-3.379679e-08	-1.185262e-07
1314	8.094568e-08	-2.547070e-07	-8.812983e-08	-2.162206e-07
1315	1.647149e-07	-2.993649e-07	-8.386094e-08	-2.162206e-07
1316	1.882786e-08	-5.470520e-07	-1.828119e-07	6.892044e-08
1317	9.908174e-09	-1.988621e-08	5.458970e-07	-6.240939e-07
1318	-1.213479e-07	4.163321e-08	-1.955002e-07	2.501031e-07
1319	1.882786e-08	-5.470520e-07	-1.828119e-07	6.892044e-08
1320	3.620130e-08	-2.429637e-07	-2.023634e-07	8.956525e-07
1321	-9.085632e-08	-5.131995e-07	-6.595057e-08	6.892044e-08
1322	9.908174e-09	-1.988621e-08	5.458970e-07	-6.240939e-07
1323	-1.399430e-07	3.618707e-07	2.556277e-07	2.501031e-07
1324	1.070925e-07	-1.293885e-07	4.200044e-08	2.501031e-07
1325	3.620130e-08	1.319187e-07	7.273534e-08	-2.013010e-07
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1327	3.620130e-08	1.319187e-07	7.273534e-08	-2.013010e-07
1328	3.620130e-08	1.319187e-07	7.273534e-08	-2.013010e-07
1329	-6.146904e-08	7.962269e-08	-7.102618e-08	-1.185262e-07
1330	1.882786e-08	-5.470520e-07	-1.828119e-07	-6.730916e-09
1331	1.882786e-08	-5.470520e-07	-1.828119e-07	-6.730916e-09
1332	2.831093e-07	-2.771039e-07	-1.956225e-07	6.892044e-08
1333	-1.832284e-07	2.457254e-07	-1.347270e-07	4.571992e-07
1334	-9.085632e-08	-4.430220e-08	-1.417024e-07	2.501031e-07
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1336	5.547624e-08	5.415023e-08	2.661697e-07	-1.879023e-07
1337	-7.868431e-09	2.291578e-07	1.387235e-07	-1.448573e-07
1338	-7.868431e-09	2.291578e-07	1.387235e-07	-1.448573e-07
1339	-7.868431e-09	2.291578e-07	1.387235e-07	-1.448573e-07
1340	-6.146904e-08	1.751580e-07	-4.623092e-08	-1.448573e-07
1341	-6.146904e-08	1.751580e-07	-4.623092e-08	-1.448573e-07
1342	-6.146904e-08	1.751580e-07	-4.623092e-08	-1.448573e-07
1343	1.882786e-08	1.751580e-07	-1.487949e-07	-1.695273e-07
1344	-6.146904e-08	1.751580e-07	-4.623092e-08	-1.448573e-07
1345	-1.574159e-07	3.308575e-07	5.263592e-08	4.571992e-07
1346	-1.213479e-07	2.015588e-07	-1.787720e-07	9.287626e-08
1347	-1.930414e-07	4.430114e-07	8.913919e-08	-3.223068e-07
1348	-1.698864e-07	4.622601e-07	-1.454841e-07	-1.185262e-07
1349	-1.698864e-07	4.622601e-07	-1.454841e-07	-1.185262e-07
1350	1.070925e-07	4.163321e-08	-4.897432e-09	-2.267532e-07
1351	3.003484e-07	-3.440265e-07	-2.023278e-07	-1.185262e-07
1352	-1.574159e-07	-1.988621e-08	3.834483e-07	-6.966524e-08
1353	-3.700497e-08	-1.564112e-07	-1.924790e-07	-1.695273e-07
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1355	-1.698864e-07	2.015588e-07	-1.086212e-07	-1.338378e-07
1356	-1.930414e-07	1.618087e-07	1.056292e-07	-1.448573e-07
1357	-2.054800e-07	2.015588e-07	1.056292e-07	-1.448573e-07
1358	2.144871e-07	-2.771039e-07	-2.016412e-07	-3.854323e-07
1359	6.450020e-07	-6.251452e-07	-1.616781e-07	1.279405e-08
1360	-1.832284e-07	2.015588e-07	-1.796949e-07	5.033506e-07
1361	-9.954406e-08	7.962269e-08	-1.843061e-07	1.129875e-07
1362	-6.146904e-08	-1.162420e-07	-1.694288e-07	-1.448573e-07
1363	-1.832284e-07	2.015588e-07	-1.796949e-07	5.033506e-07
1364	-9.954406e-08	-2.312843e-07	-2.023634e-07	-6.730916e-09
1365	-1.213479e-07	1.751580e-07	3.176653e-08	-2.697296e-07
1366	-1.213479e-07	3.086291e-08	-1.761979e-07	2.501031e-07
1367	-1.213479e-07	-5.532650e-09	-1.251517e-07	1.129875e-07
1368	-1.399430e-07	-7.009158e-07	-1.690281e-07	9.287626e-08
1369	9.908174e-09	-3.552429e-07	-2.018274e-07	3.813585e-08
1370	-2.054800e-07	5.504377e-07	2.472026e-07	-9.834612e-08
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1372	-1.930414e-07	4.249879e-07	8.091675e-08	1.803522e-07
1373	-9.085632e-08	-2.659934e-07	-1.901374e-07	6.648868e-07
1374	3.348322e-07	-5.245099e-07	-1.974252e-07	1.129875e-07
1375	9.908174e-09	1.930174e-07	9.119942e-08	-6.966524e-08
1376	-6.146904e-08	-6.470405e-07	-1.438269e-07	6.892044e-08
1377	-1.698864e-07	1.751580e-07	1.139030e-07	4.110493e-07
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1379	-1.213479e-07	2.015588e-07	-1.731374e-07	-6.730916e-09
1380	-9.954406e-08	1.182841e-07	-8.600808e-08	-1.448573e-07

1381	-9.954406e-08	1.182841e-07	-8.600808e-08	-1.448573e-07
1382	-2.054800e-07	2.457254e-07	-3.794393e-08	-1.879023e-07
1383	1.807154e-07	-7.009158e-07	-1.787720e-07	-2.557486e-08
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1385	8.094568e-08	-4.679055e-07	-1.540844e-07	2.274022e-07
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1387	-1.574159e-07	2.797899e-07	-1.746153e-07	-2.557486e-08
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1389	-1.698864e-07	-5.577426e-08	-1.710996e-07	-1.338378e-07
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1392	-1.930414e-07	1.463590e-07	-1.773394e-07	-1.695273e-07
1393	-1.930414e-07	4.622601e-07	1.968505e-07	2.726979e-07
1394	5.547624e-08	-1.821525e-07	-1.773394e-07	-2.557486e-08
1395	2.144871e-07	-3.440265e-07	-1.955108e-07	-6.966524e-08
1396	-2.201356e-07	4.622601e-07	-1.544241e-07	-4.708504e-08
1397	-2.054800e-07	4.825363e-07	-1.544241e-07	-4.708504e-08
1398	1.882786e-08	-6.902724e-07	-1.405350e-07	1.279405e-08
1399	-6.146904e-08	2.015588e-07	-2.000202e-07	-3.223068e-07
1400	-1.213479e-07	2.618465e-07	-9.219410e-08	-2.352413e-07
1401	3.175905e-07	-1.033165e-06	-1.882556e-07	9.287626e-08
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1403	-1.832284e-07	2.618465e-07	-1.910370e-07	-2.524416e-07
1404	-2.201356e-07	4.430114e-07	-1.622284e-07	1.322413e-07
1405	-9.085632e-08	-1.988621e-08	4.844129e-08	-2.438294e-07
1406	3.620130e-08	1.319187e-07	-9.001783e-09	1.279405e-08
1407	-1.574159e-07	2.974618e-07	-1.579996e-07	1.545022e-07
1408	4.382575e-07	-1.162420e-07	3.176653e-08	-3.389296e-07
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1413	-1.574159e-07	2.974618e-07	-1.579996e-07	1.545022e-07
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1415	-2.201356e-07	4.084411e-07	2.458992e-07	2.044902e-07
1416	-1.574159e-07	3.618707e-07	-2.000202e-07	-3.550478e-07
1417	-2.201356e-07	4.084411e-07	2.458992e-07	2.044902e-07
1418	1.070925e-07	9.360812e-08	-9.001783e-09	-1.338378e-07
1419	-2.201356e-07	3.464295e-07	3.176653e-08	2.955078e-07
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1422	1.647149e-07	-1.694319e-07	-2.021188e-07	-1.185262e-07
1423	4.210228e-07	-1.293885e-07	-9.219410e-08	-2.013010e-07
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1449	4.382575e-07	-1.162420e-07	-1.965713e-07	-2.162206e-07
1450	-7.868431e-09	1.930174e-07	8.913919e-08	1.322413e-07
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1452	-1.574159e-07	3.773327e-07	-1.644518e-07	-9.834612e-08
1453	3.865506e-07	-1.035888e-07	2.936526e-07	-1.338378e-07
1454	2.144871e-07	-4.791916e-07	-1.783621e-07	-2.267532e-07
1455	-1.698864e-07	2.797899e-07	3.220196e-07	1.803522e-07
1456	-1.399430e-07	3.773327e-07	9.944791e-08	-3.050671e-07
1457	4.037874e-07	-5.245099e-07	5.945718e-07	-2.557486e-08
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1460	-1.698864e-07	4.084411e-07	1.180551e-07	-6.966524e-08
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1469	2.831093e-07	-1.162420e-07	-1.675342e-07	-2.557486e-08
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1506	-1.832284e-07	4.622601e-07	-1.622284e-07	-3.470507e-07
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1514	1.882786e-08	-2.547070e-07	4.662584e-07	-9.834612e-08
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1518	2.487998e-07	7.943340e-09	5.430839e-08	-1.879023e-07
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1522	-1.399430e-07	2.797899e-07	-1.422578e-07	-2.013010e-07
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1524	2.487998e-07	-2.070732e-07	-2.964760e-08	-1.185262e-07
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1526	3.620130e-08	1.319187e-07	-7.529413e-08	-9.834612e-08
1527	3.620130e-08	7.962269e-08	-7.747456e-08	-2.557486e-08
1528	-7.868431e-09	2.618465e-07	1.143040e-08	-6.730916e-09
1529	1.070925e-07	-1.821525e-07	-1.739080e-07	-4.708504e-08
1530	4.727179e-07	-9.052807e-08	-1.718807e-07	-2.352413e-07
1531	-1.399430e-07	3.618707e-07	1.470011e-07	-2.352413e-07
1532	-6.146904e-08	2.015588e-07	-1.915743e-07	-3.854323e-07
1533	3.620130e-08	2.974618e-07	-1.192104e-07	1.803522e-07
1534	3.003484e-07	-4.679055e-07	-1.716577e-07	-2.013010e-07
1535	-6.146904e-08	1.930174e-07	2.450976e-07	-2.352413e-07
1536	-7.868431e-09	1.182841e-07	-1.502729e-07	-1.448573e-07
1537	1.647149e-07	-5.532650e-09	-2.550169e-08	-3.854323e-07
1538	8.094568e-08	1.751580e-07	6.455194e-08	-3.050671e-07
1539	-7.868431e-09	2.291578e-07	-4.623092e-08	-3.629235e-07
1540	3.348322e-07	-1.948273e-07	-1.739080e-07	-2.697296e-07
1541	-9.954406e-08	1.618087e-07	-2.008593e-07	-3.550478e-07
1542	5.547624e-08	-5.577426e-08	-1.962545e-07	-2.162206e-07
1543	2.487998e-07	7.962269e-08	8.913919e-08	-2.557486e-08
1544	-3.700497e-08	3.464295e-07	-1.455431e-07	9.287626e-08
1545	-9.085632e-08	3.464295e-07	-7.102618e-08	2.726979e-07
1546	9.908174e-09	2.015588e-07	-3.172210e-08	-1.448573e-07
1547	1.882786e-08	2.291578e-07	-1.231624e-07	-1.448573e-07
1548	-9.085632e-08	2.291578e-07	4.398379e-07	-3.470507e-07
1549	5.547624e-08	-6.672605e-08	-9.250782e-08	4.341244e-07
1550	1.882786e-08	2.618465e-07	1.989344e-07	1.129875e-07
1551	1.882786e-08	2.291578e-07	-9.250782e-08	-2.610590e-07
1552	3.620130e-08	2.145641e-07	-1.255573e-07	-2.524416e-07
1553	3.003484e-07	-1.162420e-07	-1.438269e-07	-3.137590e-07
1554	3.620130e-08	2.015588e-07	-1.326286e-07	-2.267532e-07
1555	-7.868431e-09	2.797899e-07	-1.901196e-07	-3.389296e-07
1556	-7.868431e-09	2.618465e-07	3.282851e-09	-2.524416e-07
1557	-9.085632e-08	3.308575e-07	-1.939773e-07	-3.306805e-07
1558	-7.868431e-09	2.797899e-07	-1.901196e-07	-3.389296e-07
1559	8.861998e-07	-8.047582e-07	-8.382280e-08	1.545022e-07
1560	2.831093e-07	-9.600892e-07	-1.898171e-07	1.803522e-07

1561	2.831093e-07	-9.600892e-07	-1.898171e-07	1.803522e-07
1562	2.831093e-07	-9.600892e-07	-1.898171e-07	1.803522e-07
1563	-9.085632e-08	3.308575e-07	-6.281842e-08	-6.730916e-09
1564	-9.085632e-08	3.308575e-07	-6.281842e-08	-6.730916e-09
1565	-9.085632e-08	3.308575e-07	-6.281842e-08	-6.730916e-09
1566	1.972757e-07	3.086291e-08	5.430839e-08	-2.013010e-07
1567	1.647149e-07	-9.052807e-08	4.406201e-08	-1.185262e-07
1568	-9.085632e-08	3.308575e-07	-6.281842e-08	-6.730916e-09
1569	1.807154e-07	3.086291e-08	-1.902586e-07	-1.185262e-07
1570	-7.868431e-09	1.319187e-07	2.472026e-07	-2.874198e-07
1571	5.547624e-08	1.182841e-07	3.662121e-07	-1.695273e-07
1572	-7.868431e-09	2.457254e-07	3.282851e-09	-2.524416e-07
1573	3.520728e-07	-6.902724e-07	-1.918967e-07	-9.834612e-08
1574	-7.868431e-09	-6.672605e-08	9.944791e-08	-3.705868e-07
1575	1.484059e-07	-5.583110e-07	-1.947502e-07	-2.013010e-07
1576	-9.085632e-08	3.308575e-07	8.502791e-08	6.892044e-08
1577	9.908174e-09	1.930174e-07	-1.472031e-07	-2.557486e-08
1578	-6.146904e-08	2.145641e-07	-1.898171e-07	-3.389296e-07
1579	-6.146904e-08	3.308575e-07	-5.037284e-08	-2.352413e-07
1580	1.647149e-07	1.618087e-07	2.345798e-07	-3.389296e-07
1581	-1.399430e-07	2.291578e-07	9.326681e-08	-1.448573e-07
1582	1.647149e-07	1.618087e-07	2.345798e-07	-3.389296e-07
1583	-6.146904e-08	2.145641e-07	3.191275e-07	-3.629235e-07
1584	3.003484e-07	-6.251452e-07	-1.291274e-07	-9.834612e-08
1585	1.647149e-07	1.319187e-07	6.455194e-08	-6.730916e-09
1586	1.289502e-07	-4.430220e-08	4.406201e-08	-2.557486e-08
1587	3.348322e-07	-1.948273e-07	4.817141e-08	-1.185262e-07
1588	3.620130e-08	2.015588e-07	6.659837e-08	-3.470507e-07
1589	3.348322e-07	-6.687566e-07	2.093898e-07	3.813585e-08
1590	2.487998e-07	-4.115419e-07	-1.210030e-07	-6.730916e-09
1591	1.972757e-07	1.182841e-07	4.223060e-07	-6.966524e-08
1592	9.908174e-09	2.291578e-07	2.345798e-07	-4.288562e-07
1593	2.487998e-07	5.415023e-08	-1.212046e-07	-2.352413e-07
1594	2.316801e-07	7.962269e-08	-2.022345e-07	-2.352413e-07
1595	3.003484e-07	7.943340e-09	5.226980e-08	-2.610590e-07
1596	4.210228e-07	-7.806793e-08	7.357727e-09	-3.223068e-07
1597	2.487998e-07	5.415023e-08	-1.212046e-07	-2.352413e-07
1598	3.003484e-07	7.943340e-09	-6.486985e-08	-3.629235e-07
1599	3.620130e-08	3.086291e-08	-6.898759e-08	-2.013010e-07

sulphates      alcohol      quality

1	-6.860706e-08	2.194150e-07	-0.7878227
2	4.647883e-08	2.467261e-07	-0.7878227
3	-2.356543e-09	2.467261e-07	-0.7878227
4	-5.155995e-08	2.467261e-07	0.4508484
5	-6.860706e-08	2.194150e-07	-0.7878227

6	-6.860706e-08	2.194150e-07	-0.7878227
7	-1.284737e-07	2.194150e-07	-0.7878227
8	-1.226949e-07	1.985578e-07	1.6895196
9	-6.329219e-08	2.348173e-07	1.6895196
10	1.211701e-07	2.936799e-08	-0.7878227
11	-8.176282e-08	1.970886e-07	-0.7878227
12	1.211701e-07	2.936799e-08	-0.7878227
13	-9.349256e-08	2.202065e-07	-0.7878227
14	1.533901e-07	1.901320e-07	-0.7878227
15	1.264063e-07	1.970886e-07	-0.7878227
16	1.274569e-07	1.970886e-07	-0.7878227
17	1.160567e-07	2.936799e-08	1.6895196
18	1.408299e-07	2.062209e-07	-0.7878227
19	-1.051615e-07	1.826475e-07	-2.0264939
20	1.318584e-07	1.970886e-07	0.4508484
21	-8.765020e-08	2.194150e-07	0.4508484
22	-2.356543e-09	2.456586e-07	-0.7878227
23	1.270159e-07	2.348173e-07	-0.7878227
24	-8.765020e-08	2.194150e-07	-0.7878227
25	-1.601715e-08	2.456586e-07	0.4508484
26	-6.860706e-08	2.062209e-07	-0.7878227
27	-4.618980e-08	2.348173e-07	-0.7878227
28	1.270159e-07	2.348173e-07	-0.7878227
29	-7.622853e-08	2.194150e-07	-0.7878227
30	-4.618980e-08	2.467261e-07	0.4508484
31	-8.176282e-08	1.720910e-07	-0.7878227
32	-6.329219e-08	-1.746378e-09	0.4508484
33	7.914324e-09	2.467261e-07	-0.7878227
34	-9.349256e-08	2.194150e-07	0.4508484
35	-7.622853e-08	1.970886e-07	-0.7878227
36	-7.622853e-08	2.456690e-07	0.4508484
37	-3.715481e-08	-5.858043e-08	0.4508484
38	1.090017e-07	2.456586e-07	1.6895196
39	-1.168857e-07	2.467261e-07	-2.0264939
40	1.242813e-07	2.936799e-08	-0.7878227
41	1.242813e-07	2.936799e-08	-0.7878227
42	-9.931010e-08	2.062209e-07	-2.0264939
43	1.268083e-07	2.936799e-08	0.4508484
44	1.372413e-07	1.070752e-07	-0.7878227
45	-9.349256e-08	2.348173e-07	-0.7878227
46	-6.860706e-08	-7.822210e-07	-2.0264939
47	1.090017e-07	1.970886e-07	-0.7878227
48	-5.155995e-08	2.348173e-07	-0.7878227
49	-6.860706e-08	1.970886e-07	-0.7878227
50	-5.155995e-08	1.970886e-07	-0.7878227

51	1.142577e-07	1.970886e-07	-0.7878227
52	-1.601715e-08	2.194150e-07	0.4508484
53	-9.226623e-09	2.194150e-07	0.4508484
54	-6.860706e-08	2.194150e-07	-0.7878227
55	-1.601715e-08	1.424063e-07	0.4508484
56	-8.765020e-08	2.348173e-07	-0.7878227
57	-1.601715e-08	2.456690e-07	-0.7878227
58	1.179106e-07	2.194150e-07	-0.7878227
59	-4.618980e-08	1.985578e-07	-0.7878227
60	-8.176282e-08	2.194150e-07	0.4508484
61	-9.226623e-09	1.970886e-07	-0.7878227
62	9.326296e-08	2.062209e-07	-0.7878227
63	-2.113369e-08	2.348173e-07	1.6895196
64	-6.329219e-08	2.467261e-07	-0.7878227
65	-1.688570e-07	-9.952443e-08	-0.7878227
66	-1.688570e-07	-9.952443e-08	-0.7878227
67	-5.155995e-08	2.456690e-07	-0.7878227
68	-5.155995e-08	-2.964277e-08	-0.7878227
69	1.200354e-07	-2.964277e-08	-0.7878227
70	1.279296e-07	2.936799e-08	0.4508484
71	-8.176282e-08	2.348173e-07	0.4508484
72	-1.168857e-07	2.348173e-07	-0.7878227
73	-1.168857e-07	2.348173e-07	-0.7878227
74	-8.765020e-08	1.970886e-07	-2.0264939
75	1.233847e-07	2.456690e-07	-0.7878227
76	7.914324e-09	2.936799e-08	-0.7878227
77	7.914324e-09	2.936799e-08	-0.7878227
78	-7.622853e-08	-2.964277e-08	0.4508484
79	-9.349256e-08	1.720910e-07	-0.7878227
80	1.336527e-07	1.901320e-07	-2.0264939
81	-6.860706e-08	1.970886e-07	-0.7878227
82	1.408299e-07	2.194150e-07	-0.7878227
83	-6.329219e-08	1.901320e-07	-0.7878227
84	1.345499e-07	2.194150e-07	-0.7878227
85	1.189116e-07	1.070752e-07	0.4508484
86	-4.618980e-08	1.720910e-07	-0.7878227
87	1.708846e-07	2.202065e-07	0.4508484
88	-9.226623e-09	2.456690e-07	-0.7878227
89	1.381385e-07	2.348173e-07	-0.7878227
90	-8.765020e-08	1.826475e-07	-0.7878227
91	-8.176282e-08	2.348173e-07	-0.7878227
92	1.708846e-07	2.202065e-07	0.4508484
93	1.722304e-07	2.467261e-07	-0.7878227
94	-9.226623e-09	2.456690e-07	-0.7878227
95	-1.168857e-07	2.936799e-08	-2.0264939

96	-3.715481e-08	-7.202281e-07	0.4508484
97	-6.860706e-08	-2.964277e-08	-0.7878227
98	-1.601715e-08	1.970886e-07	-0.7878227
99	-6.860706e-08	2.467261e-07	-0.7878227
100	-4.618980e-08	1.826475e-07	0.4508484
101	-3.470151e-08	1.424063e-07	0.4508484
102	-6.860706e-08	7.006332e-08	0.4508484
103	-4.618980e-08	1.826475e-07	0.4508484
104	-9.931010e-08	1.970886e-07	-0.7878227
105	-1.168857e-07	2.194150e-07	-0.7878227
106	-9.931010e-08	1.970886e-07	-0.7878227
107	1.421757e-07	2.062209e-07	-0.7878227
108	1.200354e-07	2.062209e-07	-0.7878227
109	1.211701e-07	2.456690e-07	0.4508484
110	6.719190e-08	2.062209e-07	-0.7878227
111	1.274569e-07	2.348173e-07	-0.7878227
112	7.914324e-09	2.467261e-07	-0.7878227
113	7.914324e-09	2.467261e-07	-0.7878227
114	2.539395e-08	2.456586e-07	0.4508484
115	1.274569e-07	2.348173e-07	-0.7878227
116	-1.601715e-08	2.936799e-08	0.4508484
117	-3.470151e-08	1.985578e-07	0.4508484
118	-1.051615e-07	2.194150e-07	0.4508484
119	-3.715481e-08	-9.952443e-08	0.4508484
120	-8.176282e-08	1.970886e-07	0.4508484
121	-6.329219e-08	1.826475e-07	-0.7878227
122	-3.715481e-08	-9.952443e-08	0.4508484
123	-9.349256e-08	1.970886e-07	-0.7878227
124	-8.765020e-08	2.348173e-07	-0.7878227
125	-1.168857e-07	2.348173e-07	-0.7878227
126	8.415691e-08	2.194150e-07	-0.7878227
127	-1.110413e-07	-9.952443e-08	-0.7878227
128	-1.168857e-07	-9.952443e-08	-0.7878227
129	1.272349e-07	2.936799e-08	1.6895196
130	-6.329219e-08	2.194150e-07	-0.7878227
131	7.914324e-09	2.194150e-07	-0.7878227
132	-1.601715e-08	-7.512245e-07	-0.7878227
133	-1.601715e-08	-7.512245e-07	-0.7878227
134	-5.155995e-08	2.467261e-07	0.4508484
135	-7.622853e-08	2.202065e-07	0.4508484
136	1.233847e-07	2.456690e-07	-0.7878227
137	1.179106e-07	2.348173e-07	-0.7878227
138	-9.226623e-09	1.970886e-07	-0.7878227
139	-8.176282e-08	2.348173e-07	-0.7878227
140	-8.176282e-08	2.348173e-07	-0.7878227

141	1.233847e-07	2.456690e-07	-0.7878227
142	1.179106e-07	2.348173e-07	-0.7878227
143	1.200354e-07	-1.061189e-06	0.4508484
144	-5.155995e-08	2.194150e-07	-0.7878227
145	1.200354e-07	-1.061189e-06	0.4508484
146	-2.113369e-08	2.194150e-07	-0.7878227
147	-9.349256e-08	1.985578e-07	-0.7878227
148	1.211701e-07	2.062209e-07	-0.7878227
149	-5.155995e-08	1.424063e-07	0.4508484
150	-3.470151e-08	2.936799e-08	0.4508484
151	-8.765020e-08	1.070752e-07	0.4508484
152	1.731275e-07	2.194150e-07	-2.0264939
153	-8.176282e-08	1.720910e-07	-0.7878227
154	-8.176282e-08	1.720910e-07	-0.7878227
155	1.016230e-07	2.936799e-08	-0.7878227
156	9.326296e-08	2.936799e-08	-0.7878227
157	1.016230e-07	2.936799e-08	-0.7878227
158	9.326296e-08	2.936799e-08	-0.7878227
159	-1.051615e-07	2.062209e-07	-0.7878227
160	-6.329219e-08	2.062209e-07	0.4508484
161	-6.860706e-08	2.456690e-07	-0.7878227
162	1.318584e-07	1.970886e-07	-2.0264939
163	-6.860706e-08	1.985578e-07	0.4508484
164	-1.110413e-07	2.194150e-07	-0.7878227
165	-1.110413e-07	2.194150e-07	-0.7878227
166	-2.113369e-08	2.348173e-07	-0.7878227
167	-9.349256e-08	1.424063e-07	-0.7878227
168	-1.168857e-07	1.826475e-07	-2.0264939
169	-7.622853e-08	7.006332e-08	0.4508484
170	1.547358e-07	2.348173e-07	-0.7878227
171	-2.034669e-07	1.901320e-07	-2.0264939
172	-3.470151e-08	1.970886e-07	0.4508484
173	-3.470151e-08	1.970886e-07	0.4508484
174	-6.329219e-08	-2.972509e-07	0.4508484
175	-1.226949e-07	2.348173e-07	-0.7878227
176	1.189116e-07	2.348173e-07	-0.7878227
177	-1.226949e-07	2.348173e-07	-0.7878227
178	-3.470151e-08	2.936799e-08	0.4508484
179	-6.860706e-08	2.456690e-07	-0.7878227
180	-4.618980e-08	2.348173e-07	-0.7878227
181	-4.618980e-08	2.348173e-07	-0.7878227
182	1.298346e-07	2.062209e-07	-0.7878227
183	-9.349256e-08	2.062209e-07	-0.7878227
184	-5.155995e-08	2.062209e-07	-0.7878227
185	-5.155995e-08	2.062209e-07	0.4508484

186	-8.765020e-08	2.456586e-07	-0.7878227
187	-7.622853e-08	1.970886e-07	-0.7878227
188	-1.110413e-07	2.456586e-07	-0.7878227
189	-7.622853e-08	2.348173e-07	-0.7878227
190	-7.622853e-08	2.348173e-07	-0.7878227
191	-2.113369e-08	2.194150e-07	-0.7878227
192	-2.113369e-08	2.467261e-07	0.4508484
193	-3.470151e-08	2.348173e-07	-0.7878227
194	-7.622853e-08	2.456586e-07	-0.7878227
195	-7.622853e-08	2.456586e-07	-0.7878227
196	-8.176282e-08	2.194150e-07	-0.7878227
197	-4.618980e-08	1.424063e-07	-0.7878227
198	1.284365e-07	1.720910e-07	0.4508484
199	1.254922e-07	-7.512245e-07	1.6895196
200	-1.457838e-07	-2.666957e-07	-2.0264939
201	1.233847e-07	1.070752e-07	1.6895196
202	1.301463e-07	2.062209e-07	-0.7878227
203	1.200354e-07	2.348173e-07	-0.7878227
204	-7.622853e-08	1.970886e-07	-0.7878227
205	-6.860706e-08	1.970886e-07	0.4508484
206	1.179106e-07	-5.858043e-08	1.6895196
207	1.179106e-07	-5.858043e-08	1.6895196
208	-8.765020e-08	2.062209e-07	-0.7878227
209	2.539395e-08	2.194150e-07	-0.7878227
210	1.264063e-07	2.936799e-08	1.6895196
211	1.258729e-07	-5.661138e-07	0.4508484
212	-6.860706e-08	1.985578e-07	0.4508484
213	2.539395e-08	1.424063e-07	0.4508484
214	-1.457838e-07	1.720910e-07	-0.7878227
215	9.326296e-08	2.467261e-07	0.4508484
216	1.169559e-07	2.936799e-08	-0.7878227
217	-6.329219e-08	-1.333056e-07	-0.7878227
218	-7.622853e-08	1.901320e-07	-0.7878227
219	-8.176282e-08	2.456586e-07	-0.7878227
220	-3.715481e-08	2.348173e-07	-0.7878227
221	-4.618980e-08	2.194150e-07	0.4508484
222	-6.329219e-08	2.194150e-07	-0.7878227
223	-3.715481e-08	2.348173e-07	-0.7878227
224	-3.715481e-08	1.985578e-07	0.4508484
225	-6.329219e-08	7.006332e-08	-2.0264939
226	-5.155995e-08	2.936799e-08	0.4508484
227	1.556330e-07	2.348173e-07	0.4508484
228	-1.601715e-08	2.467261e-07	-0.7878227
229	-5.155995e-08	2.936799e-08	0.4508484
230	-1.051615e-07	-1.333056e-07	-0.7878227

231	-2.113369e-08	-5.059251e-07	1.6895196
232	-9.349256e-08	2.202065e-07	0.4508484
233	8.415691e-08	2.456690e-07	0.4508484
234	-1.051615e-07	-1.333056e-07	-0.7878227
235	-7.622853e-08	1.826475e-07	0.4508484
236	-5.155995e-08	1.826475e-07	0.4508484
237	-5.155995e-08	1.826475e-07	0.4508484
238	-5.155995e-08	1.970886e-07	0.4508484
239	-5.155995e-08	1.826475e-07	0.4508484
240	-7.622853e-08	1.826475e-07	0.4508484
241	1.323070e-07	2.062209e-07	-0.7878227
242	9.326296e-08	-9.952443e-08	0.4508484
243	-1.110413e-07	2.467261e-07	0.4508484
244	1.249598e-07	1.970886e-07	1.6895196
245	1.249598e-07	1.970886e-07	1.6895196
246	1.281808e-07	2.202065e-07	0.4508484
247	-9.349256e-08	2.348173e-07	-0.7878227
248	-1.342462e-07	2.062209e-07	-0.7878227
249	-1.168857e-07	2.467261e-07	0.4508484
250	1.281808e-07	2.202065e-07	0.4508484
251	1.189116e-07	1.985578e-07	0.4508484
252	8.415691e-08	2.202065e-07	0.4508484
253	-8.765020e-08	2.936799e-08	-0.7878227
254	-4.618980e-08	2.348173e-07	-0.7878227
255	8.415691e-08	2.202065e-07	0.4508484
256	-6.329219e-08	2.062209e-07	-0.7878227
257	-2.113369e-08	1.970886e-07	-0.7878227
258	2.539395e-08	1.970886e-07	-0.7878227
259	1.399328e-07	2.194150e-07	-0.7878227
260	1.211701e-07	2.936799e-08	1.6895196
261	-2.356543e-09	2.062209e-07	-0.7878227
262	-3.715481e-08	2.194150e-07	-2.0264939
263	-6.329219e-08	1.985578e-07	-0.7878227
264	2.539395e-08	2.062209e-07	-0.7878227
265	1.261713e-07	-9.952443e-08	-0.7878227
266	1.016230e-07	1.424063e-07	1.6895196
267	1.016230e-07	2.467261e-07	-2.0264939
268	1.258729e-07	-6.892409e-07	2.9281906
269	1.270159e-07	2.194150e-07	0.4508484
270	1.284365e-07	1.720910e-07	0.4508484
271	2.539395e-08	-2.964277e-08	0.4508484
272	1.284365e-07	1.720910e-07	0.4508484
273	1.189116e-07	1.720910e-07	-0.7878227
274	-9.226623e-09	2.194150e-07	-0.7878227
275	1.179106e-07	2.194150e-07	-0.7878227

276	2.539395e-08	-2.964277e-08	0.4508484
277	1.270159e-07	2.194150e-07	0.4508484
278	1.284365e-07	1.720910e-07	0.4508484
279	1.233847e-07	-6.273476e-07	2.9281906
280	1.179106e-07	2.936799e-08	1.6895196
281	1.233847e-07	2.062209e-07	0.4508484
282	1.318584e-07	2.202065e-07	1.6895196
283	-6.329219e-08	1.901320e-07	-0.7878227
284	1.179106e-07	2.936799e-08	1.6895196
285	9.326296e-08	2.467261e-07	-0.7878227
286	9.326296e-08	2.467261e-07	-0.7878227
287	1.169559e-07	1.070752e-07	0.4508484
288	8.415691e-08	1.070752e-07	0.4508484
289	1.258729e-07	-1.746378e-09	1.6895196
290	1.279296e-07	1.970886e-07	-0.7878227
291	1.258729e-07	-1.746378e-09	1.6895196
292	9.326296e-08	2.936799e-08	-0.7878227
293	-9.226623e-09	1.070752e-07	0.4508484
294	-3.715481e-08	1.720910e-07	0.4508484
295	1.223092e-07	2.348173e-07	0.4508484
296	-9.226623e-09	2.348173e-07	-0.7878227
297	-9.349256e-08	2.202065e-07	-0.7878227
298	1.090017e-07	2.456690e-07	-0.7878227
299	1.211701e-07	2.456586e-07	-0.7878227
300	9.326296e-08	2.456690e-07	-0.7878227
301	-4.618980e-08	-2.964277e-08	0.4508484
302	-9.226623e-09	1.720910e-07	0.4508484
303	1.016230e-07	1.985578e-07	-0.7878227
304	-8.176282e-08	2.348173e-07	-0.7878227
305	-9.349256e-08	1.970886e-07	-0.7878227
306	-4.618980e-08	2.062209e-07	0.4508484
307	-9.349256e-08	2.194150e-07	-0.7878227
308	-2.113369e-08	2.348173e-07	0.4508484
309	-1.601715e-08	2.348173e-07	0.4508484
310	-8.765020e-08	2.348173e-07	0.4508484
311	-4.618980e-08	2.062209e-07	0.4508484
312	-8.176282e-08	2.194150e-07	0.4508484
313	-1.601715e-08	2.348173e-07	0.4508484
314	-8.765020e-08	2.194150e-07	-0.7878227
315	4.647883e-08	-1.333056e-07	-0.7878227
316	-2.356543e-09	-1.333056e-07	0.4508484
317	-2.356543e-09	1.720910e-07	-0.7878227
318	-9.226623e-09	7.006332e-08	0.4508484
319	9.326296e-08	-2.972509e-07	1.6895196
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321	9.326296e-08	-2.972509e-07	1.6895196
322	-2.113369e-08	2.456586e-07	-0.7878227
323	-1.601715e-08	2.062209e-07	-0.7878227
324	8.415691e-08	2.348173e-07	0.4508484
325	6.719190e-08	1.970886e-07	0.4508484
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327	1.142577e-07	-2.972509e-07	1.6895196
328	1.242813e-07	-2.972509e-07	-0.7878227
329	2.539395e-08	2.456586e-07	0.4508484
330	-2.113369e-08	2.348173e-07	-0.7878227
331	7.914324e-09	-5.965950e-07	0.4508484
332	7.914324e-09	-5.965950e-07	0.4508484
333	-8.176282e-08	2.194150e-07	0.4508484
334	-9.349256e-08	-1.333056e-07	-0.7878227
335	1.142577e-07	-3.585794e-07	1.6895196
336	1.249598e-07	-5.059251e-07	1.6895196
337	8.415691e-08	-5.965950e-07	0.4508484
338	-9.226623e-09	1.070752e-07	-0.7878227
339	1.292519e-07	-2.972509e-07	0.4508484
340	1.444186e-07	2.467261e-07	1.6895196
341	1.363442e-07	1.970886e-07	0.4508484
342	1.261713e-07	-2.361709e-07	0.4508484
343	1.160567e-07	2.467261e-07	0.4508484
344	1.160567e-07	2.467261e-07	0.4508484
345	1.189116e-07	-2.964277e-08	0.4508484
346	1.223092e-07	2.202065e-07	-0.7878227
347	1.266049e-07	-5.359001e-07	1.6895196
348	1.274569e-07	-4.463323e-07	0.4508484
349	1.272349e-07	1.985578e-07	0.4508484
350	1.258729e-07	2.194150e-07	0.4508484
351	1.287009e-07	2.202065e-07	0.4508484
352	1.242813e-07	2.194150e-07	0.4508484
353	1.090017e-07	2.062209e-07	-0.7878227
354	1.179106e-07	-7.512245e-07	-0.7878227
355	-4.618980e-08	-4.170075e-07	0.4508484
356	-3.470151e-08	-6.892409e-07	0.4508484
357	1.264063e-07	-1.333056e-07	-0.7878227
358	1.160567e-07	-3.585794e-07	1.6895196
359	1.254922e-07	7.006332e-08	1.6895196
360	4.647883e-08	2.467261e-07	0.4508484
361	8.415691e-08	2.194150e-07	-0.7878227
362	1.270159e-07	2.202065e-07	0.4508484
363	-6.860706e-08	1.985578e-07	-0.7878227
364	1.261713e-07	1.424063e-07	-0.7878227
365	1.090017e-07	1.985578e-07	1.6895196

366	1.274569e-07	-3.880328e-07	0.4508484
367	1.090017e-07	1.985578e-07	1.6895196
368	6.719190e-08	1.826475e-07	-0.7878227
369	-9.226623e-09	2.194150e-07	-0.7878227
370	1.341013e-07	-4.463323e-07	1.6895196
371	1.189116e-07	2.202065e-07	-0.7878227
372	1.261713e-07	1.601399e-07	0.4508484
373	1.304696e-07	-1.746378e-09	0.4508484
374	-1.601715e-08	1.970886e-07	-0.7878227
375	1.223092e-07	-5.858043e-08	0.4508484
376	1.242813e-07	-3.880328e-07	1.6895196
377	1.332041e-07	-1.333056e-07	0.4508484
378	1.341013e-07	-4.463323e-07	1.6895196
379	1.289726e-07	-8.442138e-07	0.4508484
380	8.415691e-08	-5.858043e-08	0.4508484
381	1.211701e-07	2.194150e-07	0.4508484
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383	1.211701e-07	2.194150e-07	0.4508484
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385	1.142577e-07	1.970886e-07	-0.7878227
386	1.169559e-07	2.456586e-07	0.4508484
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388	-8.176282e-08	2.456690e-07	0.4508484
389	1.142577e-07	1.970886e-07	0.4508484
390	8.415691e-08	1.985578e-07	1.6895196
391	1.233847e-07	-7.202281e-07	2.9281906
392	1.211701e-07	1.985578e-07	0.4508484
393	-9.931010e-08	2.348173e-07	-0.7878227
394	-8.176282e-08	1.901320e-07	-0.7878227
395	-6.329219e-08	2.202065e-07	-0.7878227
396	-3.715481e-08	-7.512245e-07	1.6895196
397	-8.765020e-08	2.202065e-07	-0.7878227
398	-2.356543e-09	-1.333056e-07	0.4508484
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400	-7.622853e-08	2.194150e-07	-0.7878227
401	-8.765020e-08	2.202065e-07	-0.7878227
402	-1.226949e-07	-5.858043e-08	0.4508484
403	-3.470151e-08	2.936799e-08	0.4508484
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405	-3.470151e-08	1.901320e-07	-0.7878227
406	1.169559e-07	1.720910e-07	0.4508484
407	-2.356543e-09	-5.858043e-08	0.4508484
408	-1.601715e-08	-5.858043e-08	1.6895196
409	8.415691e-08	-2.361709e-07	0.4508484
410	-6.329219e-08	2.456690e-07	-2.0264939

411	-2.113369e-08	2.348173e-07	0.4508484
412	-2.113369e-08	2.348173e-07	-0.7878227
413	-9.226623e-09	2.062209e-07	-0.7878227
414	1.233847e-07	-3.585794e-07	1.6895196
415	-3.470151e-08	2.348173e-07	-0.7878227
416	1.314728e-07	2.062209e-07	-0.7878227
417	7.914324e-09	-3.585794e-07	0.4508484
418	-1.168857e-07	2.936799e-08	-0.7878227
419	1.169559e-07	7.006332e-08	0.4508484
420	4.647883e-08	2.202065e-07	-0.7878227
421	1.090017e-07	-3.880328e-07	1.6895196
422	-6.860706e-08	-5.359001e-07	1.6895196
423	-1.400155e-07	-9.952443e-08	-0.7878227
424	1.268083e-07	-1.333056e-07	1.6895196
425	-1.400155e-07	-9.952443e-08	-0.7878227
426	-6.860706e-08	-5.359001e-07	1.6895196
427	-1.110413e-07	-2.666957e-07	0.4508484
428	-6.860706e-08	-1.746378e-09	0.4508484
429	-3.715481e-08	2.062209e-07	-0.7878227
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431	1.268083e-07	-1.333056e-07	1.6895196
432	-6.860706e-08	1.970886e-07	-0.7878227
433	-2.356543e-09	-6.892409e-07	0.4508484
434	-1.110413e-07	2.348173e-07	-0.7878227
435	1.266049e-07	2.202065e-07	0.4508484
436	-1.110413e-07	2.348173e-07	-0.7878227
437	-6.860706e-08	1.424063e-07	0.4508484
438	7.914324e-09	-2.034791e-07	0.4508484
439	1.266049e-07	2.202065e-07	0.4508484
440	-3.715481e-08	2.062209e-07	-0.7878227
441	1.233847e-07	2.467261e-07	2.9281906
442	4.647883e-08	-2.361709e-07	0.4508484
443	4.647883e-08	-2.034791e-07	1.6895196
444	-1.601715e-08	-3.280658e-07	1.6895196
445	1.249598e-07	-5.965950e-07	1.6895196
446	-6.860706e-08	1.720910e-07	0.4508484
447	1.090017e-07	2.936799e-08	-0.7878227
448	1.016230e-07	-2.034791e-07	-0.7878227
449	-6.860706e-08	1.424063e-07	0.4508484
450	-3.470151e-08	-5.858043e-08	0.4508484
451	-3.470151e-08	-5.858043e-08	0.4508484
452	1.311535e-07	1.901320e-07	0.4508484
453	-1.601715e-08	1.985578e-07	0.4508484
454	1.142577e-07	-2.034791e-07	1.6895196
455	-1.601715e-08	-1.685718e-07	-0.7878227

456	6.719190e-08	-8.752103e-07	2.9281906
457	-5.155995e-08	1.070752e-07	-0.7878227
458	-5.155995e-08	2.456690e-07	-0.7878227
459	1.142577e-07	-2.034791e-07	1.6895196
460	-6.329219e-08	1.826475e-07	-3.2651650
461	-3.470151e-08	-2.361709e-07	0.4508484
462	-3.470151e-08	2.062209e-07	-0.7878227
463	-3.470151e-08	-3.880328e-07	-0.7878227
464	-8.765020e-08	1.826475e-07	-0.7878227
465	8.415691e-08	1.970886e-07	0.4508484
466	1.270159e-07	2.456586e-07	-0.7878227
467	1.016230e-07	-2.972509e-07	0.4508484
468	1.200354e-07	-1.061189e-06	0.4508484
469	-2.113369e-08	1.970886e-07	0.4508484
470	-5.155995e-08	2.467261e-07	-0.7878227
471	-3.470151e-08	-1.746378e-09	-0.7878227
472	9.326296e-08	-2.666957e-07	0.4508484
473	1.233847e-07	7.006332e-08	0.4508484
474	1.200354e-07	-1.746378e-09	-0.7878227
475	1.266049e-07	2.194150e-07	0.4508484
476	-3.715481e-08	1.424063e-07	-0.7878227
477	8.415691e-08	2.456586e-07	-0.7878227
478	1.311535e-07	-1.333056e-07	0.4508484
479	-3.715481e-08	1.424063e-07	-0.7878227
480	8.415691e-08	1.720910e-07	0.4508484
481	7.914324e-09	1.970886e-07	-0.7878227
482	1.272349e-07	-3.585794e-07	2.9281906
483	1.308030e-07	2.194150e-07	-0.7878227
484	1.311535e-07	2.194150e-07	-0.7878227
485	7.914324e-09	-8.752103e-07	0.4508484
486	-1.226949e-07	1.985578e-07	-0.7878227
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488	-1.515521e-07	1.985578e-07	0.4508484
489	1.272349e-07	-5.858043e-08	1.6895196
490	1.160567e-07	1.424063e-07	0.4508484
491	2.539395e-08	-1.746378e-09	0.4508484
492	1.200354e-07	-8.442138e-07	1.6895196
493	1.268083e-07	-8.752103e-07	1.6895196
494	1.142577e-07	-3.280658e-07	0.4508484
495	-7.622853e-08	-4.760093e-07	0.4508484
496	-2.356543e-09	-1.333056e-07	2.9281906
497	-2.356543e-09	1.826475e-07	0.4508484
498	1.200354e-07	-1.685718e-07	-0.7878227
499	-2.356543e-09	-1.333056e-07	2.9281906
500	1.142577e-07	-3.280658e-07	0.4508484

501	-2.356543e-09	1.826475e-07	0.4508484
502	1.254922e-07	-4.463323e-07	1.6895196
503	1.254922e-07	-4.463323e-07	1.6895196
504	1.304696e-07	-9.952443e-08	1.6895196
505	1.308030e-07	-5.858043e-08	1.6895196
506	1.189116e-07	-5.965950e-07	1.6895196
507	1.298346e-07	-5.858043e-08	1.6895196
508	9.326296e-08	2.348173e-07	0.4508484
509	-1.601715e-08	1.424063e-07	0.4508484
510	4.647883e-08	-2.666957e-07	1.6895196
511	-3.470151e-08	2.348173e-07	-0.7878227
512	-1.601715e-08	1.424063e-07	0.4508484
513	1.223092e-07	2.456586e-07	0.4508484
514	7.914324e-09	-3.880328e-07	1.6895196
515	7.914324e-09	-3.880328e-07	1.6895196
516	1.345499e-07	2.062209e-07	-0.7878227
517	1.142577e-07	-4.170075e-07	0.4508484
518	-1.601715e-08	1.376322e-07	-3.2651650
519	4.647883e-08	-3.585794e-07	0.4508484
520	1.189116e-07	-1.333056e-07	-0.7878227
521	1.268083e-07	1.985578e-07	0.4508484
522	-9.226623e-09	1.901320e-07	-0.7878227
523	1.289726e-07	2.467261e-07	-0.7878227
524	-7.622853e-08	2.194150e-07	-0.7878227
525	-9.226623e-09	2.348173e-07	-0.7878227
526	2.539395e-08	2.202065e-07	-0.7878227
527	1.189116e-07	-1.333056e-07	-0.7878227
528	1.179106e-07	-2.666957e-07	0.4508484
529	1.160567e-07	1.601399e-07	0.4508484
530	-6.329219e-08	2.194150e-07	-0.7878227
531	1.261713e-07	1.070752e-07	0.4508484
532	-3.470151e-08	1.070752e-07	-0.7878227
533	-3.470151e-08	1.070752e-07	-0.7878227
534	7.914324e-09	-6.892409e-07	0.4508484
535	-6.860706e-08	1.985578e-07	0.4508484
536	1.261713e-07	1.070752e-07	0.4508484
537	-6.329219e-08	2.194150e-07	-0.7878227
538	1.179106e-07	-2.964277e-08	0.4508484
539	7.914324e-09	-4.463323e-07	1.6895196
540	-2.113369e-08	-2.034791e-07	-0.7878227
541	2.539395e-08	2.456690e-07	-0.7878227
542	1.090017e-07	-1.333056e-07	0.4508484
543	-4.618980e-08	2.202065e-07	-0.7878227
544	1.016230e-07	-1.333056e-07	0.4508484
545	1.200354e-07	1.376322e-07	0.4508484

546	-4.618980e-08	1.901320e-07	-0.7878227
547	1.189116e-07	2.348173e-07	0.4508484
548	1.258729e-07	-2.964277e-08	0.4508484
549	1.160567e-07	7.006332e-08	0.4508484
550	-3.470151e-08	2.194150e-07	0.4508484
551	-6.860706e-08	2.348173e-07	0.4508484
552	1.090017e-07	1.985578e-07	0.4508484
553	1.142577e-07	1.985578e-07	0.4508484
554	-2.113369e-08	-2.972509e-07	-0.7878227
555	1.142577e-07	-1.685718e-07	-0.7878227
556	1.142577e-07	-1.685718e-07	-0.7878227
557	-6.860706e-08	-3.585794e-07	0.4508484
558	1.142577e-07	-1.685718e-07	-0.7878227
559	-6.860706e-08	-3.585794e-07	0.4508484
560	4.647883e-08	-6.582853e-07	0.4508484
561	-6.329219e-08	-2.666957e-07	-0.7878227
562	-5.155995e-08	1.970886e-07	-0.7878227
563	-3.470151e-08	1.970886e-07	-0.7878227
564	-3.470151e-08	1.720910e-07	0.4508484
565	4.647883e-08	-6.582853e-07	0.4508484
566	-6.329219e-08	-2.666957e-07	-0.7878227
567	-3.715481e-08	1.826475e-07	0.4508484
568	-3.715481e-08	1.826475e-07	0.4508484
569	1.200354e-07	-2.964277e-08	0.4508484
570	-6.329219e-08	-3.585794e-07	0.4508484
571	1.270159e-07	-1.333056e-07	0.4508484
572	-6.329219e-08	-3.585794e-07	0.4508484
573	-3.470151e-08	7.006332e-08	-0.7878227
574	-6.860706e-08	2.456690e-07	-2.0264939
575	8.415691e-08	1.985578e-07	0.4508484
576	1.211701e-07	1.424063e-07	0.4508484
577	-9.349256e-08	1.985578e-07	-2.0264939
578	-3.715481e-08	2.348173e-07	-0.7878227
579	-3.715481e-08	2.467261e-07	-0.7878227
580	-9.931010e-08	2.467261e-07	0.4508484
581	-1.400155e-07	2.456690e-07	-0.7878227
582	-1.400155e-07	2.456690e-07	-0.7878227
583	-1.457838e-07	1.970886e-07	-0.7878227
584	7.914324e-09	2.202065e-07	1.6895196
585	1.169559e-07	-2.964277e-08	1.6895196
586	7.914324e-09	2.456690e-07	0.4508484
587	1.298346e-07	-1.746378e-09	1.6895196
588	-4.618980e-08	2.062209e-07	-0.7878227
589	1.142577e-07	-1.061189e-06	2.9281906
590	1.142577e-07	2.936799e-08	1.6895196

591	-6.329219e-08	2.456586e-07	-0.7878227
592	-1.051615e-07	-2.972509e-07	0.4508484
593	-6.329219e-08	2.456586e-07	-0.7878227
594	-5.155995e-08	1.826475e-07	-0.7878227
595	-8.765020e-08	2.348173e-07	-0.7878227
596	-6.329219e-08	2.062209e-07	-0.7878227
597	-3.715481e-08	2.062209e-07	0.4508484
598	-1.601715e-08	1.985578e-07	0.4508484
599	-1.168857e-07	2.467261e-07	0.4508484
600	8.415691e-08	2.062209e-07	0.4508484
601	-1.226949e-07	1.985578e-07	-2.0264939
602	-6.860706e-08	1.826475e-07	0.4508484
603	-9.349256e-08	2.062209e-07	-0.7878227
604	-6.860706e-08	1.826475e-07	0.4508484
605	-2.113369e-08	1.901320e-07	0.4508484
606	-4.618980e-08	1.970886e-07	0.4508484
607	1.200354e-07	-5.059251e-07	1.6895196
608	-8.765020e-08	2.936799e-08	0.4508484
609	-9.226623e-09	7.006332e-08	0.4508484
610	-9.349256e-08	-6.582853e-07	0.4508484
611	-8.176282e-08	1.970886e-07	-0.7878227
612	-8.176282e-08	2.194150e-07	-0.7878227
613	-3.715481e-08	1.985578e-07	0.4508484
614	1.142577e-07	2.467261e-07	-0.7878227
615	1.444186e-07	1.424063e-07	0.4508484
616	-6.329219e-08	2.456586e-07	-0.7878227
617	-6.329219e-08	2.456586e-07	-0.7878227
618	1.274569e-07	2.467261e-07	0.4508484
619	8.415691e-08	1.424063e-07	-0.7878227
620	1.211701e-07	2.062209e-07	-0.7878227
621	-3.470151e-08	2.194150e-07	-0.7878227
622	-2.113369e-08	2.194150e-07	-0.7878227
623	-7.622853e-08	2.348173e-07	-0.7878227
624	1.281808e-07	-4.760093e-07	0.4508484
625	1.016230e-07	1.424063e-07	-0.7878227
626	1.016230e-07	1.424063e-07	-0.7878227
627	-1.110413e-07	1.901320e-07	-0.7878227
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629	-3.715481e-08	2.062209e-07	0.4508484
630	-3.470151e-08	2.062209e-07	-0.7878227
631	-3.715481e-08	2.062209e-07	0.4508484
632	-1.601715e-08	2.348173e-07	-0.7878227
633	-6.329219e-08	2.936799e-08	0.4508484
634	-9.226623e-09	-2.361709e-07	-2.0264939
635	-5.155995e-08	2.348173e-07	-0.7878227

636	-7.622853e-08	2.456586e-07	-0.7878227
637	-8.765020e-08	2.194150e-07	-0.7878227
638	-8.765020e-08	2.194150e-07	-0.7878227
639	-2.356543e-09	1.424063e-07	1.6895196
640	1.444186e-07	1.070752e-07	0.4508484
641	-2.113369e-08	2.194150e-07	-0.7878227
642	-1.601715e-08	2.348173e-07	-0.7878227
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646	6.719190e-08	1.720910e-07	1.6895196
647	-1.601715e-08	1.720910e-07	-0.7878227
648	-5.155995e-08	-1.333056e-07	-2.0264939
649	2.539395e-08	-2.034791e-07	1.6895196
650	-6.329219e-08	-2.361709e-07	0.4508484
651	-1.051615e-07	2.456690e-07	-0.7878227
652	2.539395e-08	-2.034791e-07	-0.7878227
653	1.249598e-07	-1.340157e-06	-0.7878227
654	-8.176282e-08	-4.463323e-07	0.4508484
655	-1.284737e-07	2.348173e-07	-0.7878227
656	-3.470151e-08	2.194150e-07	-0.7878227
657	-1.051615e-07	2.456690e-07	-0.7878227
658	4.647883e-08	2.936799e-08	1.6895196
659	1.223092e-07	2.456690e-07	0.4508484
660	-6.329219e-08	-1.333056e-07	-2.0264939
661	1.223092e-07	2.456690e-07	0.4508484
662	-9.226623e-09	1.826475e-07	-0.7878227
663	8.415691e-08	2.456690e-07	0.4508484
664	1.200354e-07	1.424063e-07	0.4508484
665	7.914324e-09	1.424063e-07	-0.7878227
666	-6.860706e-08	2.456586e-07	-0.7878227
667	-3.715481e-08	2.348173e-07	0.4508484
668	7.914324e-09	1.970886e-07	0.4508484
669	-6.329219e-08	-1.333056e-07	-0.7878227
670	7.914324e-09	1.970886e-07	0.4508484
671	-5.155995e-08	1.985578e-07	-0.7878227
672	-9.349256e-08	2.348173e-07	-0.7878227
673	-8.765020e-08	2.348173e-07	-0.7878227
674	-9.349256e-08	2.348173e-07	-0.7878227
675	2.539395e-08	2.062209e-07	0.4508484
676	-2.356543e-09	1.424063e-07	-0.7878227
677	2.539395e-08	2.062209e-07	0.4508484
678	-1.168857e-07	2.202065e-07	-0.7878227
679	-8.765020e-08	1.985578e-07	-0.7878227
680	-8.176282e-08	2.456690e-07	-0.7878227

681	-1.110413e-07	1.826475e-07	-0.7878227
682	-1.110413e-07	1.424063e-07	0.4508484
683	-8.176282e-08	2.467261e-07	-0.7878227
684	-6.860706e-08	-2.361709e-07	-0.7878227
685	-1.168857e-07	2.194150e-07	-0.7878227
686	-6.860706e-08	-2.361709e-07	-0.7878227
687	-3.715481e-08	1.901320e-07	-0.7878227
688	-4.618980e-08	2.456586e-07	-0.7878227
689	-1.226949e-07	2.194150e-07	-0.7878227
690	1.308030e-07	2.194150e-07	-0.7878227
691	-8.176282e-08	-2.964277e-08	-3.2651650
692	-8.176282e-08	2.467261e-07	-0.7878227
693	1.358956e-07	1.826475e-07	-0.7878227
694	-2.113369e-08	2.194150e-07	-0.7878227
695	-3.470151e-08	2.194150e-07	-0.7878227
696	-2.113369e-08	-6.892409e-07	0.4508484
697	2.539395e-08	2.348173e-07	0.4508484
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701	-6.329219e-08	1.720910e-07	0.4508484
702	2.539395e-08	2.348173e-07	0.4508484
703	2.539395e-08	2.194150e-07	0.4508484
704	8.415691e-08	2.456690e-07	-2.0264939
705	-8.176282e-08	2.456586e-07	-2.0264939
706	-1.110413e-07	2.202065e-07	-0.7878227
707	-1.226949e-07	1.985578e-07	-0.7878227
708	-9.931010e-08	2.936799e-08	-0.7878227
709	-3.470151e-08	-3.280658e-07	0.4508484
710	7.914324e-09	1.985578e-07	0.4508484
711	-6.329219e-08	1.720910e-07	-0.7878227
712	-3.470151e-08	2.348173e-07	-0.7878227
713	-1.342462e-07	2.194150e-07	-0.7878227
714	-1.284737e-07	2.194150e-07	-0.7878227
715	-9.931010e-08	2.467261e-07	-0.7878227
716	-1.168857e-07	1.970886e-07	0.4508484
717	-1.284737e-07	2.194150e-07	-0.7878227
718	-6.329219e-08	1.985578e-07	-0.7878227
719	-1.400155e-07	2.456690e-07	-0.7878227
720	-8.176282e-08	2.348173e-07	-0.7878227
721	-1.400155e-07	2.456690e-07	-0.7878227
722	-8.765020e-08	1.970886e-07	-0.7878227
723	-4.618980e-08	1.985578e-07	-0.7878227
724	1.560816e-07	2.348173e-07	-0.7878227
725	-3.715481e-08	-2.034791e-07	-2.0264939

726	-7.622853e-08	7.006332e-08	-0.7878227
727	1.016230e-07	-1.685718e-07	0.4508484
728	4.647883e-08	2.348173e-07	-0.7878227
729	4.647883e-08	2.348173e-07	-0.7878227
730	-1.110413e-07	-6.582853e-07	0.4508484
731	2.539395e-08	2.456690e-07	-0.7878227
732	-9.349256e-08	-2.972509e-07	-0.7878227
733	-1.226949e-07	2.456690e-07	-0.7878227
734	-3.715481e-08	2.348173e-07	-0.7878227
735	-2.113369e-08	2.062209e-07	-0.7878227
736	-1.051615e-07	2.348173e-07	-0.7878227
737	-1.051615e-07	2.348173e-07	-0.7878227
738	-2.356543e-09	2.062209e-07	0.4508484
739	-6.860706e-08	1.970886e-07	-0.7878227
740	-3.715481e-08	2.062209e-07	-0.7878227
741	4.647883e-08	-2.972509e-07	0.4508484
742	-6.329219e-08	2.348173e-07	-0.7878227
743	-2.356543e-09	1.970886e-07	-0.7878227
744	-8.765020e-08	1.985578e-07	-0.7878227
745	-9.931010e-08	2.348173e-07	-0.7878227
746	1.090017e-07	2.348173e-07	0.4508484
747	-1.226949e-07	1.826475e-07	0.4508484
748	-1.168857e-07	2.194150e-07	-0.7878227
749	1.016230e-07	2.456690e-07	0.4508484
750	1.090017e-07	2.348173e-07	0.4508484
751	-7.622853e-08	2.348173e-07	-0.7878227
752	-7.622853e-08	2.348173e-07	-0.7878227
753	-3.470151e-08	2.194150e-07	-0.7878227
754	-7.622853e-08	2.348173e-07	-0.7878227
755	1.311535e-07	1.901320e-07	0.4508484
756	-1.457838e-07	-2.964277e-08	0.4508484
757	-1.284737e-07	-2.034791e-07	0.4508484
758	-1.051615e-07	2.467261e-07	-0.7878227
759	-1.051615e-07	2.467261e-07	-0.7878227
760	-9.349256e-08	1.970886e-07	-0.7878227
761	-6.329219e-08	2.456586e-07	-0.7878227
762	-1.515521e-07	2.456690e-07	-0.7878227
763	-8.765020e-08	1.985578e-07	0.4508484
764	-1.515521e-07	2.456690e-07	-0.7878227
765	-7.622853e-08	2.348173e-07	0.4508484
766	-8.176282e-08	2.348173e-07	0.4508484
767	-8.176282e-08	2.194150e-07	-0.7878227
768	-2.113369e-08	2.348173e-07	-0.7878227
769	-8.765020e-08	2.456586e-07	0.4508484
770	-8.176282e-08	2.456690e-07	-0.7878227

771	-8.765020e-08	2.456586e-07	0.4508484
772	-7.622853e-08	2.194150e-07	-0.7878227
773	-7.622853e-08	2.194150e-07	-0.7878227
774	1.272349e-07	2.348173e-07	0.4508484
775	1.270159e-07	2.348173e-07	0.4508484
776	-1.284737e-07	1.985578e-07	-0.7878227
777	-3.715481e-08	1.070752e-07	0.4508484
778	-4.618980e-08	1.070752e-07	0.4508484
779	-3.470151e-08	2.936799e-08	-0.7878227
780	-3.715481e-08	2.467261e-07	-0.7878227
781	-3.715481e-08	2.194150e-07	0.4508484
782	-2.356543e-09	2.467261e-07	-0.7878227
783	-8.765020e-08	1.985578e-07	-0.7878227
784	-2.356543e-09	2.467261e-07	-0.7878227
785	-4.618980e-08	2.467261e-07	-0.7878227
786	-1.051615e-07	2.348173e-07	-0.7878227
787	-1.051615e-07	2.348173e-07	-0.7878227
788	-6.860706e-08	1.720910e-07	0.4508484
789	-6.860706e-08	1.720910e-07	0.4508484
790	-9.349256e-08	2.062209e-07	-0.7878227
791	4.647883e-08	2.456586e-07	0.4508484
792	-8.176282e-08	2.456690e-07	-0.7878227
793	-3.715481e-08	2.456586e-07	0.4508484
794	-6.860706e-08	-5.858043e-08	-0.7878227
795	-8.765020e-08	-5.965950e-07	0.4508484
796	1.363442e-07	1.424063e-07	-0.7878227
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1096	-1.051615e-07	2.936799e-08	-0.7878227
1097	-1.110413e-07	-5.858043e-08	0.4508484
1098	-9.349256e-08	2.194150e-07	-0.7878227
1099	1.223092e-07	-5.965950e-07	1.6895196
1100	-9.349256e-08	2.194150e-07	-0.7878227
1101	1.189116e-07	-5.661138e-07	0.4508484
1102	-1.601715e-08	-4.463323e-07	0.4508484
1103	-8.176282e-08	-2.034791e-07	0.4508484
1104	-1.601715e-08	-4.463323e-07	0.4508484
1105	7.914324e-09	-5.661138e-07	0.4508484
1106	-3.715481e-08	-6.892409e-07	-0.7878227
1107	-8.176282e-08	-5.359001e-07	0.4508484
1108	1.254922e-07	-3.585794e-07	1.6895196
1109	-1.110413e-07	2.348173e-07	-0.7878227
1110	1.169559e-07	-5.858043e-08	0.4508484
1111	-9.226623e-09	1.985578e-07	0.4508484
1112	-9.226623e-09	-5.359001e-07	1.6895196
1113	9.326296e-08	-1.333056e-07	0.4508484
1114	-4.618980e-08	2.348173e-07	0.4508484
1115	7.914324e-09	-9.372031e-07	0.4508484
1116	-3.715481e-08	-2.361709e-07	0.4508484
1117	-3.715481e-08	-2.361709e-07	0.4508484
1118	-3.715481e-08	-2.361709e-07	0.4508484
1119	-8.765020e-08	-8.442138e-07	0.4508484
1120	-5.155995e-08	-7.202281e-07	-0.7878227
1121	1.016230e-07	-7.822210e-07	2.9281906
1122	-7.622853e-08	-5.359001e-07	0.4508484
1123	-1.168857e-07	-5.359001e-07	0.4508484
1124	-2.356543e-09	-2.034791e-07	0.4508484
1125	-2.113369e-08	-2.972509e-07	-2.0264939
1126	-4.618980e-08	-2.361709e-07	1.6895196
1127	-8.176282e-08	-9.062067e-07	0.4508484
1128	-3.715481e-08	-2.972509e-07	0.4508484
1129	4.647883e-08	1.985578e-07	-0.7878227
1130	6.719190e-08	2.936799e-08	0.4508484

1131	-1.601715e-08	7.006332e-08	0.4508484
1132	-1.400155e-07	2.348173e-07	-0.7878227
1133	1.264063e-07	-9.372031e-07	1.6895196
1134	4.647883e-08	-2.034791e-07	1.6895196
1135	1.142577e-07	-3.880328e-07	1.6895196
1136	-3.715481e-08	-4.170075e-07	0.4508484
1137	1.169559e-07	-2.666957e-07	0.4508484
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1139	-5.155995e-08	1.901320e-07	-0.7878227
1140	-9.226623e-09	2.348173e-07	0.4508484
1141	-2.356543e-09	2.348173e-07	0.4508484
1142	1.254922e-07	-1.333056e-07	0.4508484
1143	-2.356543e-09	-2.666957e-07	0.4508484
1144	1.233847e-07	1.985578e-07	0.4508484
1145	-2.113369e-08	1.720910e-07	-0.7878227
1146	1.2223092e-07	7.006332e-08	0.4508484
1147	1.261713e-07	2.467261e-07	0.4508484
1148	-1.110413e-07	-3.880328e-07	1.6895196
1149	7.914324e-09	-3.280658e-07	0.4508484
1150	-9.349256e-08	-4.463323e-07	0.4508484
1151	1.169559e-07	-6.892409e-07	1.6895196
1152	-2.356543e-09	-5.965950e-07	0.4508484
1153	-8.765020e-08	2.467261e-07	-0.7878227
1154	7.914324e-09	-1.685718e-07	0.4508484
1155	4.647883e-08	-2.666957e-07	0.4508484
1156	-8.765020e-08	2.467261e-07	-0.7878227
1157	1.169559e-07	-3.880328e-07	1.6895196
1158	1.261713e-07	-7.202281e-07	1.6895196
1159	1.354470e-07	-1.746378e-09	0.4508484
1160	2.539395e-08	-5.858043e-08	-0.7878227
1161	1.016230e-07	-1.685718e-07	1.6895196
1162	1.160567e-07	1.424063e-07	0.4508484
1163	9.326296e-08	-3.880328e-07	1.6895196
1164	2.539395e-08	1.985578e-07	-0.7878227
1165	2.539395e-08	1.985578e-07	-0.7878227
1166	1.327556e-07	2.194150e-07	-0.7878227
1167	1.287009e-07	1.424063e-07	-0.7878227
1168	1.264063e-07	-5.661138e-07	1.6895196
1169	-6.860706e-08	-4.463323e-07	0.4508484
1170	-2.113369e-08	-2.972509e-07	0.4508484
1171	2.539395e-08	2.936799e-08	0.4508484
1172	4.647883e-08	-5.858043e-08	0.4508484
1173	1.142577e-07	-5.359001e-07	0.4508484
1174	-2.113369e-08	2.348173e-07	0.4508484
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1176	8.415691e-08	-2.972509e-07	0.4508484
1177	-1.051615e-07	-2.034791e-07	-2.0264939
1178	7.914324e-09	-6.582853e-07	1.6895196
1179	1.090017e-07	-2.666957e-07	-0.7878227
1180	1.223092e-07	-1.333056e-07	0.4508484
1181	1.223092e-07	-1.333056e-07	0.4508484
1182	-1.284737e-07	-2.666957e-07	-0.7878227
1183	1.258729e-07	2.936799e-08	0.4508484
1184	-3.715481e-08	2.062209e-07	-0.7878227
1185	8.415691e-08	-9.952443e-08	-0.7878227
1186	-1.284737e-07	-4.170075e-07	0.4508484
1187	-1.051615e-07	-5.059251e-07	-0.7878227
1188	-1.284737e-07	-4.170075e-07	0.4508484
1189	8.415691e-08	-9.952443e-08	-0.7878227
1190	-1.400155e-07	2.456690e-07	-2.0264939
1191	-6.329219e-08	-5.965950e-07	0.4508484
1192	-9.931010e-08	-5.858043e-08	-0.7878227
1193	1.211701e-07	-5.661138e-07	1.6895196
1194	-9.931010e-08	-5.858043e-08	-0.7878227
1195	-4.618980e-08	2.348173e-07	0.4508484
1196	-3.715481e-08	2.348173e-07	0.4508484
1197	-5.155995e-08	2.348173e-07	0.4508484
1198	-8.176282e-08	2.467261e-07	0.4508484
1199	1.200354e-07	-9.952443e-08	0.4508484
1200	-5.155995e-08	2.348173e-07	0.4508484
1201	-8.176282e-08	2.467261e-07	0.4508484
1202	-8.176282e-08	-2.034791e-07	1.6895196
1203	6.719190e-08	-3.585794e-07	2.9281906
1204	-7.622853e-08	2.194150e-07	-0.7878227
1205	1.254922e-07	-1.333056e-07	1.6895196
1206	1.254922e-07	-1.333056e-07	1.6895196
1207	1.254922e-07	-1.333056e-07	1.6895196
1208	1.276855e-07	1.985578e-07	-0.7878227
1209	1.254922e-07	-1.333056e-07	1.6895196
1210	1.261713e-07	-2.034791e-07	1.6895196
1211	-2.113369e-08	7.006332e-08	0.4508484
1212	-2.113369e-08	2.062209e-07	-0.7878227
1213	-2.113369e-08	7.006332e-08	0.4508484
1214	1.160567e-07	2.936799e-08	0.4508484
1215	-1.168857e-07	7.006332e-08	0.4508484
1216	-6.860706e-08	-2.361709e-07	0.4508484
1217	6.719190e-08	2.348173e-07	0.4508484
1218	1.223092e-07	-4.463323e-07	0.4508484
1219	6.719190e-08	-1.746378e-09	0.4508484
1220	1.242813e-07	-9.952443e-08	0.4508484

1221	1.179106e-07	-2.972509e-07	0.4508484
1222	1.179106e-07	-2.972509e-07	0.4508484
1223	-1.284737e-07	2.456690e-07	0.4508484
1224	1.169559e-07	-4.463323e-07	0.4508484
1225	1.233847e-07	1.070752e-07	0.4508484
1226	-9.931010e-08	2.194150e-07	-0.7878227
1227	-1.226949e-07	1.970886e-07	-0.7878227
1228	1.016230e-07	2.456690e-07	-0.7878227
1229	1.090017e-07	-9.372031e-07	1.6895196
1230	-9.226623e-09	2.348173e-07	-0.7878227
1231	1.189116e-07	-3.880328e-07	0.4508484
1232	-2.113369e-08	-5.858043e-08	-0.7878227
1233	-9.226623e-09	2.348173e-07	-0.7878227
1234	-1.110413e-07	2.062209e-07	-2.0264939
1235	-1.630887e-07	-6.892409e-07	0.4508484
1236	-6.860706e-08	-2.972509e-07	-2.0264939
1237	-9.226623e-09	2.194150e-07	0.4508484
1238	-1.630887e-07	-6.892409e-07	0.4508484
1239	-1.284737e-07	2.456690e-07	-2.0264939
1240	-6.860706e-08	-3.880328e-07	-2.0264939
1241	-1.630887e-07	2.062209e-07	-0.7878227
1242	-4.618980e-08	2.467261e-07	-0.7878227
1243	-3.715481e-08	-5.059251e-07	0.4508484
1244	-2.113369e-08	2.348173e-07	-0.7878227
1245	-8.176282e-08	1.070752e-07	0.4508484
1246	4.647883e-08	2.936799e-08	-0.7878227
1247	-1.168857e-07	1.985578e-07	-0.7878227
1248	4.647883e-08	2.936799e-08	-0.7878227
1249	1.160567e-07	-1.685718e-07	0.4508484
1250	-3.470151e-08	-9.952443e-08	0.4508484
1251	-3.470151e-08	-9.952443e-08	0.4508484
1252	-4.618980e-08	2.467261e-07	-0.7878227
1253	-5.155995e-08	2.467261e-07	-0.7878227
1254	-5.155995e-08	2.348173e-07	-0.7878227
1255	6.719190e-08	-9.952443e-08	-0.7878227
1256	-1.342462e-07	-1.333056e-07	-0.7878227
1257	-1.515521e-07	1.970886e-07	-0.7878227
1258	8.415691e-08	-1.333056e-07	0.4508484
1259	-1.601715e-08	-2.361709e-07	0.4508484
1260	-1.601715e-08	-2.361709e-07	0.4508484
1261	1.349984e-07	2.062209e-07	-0.7878227
1262	-7.622853e-08	-2.034791e-07	-2.0264939
1263	-5.155995e-08	2.467261e-07	-0.7878227
1264	-1.284737e-07	2.456690e-07	-2.0264939
1265	1.016230e-07	-3.880328e-07	0.4508484

1266	-3.715481e-08	1.070752e-07	0.4508484
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1268	1.261713e-07	-2.666957e-07	0.4508484
1269	-7.622853e-08	2.348173e-07	0.4508484
1270	1.233847e-07	-1.061189e-06	2.9281906
1271	1.160567e-07	-1.061189e-06	0.4508484
1272	-6.329219e-08	-3.585794e-07	0.4508484
1273	-8.765020e-08	-2.034791e-07	-0.7878227
1274	-1.457838e-07	2.062209e-07	-0.7878227
1275	-8.765020e-08	-2.034791e-07	0.4508484
1276	-8.176282e-08	2.348173e-07	0.4508484
1277	-6.860706e-08	-4.463323e-07	-2.0264939
1278	-3.715481e-08	2.456586e-07	0.4508484
1279	-8.176282e-08	2.348173e-07	0.4508484
1280	-6.329219e-08	-2.972509e-07	1.6895196
1281	-9.226623e-09	7.006332e-08	0.4508484
1282	-9.226623e-09	7.006332e-08	0.4508484
1283	4.647883e-08	-9.952443e-08	0.4508484
1284	-1.601715e-08	1.424063e-07	0.4508484
1285	-6.860706e-08	-9.952443e-08	-0.7878227
1286	-6.329219e-08	2.936799e-08	-0.7878227
1287	-8.176282e-08	-5.661138e-07	0.4508484
1288	-1.803936e-07	-7.512245e-07	-0.7878227
1289	1.358956e-07	1.424063e-07	-0.7878227
1290	1.358956e-07	1.424063e-07	-0.7878227
1291	-4.618980e-08	-1.333056e-07	-0.7878227
1292	1.160567e-07	-9.952443e-08	0.4508484
1293	2.539395e-08	-5.661138e-07	0.4508484
1294	-1.110413e-07	2.456586e-07	-2.0264939
1295	1.160567e-07	-9.952443e-08	0.4508484
1296	-1.342462e-07	2.348173e-07	-0.7878227
1297	-1.342462e-07	2.348173e-07	-0.7878227
1298	-3.470151e-08	-4.760093e-07	0.4508484
1299	-6.860706e-08	-5.059251e-07	0.4508484
1300	-1.630887e-07	-9.952443e-08	-3.2651650
1301	-3.470151e-08	-5.965950e-07	0.4508484
1302	1.142577e-07	-3.585794e-07	0.4508484
1303	1.211701e-07	-2.034791e-07	0.4508484
1304	7.914324e-09	-2.034791e-07	-0.7878227
1305	-1.400155e-07	1.970886e-07	-0.7878227
1306	-8.765020e-08	2.467261e-07	-0.7878227
1307	-2.113369e-08	1.720910e-07	-0.7878227
1308	-9.349256e-08	-1.685718e-07	-2.0264939
1309	-2.113369e-08	1.720910e-07	-0.7878227
1310	-3.470151e-08	1.970886e-07	-0.7878227

1311	-8.765020e-08	2.467261e-07	-0.7878227
1312	-4.618980e-08	-6.892409e-07	0.4508484
1313	-1.226949e-07	2.936799e-08	-0.7878227
1314	-8.176282e-08	1.720910e-07	0.4508484
1315	-8.765020e-08	1.720910e-07	0.4508484
1316	-5.155995e-08	2.467261e-07	0.4508484
1317	-4.618980e-08	-5.965950e-07	0.4508484
1318	6.719190e-08	-4.170075e-07	0.4508484
1319	-5.155995e-08	2.467261e-07	0.4508484
1320	1.430728e-07	1.901320e-07	0.4508484
1321	7.914324e-09	1.720910e-07	-0.7878227
1322	-4.618980e-08	-5.965950e-07	0.4508484
1323	-7.622853e-08	-2.666957e-07	-0.7878227
1324	1.233847e-07	-1.333056e-07	1.6895196
1325	-3.715481e-08	-1.746378e-09	0.4508484
1326	-3.715481e-08	-1.746378e-09	0.4508484
1327	-3.715481e-08	-1.746378e-09	0.4508484
1328	-3.715481e-08	-1.746378e-09	0.4508484
1329	-9.349256e-08	2.062209e-07	-0.7878227
1330	-6.860706e-08	2.467261e-07	0.4508484
1331	-6.860706e-08	2.467261e-07	0.4508484
1332	-1.284737e-07	1.970886e-07	-0.7878227
1333	-1.457838e-07	2.456586e-07	0.4508484
1334	-9.931010e-08	2.456690e-07	-0.7878227
1335	-9.349256e-08	1.985578e-07	-0.7878227
1336	7.914324e-09	-6.273476e-07	0.4508484
1337	-1.342462e-07	2.348173e-07	-0.7878227
1338	-1.342462e-07	2.348173e-07	-0.7878227
1339	-1.342462e-07	2.348173e-07	-0.7878227
1340	-8.176282e-08	2.936799e-08	0.4508484
1341	-8.176282e-08	2.936799e-08	0.4508484
1342	-8.176282e-08	2.936799e-08	0.4508484
1343	-9.931010e-08	7.006332e-08	0.4508484
1344	-8.176282e-08	2.936799e-08	0.4508484
1345	-8.765020e-08	-1.333056e-07	-0.7878227
1346	-8.765020e-08	1.424063e-07	0.4508484
1347	-6.860706e-08	-2.666957e-07	-0.7878227
1348	-1.688570e-07	2.348173e-07	-0.7878227
1349	-1.688570e-07	2.348173e-07	-0.7878227
1350	-9.349256e-08	-5.858043e-08	-0.7878227
1351	-6.329219e-08	1.985578e-07	-0.7878227
1352	-9.931010e-08	-3.880328e-07	0.4508484
1353	-1.284737e-07	1.070752e-07	-0.7878227
1354	-1.284737e-07	1.070752e-07	-0.7878227
1355	-9.349256e-08	1.985578e-07	-0.7878227

1356	-1.400155e-07	1.720910e-07	-0.7878227
1357	-1.400155e-07	1.720910e-07	-0.7878227
1358	-4.618980e-08	-1.685718e-07	0.4508484
1359	-1.051615e-07	2.348173e-07	-0.7878227
1360	-2.356543e-09	1.898802e-07	0.4508484
1361	-6.860706e-08	-9.952443e-08	-0.7878227
1362	-8.176282e-08	1.720910e-07	-0.7878227
1363	-2.356543e-09	1.898802e-07	0.4508484
1364	-1.168857e-07	2.467261e-07	-2.0264939
1365	-8.765020e-08	-3.880328e-07	0.4508484
1366	-2.113369e-08	2.348173e-07	-0.7878227
1367	-1.051615e-07	2.467261e-07	-0.7878227
1368	1.363442e-07	2.936799e-08	0.4508484
1369	-1.051615e-07	2.467261e-07	0.4508484
1370	-1.803936e-07	7.006332e-08	-2.0264939
1371	1.358956e-07	1.970886e-07	-0.7878227
1372	1.301463e-07	-3.280658e-07	0.4508484
1373	1.358956e-07	1.970886e-07	-0.7878227
1374	-1.342462e-07	2.062209e-07	-0.7878227
1375	-9.931010e-08	2.467261e-07	-3.2651650
1376	-9.349256e-08	2.202065e-07	-0.7878227
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[1471]	-0.7878226	-0.7878226	0.4508484	-0.7878226	-0.7878226	1.6895193
[1477]	-0.7878226	1.6895193	-3.2651647	-0.7878226	-2.0264937	-0.7878226
[1483]	-2.0264937	-0.7878226	-2.0264937	-0.7878226	-0.7878226	-0.7878226
[1489]	-0.7878226	0.4508484	0.4508484	-0.7878226	-0.7878226	-0.7878226

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[1519] -0.7878226 -0.7878226 0.4508484 -2.0264937 -0.7878226 -0.7878226
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[1579] 0.4508484 -0.7878226 0.4508484 -0.7878226 -0.7878226 -0.7878226
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$ierr
[1] 0
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$m
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[15] 1378  231    35   145   143   917   445  1476  1478  1317   199  1538  1112  1592
[29] 1270  997    50    13  1481   998  1053  1489   391   133   132  1120  1179  1492
[43] 1575 1299    39   147   862  1588  1127  1598  1596  1245  1273  1293   830  1132
[57]  832 1433 1337 1391 1339  1525  1408  1236  1410  1488  1338  1457   840  1599
[71] 1574 1523 1103 1152 1532   355   130  1517   908  1537  1256  1583  1347  1356
[85] 1357 1474 1434   108  1582  1584  1580  1578  1504   570  1196  1210  1490  1570
[99] 1416 1493 1462    81  1595  1539  1541   940   572   144  1262  1123  1591    26
[113] 1593 1106   610    85   757  1553  1548  1597  1128   729  1424  1461  1572  1571
[127]  728  192    49 1395 1412   730  1194  1028   846  1513  1514   847   849   850
[141] 1045 1511 1000   959  1495   427  1456   993   743  1329  1192  1240  1546   782
[155] 1176 1169   784  1125   495  1312  1177  1521  1518  1095   422  1212   426  1557
[169]   963   935   931  1296  1297  1370     53    68  1336  1590   842  1555  1453   134
[183] 1097 1067   592   397  1122  1389   401  1155  1535   258  1499  1531     52  1558
[197] 1520 1411 1187   347   823   824   837    11   838  1526  1506  1159   356  1185
[211] 1189    31   970  1585  1302  1325  1326  1327  1328  1567  1566  1390  1472  1543
[225]   185   1468    79   650   924  1487  1260  1259  1594  1448   918  1485   223    97
[239]   453   905   904   193   889  1308   869   867  1524  1213  1086   625  1579  1507
[253]   167   169  1466  1465  1463  1006  1004  1184   626   551   160   420   184  1211
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## Midterm\_WineQuality

[267]	860	1438	1382	1527	203	45	78	1375	671	1522	1500	1368	32	1449
[281]	1249	1447	1269	34	176	814	1515	777	778	1516	230	25	371	1046
[295]	1143	1042	86	1464	234	1498	149	1559	294	1444	277	269	1350	868
[309]	200	872	1443	300	528	346	120	821	1547	1195	418	216	64	179
[323]	205	1144	204	702	1023	1315	1314	1020	1496	734	1310	1188	1186	703
[337]	1569	440	1556	1258	1423	1093	697	455	1486	1285	1278	1439	1289	98
[351]	707	781	1536	90	1118	1117	698	1116	262	1399	979	1290	780	1048
[365]	771	1051	769	1031	1528	724	1530	828	962	826	898	687	988	992
[379]	825	896	994	660	844	819	793	413	785	877	720	157	255	1178
[393]	29	1479	1282	1491	1235	1238	1551	158	1250	1251	1253	1552	155	156
[407]	1287	1281	298	1172	316	1385	247	1509	1512	1119	1393	159	252	880
[421]	1483	884	1563	891	776	892	894	895	1298	239	238	236	237	1379
[435]	1404	1365	1355	1352	1349	1400	1335	1564	861	1376	1565	498	1589	864
[449]	866	749	1568	1533	1348	299	907	663	661	1209	1207	1206	1205	1193
[463]	65	105	66	183	1029	659	1134	1540	1073	1083	1085	1451	1267	865
[477]	1586	801	1266	716	1441	138	939	976	1450	977	197	1467	527	165
[491]	733	1418	588	1469	750	168	175	647	151	177	1440	520	1398	746
[505]	1445	84	1272	1554	41	873	40	60	1038	1032	910	123	915	1573
[519]	983	1145	1470	1141	811	1358	1503	250	1367	8	246	121	1581	1246
[533]	691	986	1104	1519	1542	1041	1133	1446	1247	1248	809	791	1387	1388
[547]	1359	848	1331	1330	902	903	909	1431	1	932	708	934	1442	1550
[561]	1102	83	304	374	174	19	187	222	164	315	310	6	386	5
[575]	153	613	863	1316	1257	67	1319	63	1381	275	1505	58	1252	154
[589]	1241	301	1508	1227	1501	1294	827	704	831	288	219	1422	662	547
[603]	1306	1311	1072	1034	1380	1075	725	1014	12	1587	170	1340	178	1344
[617]	1001	1341	43	768	10	1372	1274	1139	1576	1342	586	99	1305	856
[631]	1037	22	955	161	718	1454	564	1230	1047	1354	1353	1058	1300	836
[645]	1458	1403	1291	1233	1428	723	1343	810	870	148	882	1170	162	1174
[659]	1473	55	522	194	195	753	1175	933	630	307	283	633	1432	27
[673]	425	736	735	804	1030	996	989	1013	1025	1427	794	405	1494	737
[687]	1231	423	991	188	402	1497	94	603	878	353	88	47	226	1201
[701]	229	385	282	73	72	1199	71	639	1198	62	871	56	1066	243
[715]	1374	249	689	254	1420	1406	259	387	196	3	2	9	1255	14
[729]	1452	1147	1560	1561	163	166	37	1275	36	1332	756	30	755	1366
[743]	1562	1149	432	1232	220	709	107	215	111	829	501	115	125	1421
[757]	1419	1502	497	118	102	1429	139	646	338	209	82	323	1237	221
[771]	389	208	59	140	261	1283	264	1430	189	190	268	1402	271	1401
[785]	276	1027	20	372	91	1529	135	335	23	635	1197	1092	28	595
[799]	1510	1121	1217	1113	624	1080	7	770	1082	1200	1088	774	1202	775
[813]	312	1254	1460	171	1405	960	109	437	232	853	1394	1392	1534	70
[827]	1313	1070	1384	333	1383	1074	1304	1099	1063	717	1279	1364	1136	1276
[841]	1019	1018	1015	263	256	172	173	131	714	1105	682	1386	1577	124
[855]	1369	212	129	1288	18	38	1109	464	44	267	1033	686	146	690
[869]	1239	684	1223	758	727	218	110	759	1409	538	106	128	104	103
[883]	100	1484	1346	1151	953	1146	1005	1140	1024	361	1065	1181	1180	1218

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[897]	1107	1219	1295	1056	1168	1292	1055	1264	806	1480	1482	738	622	529
[911]	1407	1142	127	672	674	1377	858	240	235	614	1413	248	150	747
[925]	523	601	214	191	808	1426	948	1054	303	966	1425	779	754	952
[939]	752	137	142	1244	751	945	741	117	384	606	605	1111	383	381
[953]	462	1362	897	899	380	900	33	1156	1153	621	388	667	101	80
[967]	679	648	74	112	706	305	805	113	1459	719	136	721	334	141
[981]	394	1101	1545	225	807	922	920	919	883	928	1333	978	923	274
[995]	452	956	1052	233	683	961	968	974	965	1087	1166	24	1157	599
[1009]	1163	1265	17	1135	516	1277	678	693	93	92	362	87	655	1100
[1023]	925	926	916	449	929	1079	1078	1203	54	1098	1396	748	1026	224
[1037]	416	314	790	1261	802	713	568	629	631	636	217	1084	289	930
[1051]	567	291	1371	494	470	48	649	400	1284	797	1397	500	1039	406
[1065]	1373	76	415	879	51	611	767	760	763	975	1190	628	627	61
[1079]	608	42	885	792	119	1126	1162	202	579	578	181	937	936	835
[1093]	1216	876	468	964	180	77	122	16	15	901	21	186	999	182
[1107]	886	1114	596	457	949	712	1043	732	951	1040	227	280	1057	284
[1121]	1035	722	1060	241	337	1017	493	1012	1011	640	1009	950	126	1228
[1135]	228	1243	313	1164	1220	1165	1351	957	562	550	411	591	969	967
[1149]	740	694	695	887	726	783	761	739	593	563	373	1108	820	1062
[1163]	1324	352	1334	688	536	912	1076	350	1191	705	1323	1320	1131	412
[1177]	1008	1007	1003	984	429	765	531	1303	874	546	981	906	692	1361
[1191]	461	1226	541	881	458	1094	742	525	152	615	492	1171	766	676
[1205]	322	798	89	1050	491	1049	762	524	764	857	852	543	854	855
[1219]	69	911	851	1071	490	477	448	654	370	257	927	480	772	116
[1233]	607	666	800	799	482	914	699	378	1096	552	642	1044	773	731
[1247]	393	542	446	428	982	644	553	958	421	638	317	1154	637	941
[1261]	1214	201	472	476	390	479	349	921	320	1010	318	616	617	1307
[1275]	211	1173	710	1321	75	990	656	1309	569	521	1242	1182	944	817
[1289]	1263	685	673	321	652	1280	407	319	987	286	641	285	1204	1208
[1303]	577	474	1059	1077	1318	787	594	1477	1475	1167	414	1002	530	786
[1317]	715	645	1414	845	537	643	942	260	1129	1471	466	366	913	1091
[1331]	1415	326	512	1417	1148	1437	788	789	509	535	623	444	669	325
[1345]	995	1150	114	634	943	664	609	1036	839	893	795	973	1183	1436
[1359]	1435	506	57	946	947	954	488	487	486	1064	1160	573	1234	1215
[1373]	590	331	332	311	369	1081	324	328	467	309	308	279	534	306
[1387]	409	833	1138	518	971	972	293	1268	526	502	503	507	368	875
[1401]	632	1137	478	439	435	459	454	515	431	1016	504	505	574	475
[1415]	1224	514	1130	358	424	297	1161	580	417	548	483	575	342	485
[1429]	484	701	843	711	481	330	890	1124	888	657	496	499	651	513
[1443]	351	675	251	677	680	796	813	1110	816	296	818	1222	519	557
[1457]	1221	273	344	343	559	292	210	463	841	253	1069	1068	438	1544
[1471]	302	587	745	544	4	540	508	1549	668	620	670	1286	456	1022
[1485]	1021	281	379	469	404	619	465	618	399	270	357	1345	278	571
[1499]	398	272	198	376	377	744	1089	290	213	834	489	1061	1360	460
[1513]	1363	327	1090	859	1455	583	585	700	266	533	451	419	450	359

## Midterm\_WineQuality

[1527]	336	532	433	442	345	598	363	408	242	396	658	287	938	584
[1541]	665	403	341	980	985	582	581	576	434	436	597	511	549	339
[1555]	473	517	265	340	364	410	447	441	815	1225	360	566	561	395
[1569]	600	365	430	367	207	206	812	539	471	565	560	602	604	612
[1583]	510	681	295	329	354	382	392	348	375	545	245	244	555	556
[1597]	558	443	653	951	949	950	1567	1287	1510	1231	302	1018	1430	278
[1611]	272	270	1157	1019	1088	1132	292	1460	1146	355	519	874	244	245
[1625]	956	531	1144	21	536	926	1491	455	1427	1107	1234	1061	573	927
[1639]	1413	1407	507	505	478	431	424	372	1114	1126	611	1136	845	1542
[1653]	1076	521	807	1193	1426	971	858	504	1425	972	281	1091	463	1199
[1667]	383	384	680	266	402	381	964	1509	827	1216	329	1081	795	378
[1681]	282	942	477	534	576	370	664	1304	837	481	912	475	340	1406
[1695]	373	17	859	1011	838	1135	948	584	1480	632	952	806	1482	4
[1709]	808	818	1459	1003	466	590	1007	1064	1245	1529	510	1127	310	48
[1723]	1409	564	640	990	1577	1280	936	1008	937	945	206	207	85	210
[1737]	1403	1082	1080	198	482	1108	915	910	1587	406	260	1068	1069	1099
[1751]	1575	186	710	724	1094	953	587	901	580	1495	876	883	114	899
[1765]	1599	50	618	1037	1027	897	839	545	548	441	465	916	1415	69
[1779]	1145	1417	1452	1523	1517	1221	201	75	35	279	1077	1356	20	1012
[1793]	489	1163	1024	1585	1222	251	471	1168	261	1215	1151	1484	930	585
[1807]	941	748	1404	654	1236	459	1071	109	975	454	151	1054	1113	1029
[1821]	994	747	1169	670	668	257	369	992	498	891	966	575	1101	974
[1835]	295	341	1092	987	1087	954	409	1418	221	1218	143	1202	145	1357
[1849]	1323	995	474	1002	873	268	496	1150	499	316	549	571	539	1180
[1863]	1073	1181	1581	786	253	787	635	1009	1473	315	570	610	922	957
[1877]	1133	572	1224	1314	1315	1022	1021	1324	1006	469	1004	483	484	1175
[1891]	988	332	331	919	1161	653	1205	855	1206	1550	1207	857	1571	854
[1905]	1209	1511	294	1174	1171	527	520	1545	264	1303	1078	192	273	396
[1919]	473	393	1242	233	1036	433	791	798	452	1265	1079	620	1286	202
[1933]	958	1441	1451	875	1572	1083	38	1142	177	175	939	1017	447	54
[1947]	1505	1063	1214	419	390	1508	242	612	1271	911	360	1450	130	973
[1961]	700	533	232	532	690	967	1437	704	1085	528	1540	1044	614	1045
[1975]	1333	989	22	408	523	26	745	495	434	89	144	1016	451	592
[1989]	450	814	60	1586	490	436	991	1534	1119	1220	1149	1182	1225	344
[2003]	1210	343	187	1293	914	675	524	493	25	442	597	1422	933	671
[2017]	979	1191	1141	993	49	1096	1219	116	677	513	1243	1549	150	61
[2031]	1434	775	969	288	774	414	1124	665	280	1277	1115	1062	284	1183
[2045]	77	1090	492	1160	676	357	1159	744	607	1089	815	76	633	1139
[2059]	259	1428	1039	1148	439	1431	921	918	27	435	924	375	1269	522
[2073]	308	977	107	1249	976	392	382	138	529	1229	204	1112	650	290
[2087]	511	662	1203	1525	853	841	342	358	1084	760	366	57	1154	1345
[2101]	863	1285	589	723	380	1058	1461	173	172	1173	822	1048	852	156
[2115]	1432	851	28	779	657	205	955	1496	1051	158	651	552	1129	157
[2129]	411	1230	226	155	1130	1005	309	1001	1233	681	1196	337	338	1358
[2143]	229	943	461	359	717	1186	525	714	1268	23	1188	82	1504	946

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[2157]	578	1212	947	213	562	833	1544	444	502	503	209	1346	1272	1318
[2171]	485	1166	1046	328	407	1433	1531	1263	591	1143	593	1162	377	438
[2185]	412	734	362	813	287	40	81	980	985	893	682	1455	41	816
[2199]	1379	619	797	1584	826	782	784	828	683	718	913	1226	542	330
[2213]	313	553	468	1328	1327	1326	1325	940	364	1052	604	410	602	739
[2227]	389	1282	1281	1273	560	961	655	1110	965	546	925	1412	834	695
[2241]	696	1527	929	1478	1476	314	579	565	1123	877	1519	1363	1360	231
[2255]	448	1103	1390	1086	1469	1467	825	535	1060	722	1057	1526	403	649
[2269]	1524	608	1522	755	694	417	1105	1134	810	219	583	811	708	594
[2283]	1270	148	716	149	216	1042	1049	693	348	1454	94	1458	43	24
[2297]	1102	105	667	325	1104	326	92	93	1391	506	339	88	867	190
[2311]	1378	87	843	1043	749	1147	1170	1122	1050	1040	1477	1339	1366	1337
[2325]	812	1405	944	1475	984	800	981	799	1010	1338	1020	840	102	98
[2339]	176	134	10	658	203	125	12	132	133	467	53	191	540	569
[2353]	189	83	296	577	581	582	1340	1341	1342	1344	1140	817	1158	55
[2367]	1023	868	1410	1408	514	515	586	750	1570	746	385	1593	1312	551
[2381]	624	1597	1137	291	67	178	91	1138	415	289	283	230	1329	152
[2395]	888	263	497	501	429	1394	983	659	909	234	661	63	1576	1541
[2409]	780	1067	1100	805	1098	52	46	1059	1528	1521	1533	550	1419	557
[2423]	1518	1537	559	1111	354	1223	163	211	1298	220	222	249	742	327
[2437]	449	1421	301	1424	306	809	312	311	621	269	1121	1368	645	1497
[2451]	387	1457	1435	907	472	643	1436	641	1494	1492	1423	824	1343	563
[2465]	277	753	823	1489	1093	631	1361	117	376	629	1167	709	271	103
[2479]	100	276	802	194	195	168	731	86	1591	374	432	293	1596	656
[2493]	119	547	122	1032	1246	1248	1536	1237	804	970	1582	860	118	115
[2507]	1580	881	1569	719	788	349	789	111	421	962	735	317	1244	1535
[2521]	1376	18	872	453	908	869	334	721	622	265	1556	140	139	1514
[2535]	712	1266	1267	959	963	729	1490	445	781	1380	1381	1395	1034	1414
[2549]	663	829	889	1106	208	345	1217	214	1201	1198	1547	256	773	728
[2563]	1350	368	104	106	1453	906	243	1125	1197	623	1200	1152	1483	1449
[2577]	418	1444	460	1336	1015	1416	1355	1372	1030	1025	1155	605	1228	598
[2591]	1258	333	197	1274	1275	1227	11	761	986	1574	1538	1252	9	363
[2605]	599	803	1503	767	285	398	644	1031	1398	286	399	59	785	1466
[2619]	19	324	1465	771	769	1439	666	960	898	1172	905	978	904	227
[2633]	600	457	574	1257	196	896	642	738	129	165	509	512	541	1347
[2647]	596	164	1153	1548	1560	1561	1562	1251	7	1595	1250	1288	37	1383
[2661]	1384	1351	1399	113	255	1331	96	252	248	1330	153	1131	1474	154
[2675]	160	1299	1290	1289	1156	884	606	768	566	794	395	880	561	404
[2689]	616	617	628	627	517	996	1053	1365	34	1370	223	832	934	879
[2703]	830	793	42	935	931	14	180	518	101	885	1241	184	1588	182
[2717]	1311	181	1066	1176	1306	801	322	932	367	462	699	13	365	743
[2731]	1352	861	456	185	920	1070	1310	15	56	112	323	440	923	174
[2745]	16	90	1594	865	307	126	1393	1481	1074	864	379	217	80	1559
[2759]	895	870	166	298	239	1443	1447	1284	237	71	236	1464	1546	1319
[2773]	530	537	1297	850	108	386	1296	58	790	458	169	193	938	1316

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[2787]	1292	902	903	1261	225	866	1295	778	241	1488	1185	1256	646	703
[2801]	1359	846	847	1429	167	1539	1392	849	1389	1259	1056	1055	1420	792
[2815]	613	526	1387	1463	688	1388	1189	1260	36	555	1353	30	556	1598
[2829]	224	488	238	1354	1301	558	754	275	702	1493	751	752	8	305
[2843]	609	687	1211	1213	299	697	698	335	516	33	1486	764	762	1348
[2857]	1349	321	720	319	726	388	544	44	1178	1321	1184	892	894	689
[2871]	997	998	1589	820	6	246	464	250	968	51	842	1254	1120	353
[2885]	394	836	1566	1552	766	351	1579	146	647	437	1400	427	45	1240
[2899]	508	1440	1445	1448	487	300	84	928	72	304	486	74	1397	31
[2913]	1308	1553	162	479	765	159	147	1551	476	247	848	1487	831	630
[2927]	821	1396	772	844	835	32	443	480	346	1512	1573	1278	1530	1309
[2941]	1117	1307	1118	405	120	1402	1401	713	500	1471	1116	740	73	626
[2955]	625	494	62	1000	1565	258	1563	1568	1564	123	336	568	1	763
[2969]	1472	1578	567	1255	361	1520	5	68	1532	70	188	303	170	124
[2983]	1014	29	882	1583	878	1276	819	871	1279	137	543	917	274	142
[2997]	1208	1253	727	770	595	1097	416	1095	66	218	212	1501	1590	65
[3011]	674	672	669	1239	183	588	413	401	215	446	1554	856	64	397
[3025]	1204	1498	1291	1322	1500	1247	1367	1065	1317	715	1592	141	1195	131
[3039]	136	1035	79	356	1238	886	1374	1235	1385	1294	615	3	741	1320
[3053]	1506	1128	371	705	400	777	1283	420	1075	1072	1369	318	320	254
[3067]	491	1334	97	1109	686	1371	679	1373	428	707	1264	684	1047	1164
[3081]	350	1446	1442	110	78	1165	1462	1305	1513	352	1028	887	1187	678
[3095]	179	1507	1386	1375	347	1232	1033	783	228	1502	470	538	1364	297
[3109]	1382	1026	733	603	199	1335	636	422	999	1516	1515	660	430	426
[3123]	648	1362	391	1555	1543	1558	1302	982	730	267	1332	758	759	1479
[3137]	732	1557	652	637	1177	2	1377	638	171	1194	1192	796	1499	99
[3151]	890	1456	756	1485	1038	1438	639	1179	601	692	47	634	161	1190
[3165]	1411	423	425	1041	736	737	262	1470	685	757	776	235	240	1013
[3179]	862	95	1262	900	701	711	706	135	554	1468	121	200	725	39
[3193]	1313	691	673	127	128	1300	1	250	781	252	776	246	239	238
[3207]	237	236	1179	1178	255	258	1192	346	713	720	738	740	743	758
[3221]	759	763	267	794	1176	877	145	143	882	1128	889	128	127	124
[3235]	123	1125	1131	1554	1172	803	819	821	822	1155	842	1551	179	1552
[3249]	159	350	1194	352	1291	1370	1283	1375	1278	1273	1264	1262	1260	1259
[3263]	603	1294	1296	1335	1337	1338	1339	1322	1317	1350	1301	1300	1299	1297
[3277]	1391	1254	1416	1423	1429	1229	1433	1439	691	1448	1456	1462	353	1237
[3291]	1411	1253	613	1400	625	420	626	636	1240	1239	1408	1410	1123	997
[3305]	998	32	1111	8	986	908	1120	30	97	1028	1041	1031	6	1014
[3319]	36	2	1122	1047	13	1046	29	5	1033	78	1026	1000	1251	1032
[3333]	871	335	1553	551	445	931	932	934	935	1025	785	1352	770	1347
[3347]	1271	757	1030	1464	1235	1421	1232	896	648	1449	898	134	1419	1250
[3361]	1238	356	878	660	771	900	1211	45	1213	397	793	963	401	470
[3375]	1365	769	1440	1443	347	1453	703	702	1256	1390	728	729	1447	698
[3389]	371	1496	1445	697	299	1381	1506	1380	696	1543	147	1547	1555	856
[3403]	1342	162	9	1341	1558	1340	1343	1566	183	1344	1336	168	426	872

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[3417]	153	1463	154	1349	1348	171	1187	733	730	870	1498	1500	453	161
[3431]	1481	780	263	1270	1354	1177	894	1353	1355	422	1227	892	895	262
[3445]	719	163	1501	1489	95	269	126	1513	277	1512	176	721	122	1499
[3459]	1492	52	53	884	705	231	3	119	56	1557	689	840	223	880
[3473]	405	323	1266	647	1488	391	960	174	66	70	1190	1470	783	65
[3487]	64	1053	1479	1267	1507	135	1457	996	7	1493	99	1255	1393	904
[3501]	663	1485	905	200	298	271	1518	232	276	861	249	300	301	1521
[3515]	864	865	756	659	1118	1116	386	1117	31	247	661	1528	1134	169
[3529]	1387	1388	866	1247	1184	1302	831	286	285	68	1537	11	120	1530
[3543]	707	1067	1086	144	804	832	215	1288	1367	830	1595	427	1034	723
[3557]	1541	90	334	1474	1472	1594	801	1520	1538	1468	1527	19	1526	71
[3571]	199	39	1592	1023	121	112	1539	1424	829	1366	802	1103	1582	291
[3585]	289	727	1382	1580	1065	1461	1495	970	240	1093	1308	1095	1531	235
[3599]	132	133	1097	1295	1333	1292	1396	1397	1310	1596	446	646	1490	736
[3613]	737	751	752	754	766	243	1532	811	1109	188	1548	836	167	149
[3627]	903	902	113	725	679	1466	993	1038	1465	1583	678	136	141	203
[3641]	1143	1329	67	480	765	1588	1471	718	1478	24	1476	920	79	923
[3655]	809	320	193	887	58	1147	34	1119	318	418	991	288	303	283
[3669]	118	1195	959	304	709	639	1399	1598	33	989	1569	909	1564	1563
[3683]	1565	1568	1597	606	605	732	1593	753	1275	1533	1536	824	1293	823
[3697]	828	1298	826	1252	962	633	666	782	784	886	1020	180	1535	1570
[3711]	1362	37	228	1572	1395	25	181	706	1312	1013	137	130	1514	1379
[3725]	142	1591	86	820	1139	1579	1385	1578	46	1212	55	388	63	1486
[3739]	848	217	413	129	1434	1015	26	172	1359	940	173	790	1048	1051
[3753]	1556	125	726	96	595	778	792	248	656	599	687	716	1066	777
[3767]	440	15	100	103	767	59	750	749	1422	1503	881	746	275	160
[3781]	615	1035	1158	928	1442	610	1246	1446	917	1248	111	817	16	1525
[3795]	879	219	1042	1285	140	1204	115	885	708	139	325	1272	1590	43
[3809]	184	1241	274	1522	1444	906	233	423	1574	1281	326	80	81	1282
[3823]	1072	1274	1377	968	1075	425	735	1132	175	1201	674	1420	177	635
[3837]	1043	1040	1305	1511	1515	760	1516	1313	1314	1315	28	23	1029	195
[3851]	194	1487	1402	1401	850	1198	849	672	847	846	458	185	1196	351
[3865]	218	805	374	860	449	1334	1244	106	1383	1384	1257	104	1392	634
[3879]	428	73	44	623	867	400	1279	1223	869	462	1276	1197	49	1152
[3893]	1189	361	1145	72	317	622	264	293	739	1226	868	1185	682	893
[3907]	495	684	686	688	1200	256	630	261	1346	541	552	543	554	544
[3921]	553	547	538	537	1328	1327	1326	1325	27	526	530	671	788	531
[3935]	789	534	535	536	742	479	873	577	891	722	105	586	588	589
[3949]	621	416	692	1431	572	1358	212	814	1165	476	312	1164	567	568
[3963]	170	570	1140	234	230	35	229	98	1153	1156	192	1058	226	224
[3977]	1524	497	1386	1394	1228	624	294	501	761	1245	1517	652	1523	1356
[3991]	1414	1357	1561	1560	1378	148	1376	1311	88	322	389	631	629	1199
[4005]	165	982	94	1306	387	84	835	91	164	1494	1127	1331	1398	74
[4019]	222	1332	762	764	1073	772	1330	214	51	1562	1167	1497	929	491
[4033]	961	965	1364	1319	1316	773	907	638	1055	1104	1112	925	601	1056

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[4047]	1102	1374	650	1169	1284	385	637	117	699	92	333	992	825	994
[4061]	38	209	87	18	1106	837	838	715	1258	448	774	14	1584	1351
[4075]	933	1502	741	1170	1005	1233	883	93	1230	1438	628	1542	627	315
[4089]	316	978	101	102	437	1406	1085	1083	988	1550	724	42	197	1188
[4103]	314	1001	1534	1186	796	775	984	981	402	649	1289	1290	1368	779
[4117]	1141	977	1144	976	512	1012	22	1389	60	500	494	1361	1269	1174
[4131]	662	116	797	1175	390	349	208	810	362	313	108	509	683	1432
[4145]	924	695	1217	918	1219	1450	853	1142	307	979	1307	338	1469	1309
[4159]	1303	1540	1467	983	1151	1451	694	1441	685	768	1573	280	922	919
[4173]	1027	284	1265	1236	498	863	1369	1004	1006	190	816	220	1181	1007
[4187]	1180	813	1003	1546	196	189	927	1249	421	1074	1418	1428	1129	1559
[4201]	1581	1404	1045	1589	429	1454	1458	1036	1037	1105	1121	1407	1076	1133
[4215]	1171	1231	1321	1413	944	858	673	999	1008	827	890	415	712	800
[4229]	799	734	411	204	432	1154	839	412	844	1135	1070	640	1130	1126
[4243]	191	1460	1094	926	205	54	138	901	488	225	1409	667	12	40
[4257]	1202	10	714	41	717	1050	1049	1010	1427	1426	1436	921	609	1124
[4271]	1425	297	874	1234	241	1435	1218	257	1193	221	50	1018	1019	1002
[4285]	614	930	937	939	1100	310	1098	936	1263	888	1437	380	747	897
[4299]	857	657	1168	987	910	487	964	676	807	899	1405	1203	486	855
[4313]	1114	457	330	321	319	481	915	1280	1504	1242	651	854	1324	806
[4327]	1576	490	455	61	808	955	748	372	1277	1459	355	1430	1017	1009
[4341]	1510	1412	1183	990	1220	966	466	953	943	1363	1360	876	1087	916
[4355]	477	787	786	1587	967	596	608	1044	1243	1108	1113	620	1039	677
[4369]	975	675	1054	155	472	1214	1107	505	1403	1101	254	308	946	324
[4383]	1024	1323	158	1088	818	1163	381	833	156	157	1149	467	178	1544
[4397]	383	1092	384	1160	47	1146	1159	1210	1110	1162	669	1182	969	711
[4411]	1545	1136	701	791	281	1484	644	642	114	309	150	1287	1452	913
[4425]	798	244	245	1304	974	1586	89	852	1585	851	251	834	1063	600
[4439]	951	950	1099	1071	468	337	668	1137	1138	1148	1084	949	1011	279
[4453]	995	670	645	643	843	641	680	1206	268	664	1016	914	845	912
[4467]	507	1318	1519	406	1173	1205	1216	296	1207	1215	875	1209	504	424
[4481]	407	431	201	1224	151	1096	655	83	710	260	1599	859	1150	841
[4495]	343	344	187	911	166	373	85	952	954	1345	971	972	21	948
[4509]	202	302	292	607	690	311	253	704	342	513	306	1491	62	511
[4523]	404	410	265	478	182	1529	216	444	585	569	566	565	564	563
[4537]	562	561	560	559	558	557	556	555	550	549	548	546	542	571
[4551]	573	1225	593	592	591	590	587	942	584	583	582	945	581	580
[4565]	579	578	576	575	574	539	522	528	519	520	521	980	523	533
[4579]	524	525	532	529	527	518	517	516	985	345	616	938	619	328
[4593]	1268	1549	973	1286	1477	617	1475	1115	377	341	492	366	227	1166
[4607]	1062	270	272	278	493	1157	1373	419	618	475	597	20	1371	693
[4621]	295	957	602	357	461	369	941	956	110	604	665	266	393	1222
[4635]	48	1221	958	336	1069	1571	496	414	370	290	1068	1057	1060	452
[4649]	499	109	378	75	1483	815	632	340	745	795	1091	1090	403	465
[4663]	1089	611	612	489	508	473	812	287	700	146	1208	439	435	474

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[4677]	131	1372	1081	1077	482	4	17	242	1059	1161	69	1191	1061	57
[4691]	1508	1505	186	744	681	273	598	594	947	210	409	339	483	398
[4705]	658	654	399	1417	1415	1052	447	211	305	484	1473	1482	1480	198
[4719]	1509	394	368	329	436	434	459	1577	430	1455	506	364	375	454
[4733]	76	1567	77	213	515	417	514	332	331	395	442	1079	1078	471
[4747]	653	1064	365	367	363	379	408	360	460	1022	731	862	327	1021
[4761]	358	359	348	456	1320	485	463	392	755	107	282	382	1261	1082
[4775]	1080	469	451	450	433	82	464	376	441	438	503	502	207	545
[4789]	540	206	510	396	259	443	1575	354	152	1018	1019	910	1317	915
[4803]	8	199	1375	470	1322	696	1393	429	162	1220	50	999	987	985
[4817]	980	1360	1363	938	1495	1111	1339	1162	201	1299	1123	1310	95	1471
[4831]	1081	1052	1046	1337	1338	1377	1254	26	661	659	658	636	1425	391
[4845]	1426	355	406	1484	134	872	80	1071	440	1201	223	203	1090	1198
[4859]	1098	1100	176	1113	614	1089	1481	855	1501	857	990	39	854	1002
[4873]	836	302	67	917	833	204	850	205	554	1548	1577	1171	1184	168
[4887]	455	881	148	874	1456	125	1114	839	1014	710	251	705	689	372
[4901]	663	662	1569	231	988	798	818	1088	962	834	940	835	1005	304
[4915]	1493	1437	81	1397	68	1416	28	7	1272	48	1422	49	1271	13
[4929]	1396	1421	14	23	1433	1419	1370	1182	1000	107	1280	1175	1042	1164
[4943]	1141	1466	1135	249	1174	1165	1465	1136	755	1327	859	1326	1592	1328
[4957]	1325	1373	1049	845	1320	1103	1404	1371	241	803	1047	310	1333	1126
[4971]	763	1127	108	1340	1343	261	1011	263	144	1459	402	1237	1241	974
[4985]	1344	1247	475	1489	453	127	991	445	989	121	1528	592	1341	1132
[4999]	1556	674	672	1367	1492	51	166	1580	163	1439	1342	1208	1582	1460
[5013]	18	1444	1157	869	920	1591	1357	1385	951	1382	45	923	1588	949
[5027]	950	1491	860	664	20	373	17	1514	11	1427	545	1550	507	505
[5041]	6	488	1546	1540	478	1431	452	420	1434	667	687	1387	1388	35
[5055]	849	848	847	846	343	344	1506	27	775	774	1411	120	729	728
[5069]	1510	690	21	1356	62	1474	147	146	145	90	143	1323	1324	1086
[5083]	1085	85	142	1083	84	1579	1073	232	1062	1061	115	1222	111	170
[5097]	171	1203	1196	1195	1190	184	1147	1144	154	1133	153	1286	1221	1304
[5111]	208	1122	1329	1051	1229	1348	1270	1265	255	1020	259	264	1004	1248
[5125]	1006	266	128	129	1246	1261	1025	1457	1050	1257	1253	1048	243	1038
[5139]	1349	252	137	130	1030	1032	1218	1543	1215	1255	640	1429	1214	635
[5153]	1458	501	1537	497	504	1538	487	486	1534	550	584	588	1522	598
[5167]	1219	623	1354	1202	1273	933	931	926	1027	1494	1448	1496	1497	893
[5181]	1063	935	1365	956	1353	984	982	981	1488	972	971	965	1447	961
[5195]	852	851	756	1282	743	1131	1281	1	1166	1278	681	1454	770	1291
[5209]	1294	1091	1443	1107	1313	1311	821	1449	809	1306	1124	428	94	239
[5223]	73	92	71	70	190	136	337	388	126	1566	219	185	389	63
[5237]	346	100	29	117	1570	247	174	1594	413	88	4	5	91	87
[5251]	103	160	141	192	102	82	236	237	238	254	418	211	597	1450
[5265]	1112	781	1108	1453	589	387	1451	1302	393	1077	227	225	224	807
[5279]	1525	1524	1319	222	1316	221	93	934	98	217	1092	1093	1283	198
[5293]	1199	172	173	175	1188	719	138	721	1186	177	1243	140	665	666

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[5307]	364	1210	693	361	1217	161	673	707	670	668	1228	1167	131	189
[5321]	762	764	384	1140	1274	1138	1137	110	1521	196	757	1269	1149	735
[5335]	182	381	1507	186	118	1262	187	1518	383	1150	1076	83	30	1394
[5349]	1547	873	1008	1595	870	419	868	1379	312	292	262	1376	1012	437
[5363]	1015	862	1598	1398	958	449	1414	1564	1565	1563	287	986	1568	1441
[5377]	467	964	1406	891	1403	992	993	960	994	477	996	9	1562	1533
[5391]	1485	246	1351	298	64	522	423	69	932	1335	1055	824	823	1056
[5405]	1065	425	79	394	547	844	1560	1549	250	330	946	1561	1364	1007
[5419]	1003	300	948	1206	968	1185	697	1509	976	1490	169	952	957	698
[5433]	305	700	167	1189	702	954	963	1205	703	1462	1179	1173	977	1023
[5447]	1110	1031	213	1106	1104	1102	1101	1099	1469	1486	334	1470	242	832
[5461]	830	822	1483	814	258	1013	210	733	983	736	737	1567	746	1158
[5475]	749	750	1154	882	878	875	871	1487	200	202	1119	1467	1207	551
[5489]	1526	89	1584	543	1530	1330	1331	538	536	534	1303	574	106	104
[5503]	601	599	385	1292	101	1295	1298	1300	531	74	72	469	465	1408
[5517]	1410	448	446	1423	431	1432	427	1402	1401	1347	518	513	53	1369
[5531]	46	1383	1384	38	474	1275	1213	424	151	1230	1216	1233	1512	1212
[5545]	1209	1211	139	1301	442	47	1017	484	257	1554	52	1016	374	1445
[5559]	483	44	1224	1223	1390	245	1536	76	1234	1334	244	159	1043	840
[5573]	1041	1040	1511	61	512	509	1366	1028	1368	877	1399	1417	1544	417
[5587]	1420	908	682	953	441	916	1596	919	307	1430	922	432	941	928
[5601]	1542	1415	1001	1573	1572	479	998	997	1400	476	675	1571	676	677
[5615]	464	895	1409	460	1440	657	77	1235	194	195	105	604	639	1125
[5629]	602	1249	1172	583	582	1105	581	788	789	214	580	135	1252	112
[5643]	122	119	1557	1160	1455	1264	628	627	1519	1156	1155	1153	116	758
[5657]	759	618	113	615	1176	1576	1527	1529	1513	1476	724	86	651	1478
[5671]	1069	1068	1238	1531	1318	570	648	1094	218	572	683	1267	1200	1266
[5685]	1268	1463	1194	1597	1593	1346	240	1192	3	1054	299	936	937	1468
[5699]	235	1161	944	1378	1461	959	1352	1197	248	59	1361	1314	149	1250
[5713]	96	132	1285	133	1170	1251	178	22	1145	1391	114	24	33	1305
[5727]	1355	1276	1279	1024	1163	644	620	617	616	1500	769	892	771	894
[5741]	896	898	1552	1523	371	1545	1508	630	340	731	638	641	508	395
[5755]	642	643	400	323	645	523	829	1517	827	867	1551	717	457	1505
[5769]	422	795	786	577	436	433	925	434	921	678	787	426	714	927
[5783]	685	1499	773	600	669	929	461	1498	819	837	1053	1036	777	60
[5797]	784	782	783	1256	838	1464	514	515	1293	353	1585	573	613	386
[5811]	197	562	1315	772	808	1084	806	215	586	78	525	1143	1059	220
[5825]	530	1064	341	1066	1067	1336	637	1535	902	472	412	899	897	378
[5839]	274	1181	31	887	1180	655	1178	973	370	903	430	1581	1555	308
[5853]	294	309	421	909	1412	25	966	967	969	356	1392	265	181	778
[5867]	1244	740	1021	1022	537	1558	1587	37	1574	1503	180	1183	1193	1117
[5881]	1225	671	1263	1116	747	709	380	179	652	1152	753	629	1118	1287
[5895]	631	1242	1168	760	738	1146	611	109	1239	1142	123	1121	1120	183
[5909]	856	1029	1362	1358	1035	1037	335	520	289	524	831	1418	527	528
[5923]	853	858	32	884	1539	880	407	886	1589	492	889	411	316	864

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[5937]	498	291	75	1309	995	306	1307	1504	296	797	99	1096	793	785
[5951]	804	1428	568	813	544	311	363	816	390	567	548	463	2	684
[5965]	686	447	368	1583	1232	473	1226	471	1405	679	462	468	490	546
[5979]	549	1321	1520	606	603	595	569	590	591	1288	529	1345	1586	493
[5993]	1381	1380	43	496	499	403	399	593	398	124	301	362	692	1034
[6007]	843	234	230	229	742	228	748	811	1473	352	226	188	345	796
[6021]	794	791	780	207	206	329	718	350	315	704	907	901	978	888
[6035]	943	866	715	260	297	360	303	841	805	612	1129	347	209	955
[6049]	1452	293	1284	587	444	342	415	863	861	865	405	521	532	533
[6063]	535	480	1074	553	723	404	458	564	768	716	1231	619	734	1260
[6077]	351	632	695	745	1259	1350	519	338	828	826	825	526	233	649
[6091]	1169	1070	1532	739	744	815	654	812	727	939	694	313	450	451
[6105]	454	459	150	711	369	482	489	876	491	42	1010	324	1026	55
[6119]	510	552	1159	566	578	1151	810	761	561	212	765	349	722	790
[6133]	792	318	656	332	331	624	579	320	191	506	466	970	392	751
[6147]	752	767	913	563	754	1128	701	382	605	358	314	288	494	283
[6161]	277	776	906	712	408	348	708	269	766	377	842	726	357	339
[6175]	97	54	633	1312	1482	1480	500	359	725	688	883	576	1372	253
[6189]	319	438	321	439	713	699	817	256	820	435	575	333	730	295
[6203]	610	541	1109	930	680	608	1130	267	290	1045	571	802	366	322
[6217]	152	57	317	622	1386	621	900	285	286	585	779	634	336	732
[6231]	282	594	1599	1009	979	268	800	799	281	647	327	409	1553	443
[6245]	1139	1472	945	1332	193	1374	911	375	15	56	1308	1395	16	720
[6259]	1424	1058	272	276	271	885	270	879	801	278	1057	1060	273	947
[6273]	485	1033	1227	1515	1516	556	555	396	741	558	691	1115	1297	1240
[6287]	1502	560	565	1296	517	1541	19	376	660	328	410	1290	1289	914
[6301]	557	511	559	1191	607	66	65	1087	354	1258	1438	942	1413	1407
[6315]	609	1578	58	540	456	1442	1446	1359	1095	1097	1134	155	36	158
[6329]	156	157	1177	625	626	284	216	280	1479	1204	367	365	539	975
[6343]	40	41	905	706	904	646	516	10	1389	12	1148	1039	379	542
[6357]	1277	1078	1079	279	503	502	416	890	414	1559	275	165	164	653
[6371]	1590	1187	397	401	596	1072	1075	1082	495	1080	650	924	918	1044
[6385]	912	34	326	325	1236	1245	1475	1477	1575	1435	1436	481	837	838
[6399]	696	798	1572	862	211	1491	689	1317	1322	1179	807	1433	1158	1484
[6413]	1143	1152	1229	1220	803	1270	427	95	391	1132	199	1427	1045	1115
[6427]	423	425	1081	1511	1106	1271	1409	822	1476	1490	1478	1548	1018	133
[6441]	132	1430	1272	1019	1489	1492	999	827	664	1082	1080	1493	1457	143
[6455]	145	1277	554	45	495	1403	1178	954	1456	1199	1439	493	806	337
[6469]	808	1583	488	1582	724	1580	231	445	1500	1498	859	210	1460	1461
[6483]	1542	486	487	46	1236	925	929	1126	794	1123	1087	1000	492	1347
[6497]	1293	1113	372	901	1570	201	1450	1288	1234	223	1338	757	1071	1240
[6511]	1337	1339	1088	1218	1243	1323	1444	96	965	831	171	1533	614	1131
[6525]	756	953	1002	961	590	213	684	1235	910	686	669	426	422	1538
[6539]	1567	915	1546	406	402	597	1238	1576	437	1324	680	214	216	937
[6553]	589	1069	1462	904	936	905	134	1068	1485	1135	1404	927	330	1470

[6567]	1513	1150	1566	1585	200	979	474	1407	1406	94	88	310	1596	1280
[6581]	710	440	1510	1023	1451	1453	1001	1555	1122	845	1171	1467	1469	1558
[6595]	1413	1441	251	1299	311	930	1346	1193	395	1127	1518	1465	455	371
[6609]	306	580	1007	407	1003	1466	1521	1531	1545	1530	676	1543	1303	1298
[6623]	871	1535	1312	1008	1418	878	1544	1527	1410	265	986	1408	400	542
[6637]	926	1526	1556	913	966	1202	743	1540	468	981	984	8	1144	829
[6651]	342	1416	1028	129	1587	235	636	1352	1119	240	795	438	38	431
[6665]	649	424	49	697	702	420	698	1027	1588	1231	1586	1557	1265	836
[6679]	1145	355	987	341	1431	1120	144	539	972	1488	396	333	971	888
[6693]	1495	1011	346	1136	1006	1169	1004	373	1065	1151	874	873	1468	728
[6707]	1599	729	548	1459	640	877	863	1245	1472	283	703	198	180	181
[6721]	825	179	1308	1581	802	811	53	1400	1391	709	1589	1499	302	650
[6735]	939	1512	1203	1594	1108	1017	442	1268	1287	882	1290	1289	969	174
[6749]	1182	1183	81	85	1107	1432	763	716	52	7	1201	481	1198	1256
[6763]	1044	1573	1336	1351	467	44	1370	208	1434	1054	98	1507	648	746
[6777]	1067	57	687	681	1046	410	164	263	165	810	571	1237	1184	1395
[6791]	983	1393	543	470	429	574	1438	105	496	1487	750	1111	592	155
[6805]	157	499	643	938	644	642	645	641	749	891	598	602	604	730
[6819]	700	819	830	832	856	867	946	266	194	1412	364	1517	156	158
[6833]	1285	1474	1148	1157	1541	273	326	325	281	1528	1523	1210	1104	1102
[6847]	1076	10	1062	12	1310	1214	195	218	1445	607	923	920	168	312
[6861]	1547	162	506	1101	130	1429	248	534	889	1084	1128	812	868	441
[6875]	1440	347	363	159	287	279	1329	229	226	1306	1295	1292	256	173
[6889]	1311	172	1274	511	1455	296	34	990	1105	1085	704	975	706	1590
[6903]	1083	1077	635	9	858	1473	490	1053	658	940	192	659	1575	661
[6917]	1584	1382	197	551	196	672	1454	149	584	1458	1509	1515	1516	1534
[6931]	70	69	60	1550	51	50	41	40	674	1486	1205	370	460	255
[6945]	1206	1168	1173	932	934	503	502	1232	1224	941	1209	1207	1114	378
[6959]	432	1061	869	249	252	860	1086	1038	655	950	1190	1598	1525	735
[6973]	951	741	545	949	4	478	1574	1016	1133	985	405	980	1064	1536
[6987]	714	717	6	610	1163	102	1029	561	258	1279	1276	573	566	247
[7001]	507	1233	203	1230	839	123	761	1333	1463	257	244	245	824	826
[7015]	1121	1578	1425	884	663	828	1593	880	1386	1047	1597	1568	993	1464
[7029]	770	780	1200	1524	1212	1197	1	1181	1241	1180	1162	1159	701	1146
[7043]	1501	823	1563	1564	1565	1426	163	90	86	219	71	68	621	59
[7057]	368	439	183	435	5	274	314	726	1381	1380	785	480	624	530
[7071]	1328	151	1504	861	537	708	1417	1415	117	184	428	191	1419	866
[7085]	1420	613	106	1421	104	865	1355	269	1035	1327	1326	1325	1281	1569
[7099]	1282	264	261	505	1273	277	1591	1345	1252	21	1537	444	1428	531
[7113]	268	562	742	599	1039	536	1348	848	1358	547	504	1379	933	1223
[7127]	575	1103	1394	864	491	377	1349	1020	232	897	705	962	1165	899
[7141]	685	335	1172	683	356	715	892	894	433	1514	909	1213	1503	1443
[7155]	1211	622	1506	1164	881	1196	1447	1175	1334	446	67	1242	91	160
[7169]	974	1174	654	1255	1269	1140	916	908	549	1251	1250	673	982	61
[7183]	576	789	788	617	616	1177	323	718	1094	1187	1042	185	1422	1423

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[7197]	388	1217	996	99	970	618	779	1369	850	338	1137	1138	1142	1141
[7211]	1225	300	870	853	931	357	1191	475	1227	902	895	903	1185	898
[7225]	381	857	855	854	1189	896	383	747	177	623	80	1402	1401	1398
[7239]	1390	384	124	175	100	1079	1078	1481	482	114	711	1496	1449	1448
[7253]	103	1384	1383	1301	26	27	662	29	988	1562	935	412	1561	220
[7267]	411	1560	1554	1364	1049	1577	1539	679	1532	612	64	54	922	906
[7281]	1263	127	501	1350	793	849	847	846	230	234	1249	472	817	1304
[7295]	1267	1266	783	447	1239	138	139	140	1124	603	489	1215	1093	497
[7309]	1005	919	1051	955	942	1037	393	345	1405	190	187	1411	600	734
[7323]	128	125	118	1479	721	719	992	1522	670	668	30	22	994	769
[7337]	771	340	893	329	320	318	307	1219	1244	1246	1248	1257	800	801
[7351]	221	799	791	773	772	1048	1066	1330	1331	224	212	1376	1389	1399
[7365]	1502	1552	33	1319	1316	1073	1091	367	365	1154	321	319	298	1262
[7379]	1313	461	748	786	787	583	611	578	887	473	671	976	977	695
[7393]	694	459	918	818	924	74	591	246	250	73	1294	189	188	1050
[7407]	1357	805	792	1344	727	1471	723	907	1342	112	1341	1340	713	101
[7421]	900	529	759	593	510	135	666	508	638	24	453	454	538	758
[7435]	56	677	675	1283	465	678	1258	63	113	852	25	392	260	404
[7449]	403	1343	176	841	606	560	565	1188	1186	1036	524	544	851	167
[7463]	382	579	463	1092	362	1377	1353	1149	1354	1356	494	500	596	525
[7477]	297	301	872	65	66	37	36	19	79	1314	637	1315	886	83
[7491]	1247	1170	720	1070	725	456	276	284	271	262	315	1305	280	1161
[7505]	178	462	633	1096	1551	415	147	385	692	398	399	476	998	997
[7519]	656	479	699	1368	1043	387	958	1041	389	379	732	522	620	521
[7533]	1074	520	108	204	1040	844	835	1012	42	275	601	1025	740	360
[7547]	519	1307	430	1030	72	1309	527	1592	581	1494	13	1497	31	960
[7561]	225	421	1034	228	1264	751	205	150	349	767	1134	375	142	752
[7575]	137	754	169	582	945	512	386	1397	469	1286	253	353	161	956
[7589]	116	136	1595	141	233	324	322	1109	1378	498	509	291	1226	1117
[7603]	293	1116	1118	109	289	477	921	418	1363	1318	1360	1031	586	766
[7617]	434	436	215	608	3	564	17	1396	733	840	552	553	665	739
[7631]	760	254	288	943	1014	995	1112	303	947	1130	77	76	952	1032
[7645]	928	585	313	738	1296	1297	242	707	712	1059	948	408	1362	348
[7659]	471	350	765	594	563	295	75	1367	1442	879	944	1392	682	1446
[7673]	299	380	587	914	1321	722	885	546	1176	1055	206	1089	570	1056
[7687]	572	1090	457	1129	555	556	1216	558	1026	745	450	1033	451	688
[7701]	207	153	154	352	1125	762	764	595	1365	1100	605	744	390	1098
[7715]	267	1254	653	1284	1529	316	660	237	820	691	528	753	968	631
[7729]	629	991	11	414	202	236	120	458	238	239	989	2	464	1024
[7743]	532	533	294	466	1063	628	627	1075	1072	193	813	816	821	1549
[7757]	523	790	361	413	1388	209	1387	540	1302	166	1155	517	964	449
[7771]	443	1291	1060	222	541	1057	217	1013	286	97	814	317	776	243
[7785]	535	285	1275	967	815	339	1553	768	577	35	1452	1414	1228	1482
[7799]	652	1058	111	115	1480	78	1139	875	272	270	973	278	32	634
[7813]	526	334	290	632	28	374	23	657	1508	1505	1520	651	1385	647

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[7827]	328	1332	89	514	351	366	515	588	978	876	359	609	55	1374
[7841]	1160	93	1009	92	87	1167	630	417	957	186	58	1204	1361	305
[7855]	394	890	736	737	48	1519	782	1483	14	47	804	784	485	912
[7869]	1278	1195	842	1366	963	62	646	1010	358	416	1095	1097	146	1579
[7883]	1156	559	557	343	131	344	1153	119	122	843	354	1015	959	327
[7897]	419	397	516	401	331	619	110	332	1259	1260	1253	1021	1022	1424
[7911]	626	625	376	513	797	448	336	1222	796	1221	911	1208	1300	639
[7925]	833	126	834	615	484	483	1372	775	774	690	369	917	809	1335
[7939]	1192	1194	1359	1437	16	1110	550	39	409	15	121	1147	304	781
[7953]	883	518	1477	1475	308	309	1435	1436	1099	667	567	568	1571	1559
[7967]	148	778	777	569	241	1375	182	43	227	20	292	282	170	18
[7981]	1166	731	84	1261	452	1320	1052	755	1371	1373	693	82	107	152
[7995]	259	536	774	531	775	1087	1280	1288	81	1278	1404	1483	37	1061
[8009]	1277	1068	129	1479	1081	1433	1439	1421	1419	1417	1069	1077	1078	1079
[8023]	1415	144	1049	1396	128	1125	1127	987	997	998	1057	1015	1021	1022
[8037]	1024	123	985	1114	980	916	98	912	911	914	127	1060	810	809
[8051]	1023	913	1357	811	814	1006	1370	1004	999	827	1335	1382	1397	808
[8065]	1151	1485	278	272	270	619	27	1490	171	705	1109	689	728	729
[8079]	57	806	1303	807	65	1201	51	1198	66	732	805	213	223	211
[8093]	1182	1170	1055	1171	1056	1190	1173	1131	241	294	1065	296	282	299
[8107]	304	279	309	1098	265	1099	1100	257	253	800	1036	598	690	691
[8121]	590	700	583	582	581	725	569	568	567	599	686	684	646	648
[8135]	632	628	627	659	660	661	664	612	672	674	566	726	561	474
[8149]	831	465	459	457	454	445	954	957	342	328	1033	476	479	488
[8163]	543	542	540	539	538	762	764	518	517	799	499	496	1202	36
[8177]	1411	1505	105	1356	1372	1347	1392	49	1492	1489	45	1214	1393	1300
[8191]	99	1508	151	777	874	482	308	281	483	130	1254	446	311	485
[8205]	875	443	441	1050	306	825	477	292	1066	469	1294	1333	1064	1291
[8219]	478	1403	462	456	1063	448	480	481	438	938	395	393	948	952
[8233]	953	955	363	364	963	379	378	974	370	973	972	971	967	375
[8247]	348	1001	323	1360	436	409	1363	327	434	329	431	428	900	424
[8261]	908	337	417	414	343	344	345	486	487	376	1506	1148	1481	1186
[8275]	1147	1187	1143	667	1138	560	1507	550	1137	1135	548	1150	1215	565
[8289]	603	173	1504	606	1178	172	670	597	668	19	1203	1493	1161	577
[8303]	1484	545	537	515	514	1194	1236	508	507	266	505	504	68	1428
[8317]	1096	647	1253	1111	1113	620	1188	1462	1191	250	246	1192	53	530
[8331]	778	242	639	962	940	396	946	631	629	1519	1510	655	917	675
[8345]	770	449	863	1460	776	779	468	794	795	796	1455	484	442	440
[8359]	677	601	915	1389	1500	419	1499	910	1498	812	877	876	39	970
[8373]	1237	177	1377	269	1000	194	1011	277	336	195	175	330	210	1167
[8387]	118	302	1062	1355	1349	1348	161	307	986	1120	240	235	365	366
[8401]	367	975	179	698	697	1412	1413	1219	1472	1407	298	1345	46	300
[8415]	90	43	1213	702	1416	1092	1486	254	259	30	1228	802	1452	1444
[8429]	1121	1225	70	1426	1425	817	224	52	1491	763	586	1459	1471	1169
[8443]	651	984	981	657	178	935	353	1388	102	1501	185	931	1387	1211

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[8457]	97	1352	887	400	1456	942	1487	1488	310	1107	623	1097	60	188
[8471]	407	784	782	735	551	743	956	44	979	1581	1224	228	761	1531
[8485]	1149	1153	249	1522	162	654	9	1156	703	14	1283	1031	206	820
[8499]	821	851	429	207	1323	88	886	839	594	844	841	201	852	1054
[8513]	76	77	1095	663	1368	94	452	24	1032	556	212	557	558	559
[8527]	234	1482	230	180	215	1165	714	717	707	719	573	721	571	28
[8541]	584	615	614	607	23	219	1164	649	555	1480	332	331	893	881
[8555]	121	1346	856	1400	460	463	466	137	1318	475	901	1365	360	359
[8569]	951	950	949	944	1379	404	930	921	341	1367	1366	1020	142	284
[8583]	148	1217	263	181	506	758	759	244	1244	547	490	1134	274	245
[8597]	1093	733	280	1108	1513	928	1193	945	1380	1381	947	737	1541	736
[8611]	1189	765	786	1299	1094	1160	706	709	1434	1361	1	1364	1240	904
[8625]	1180	905	1181	1185	787	1235	1013	1238	372	381	5	218	406	112
[8639]	600	150	117	124	609	101	350	352	383	67	384	169	386	368
[8653]	184	519	74	26	248	444	634	741	41	40	391	79	1414	731
[8667]	1405	198	104	200	1576	303	718	1371	106	340	492	1008	1258	358
[8681]	1239	1321	960	767	766	958	63	532	533	374	283	50	48	262
[8695]	1334	433	750	749	781	747	746	159	1009	1557	602	1564	232	408
[8709]	678	1025	1548	907	692	676	1563	115	604	111	149	1565	1373	1012
[8723]	1163	1545	1162	305	1312	258	1045	1568	850	848	1017	1030	1432	135
[8737]	840	64	1376	1279	1344	1342	1340	116	493	934	103	932	100	868
[8751]	1399	941	399	943	398	1264	430	394	138	1268	1276	867	1362	1341
[8765]	325	199	1578	1067	1106	1003	716	713	1007	710	217	6	326	1532
[8779]	1535	688	687	1042	1126	1579	982	1583	35	38	768	535	1329	260
[8793]	1034	1544	166	236	1463	78	113	925	1464	1027	119	122	1293	1119
[8807]	849	239	847	846	1234	237	1353	461	605	1354	929	574	361	497
[8821]	553	501	804	803	187	29	1424	990	1104	205	1210	618	1520	755
[8835]	1016	1102	1474	622	1313	883	552	1298	1301	139	312	423	268	906
[8849]	1308	425	1116	369	170	1243	1195	189	197	1246	1247	1248	349	1166
[8863]	1259	1260	405	1231	225	1035	238	413	1117	1118	1391	826	1450	828
[8877]	1451	1528	534	665	1555	1556	757	1339	662	471	824	823	513	681
[8891]	71	3	521	1539	610	669	1438	108	1536	1441	860	861	1574	7
[8905]	869	1495	8	1338	1496	1337	1503	723	11	1572	862	1570	865	1558
[8919]	33	1158	712	18	522	1184	748	1144	183	203	13	1515	1478	334
[8933]	734	222	708	587	544	693	1152	1516	193	390	1140	682	252	255
[8947]	141	858	621	903	902	866	894	892	1317	1105	1577	645	1322	136
[8961]	643	641	1074	1592	1052	251	1546	84	1041	1476	1375	247	1369	822
[8975]	1266	1267	204	835	830	832	10	335	273	1509	1547	1550	1026	256
[8989]	1551	1514	1124	4	295	579	1154	347	720	899	897	793	1316	392
[9003]	72	388	895	1319	382	864	1398	96	1284	1287	133	132	451	1275
[9017]	1262	140	859	450	134	754	752	751	1330	42	31	356	190	20
[9031]	1179	351	12	1343	168	1331	163	1222	1221	59	1588	261	1325	1326
[9045]	1328	1327	1320	1103	1285	209	1526	1527	167	1226	1533	1229	1447	1443
[9059]	160	1431	73	233	1406	85	1133	107	109	1552	1554	1599	1088	965
[9073]	961	727	613	1044	791	884	880	696	578	580	588	699	453	293

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[9087]	1230	1542	1233	1549	1446	1053	61	1468	377	231	1512	572	996	570
[9101]	991	989	1199	176	738	740	589	788	86	1571	511	1394	1071	93
[9115]	789	427	1336	1442	1261	818	815	403	936	937	313	1314	995	816
[9129]	92	575	1385	813	1255	87	62	402	1470	541	785	1286	964	1289
[9143]	1216	1290	1302	289	316	630	1038	595	291	301	656	680	1538	191
[9157]	798	192	362	1305	1196	25	633	83	790	1418	624	1122	625	626
[9171]	745	1269	780	1043	1040	147	319	642	819	455	1529	711	715	125
[9185]	321	1350	591	467	842	1324	333	644	432	694	1502	593	1448	1249
[9199]	1525	47	114	1014	704	1159	756	1586	1212	1089	1136	1090	1309	1307
[9213]	435	439	120	82	32	653	773	890	939	658	412	1523	1101	1575
[9227]	1112	264	1378	1427	500	494	772	525	510	968	182	1197	22	354
[9241]	1494	1497	1177	1200	1473	385	592	387	389	1517	695	220	1580	769
[9255]	1207	636	1315	1422	196	174	771	1567	415	1209	1208	1142	1272	1206
[9269]	1251	797	221	380	1306	1537	1250	753	491	966	1585	1130	650	1205
[9283]	1582	1311	464	564	472	2	1384	1383	322	640	287	473	1039	1569
[9297]	611	1220	1273	56	744	666	1292	1295	153	959	154	792	845	315
[9311]	1175	1174	1172	208	1511	1265	297	1128	608	1010	853	1591	216	1256
[9325]	924	1271	512	562	186	267	411	1566	918	509	701	1037	373	783
[9339]	410	801	1454	836	1358	730	1437	1429	69	1395	549	80	1458	1310
[9353]	1005	1048	145	143	870	275	1051	271	1227	1123	1110	1252	898	896
[9367]	126	227	276	243	1129	158	75	742	1282	739	1281	156	576	1028
[9381]	617	616	1594	1058	1304	1070	1270	1242	339	214	873	495	933	969
[9395]	1115	157	1543	155	1524	226	1518	338	1590	1139	229	1597	288	1168
[9409]	888	1521	357	458	21	526	1593	671	318	637	1072	1059	54	596
[9423]	1075	891	885	993	314	882	320	131	879	978	1146	1002	1467	1469
[9437]	994	992	1445	1560	416	871	1085	1083	447	1332	878	1562	638	1440
[9451]	1561	1534	1595	286	683	1351	422	1046	554	426	285	889	1084	1584
[9465]	673	529	146	1553	1420	922	152	1598	919	55	1223	1402	1401	528
[9479]	1141	290	1204	1073	760	1047	1263	418	1587	420	1386	1274	1466	833
[9493]	1465	909	829	516	1589	89	1540	1374	1461	843	489	1145	652	1573
[9507]	165	1409	421	371	976	685	977	988	17	722	324	164	470	724
[9521]	872	837	838	1018	1019	1241	1390	834	1453	110	317	1080	1082	437
[9535]	502	524	503	1430	1457	920	923	546	1596	520	1423	202	527	1410
[9549]	1408	346	1449	1086	34	355	1029	95	857	1183	854	563	855	91
[9563]	1530	1091	1257	1218	498	1076	679	1157	635	523	1477	1176	1475	1232
[9577]	1155	58	1297	1296	16	983	1359	15	927	926	585	1436	1435	1132
[9591]	1559	397	401	1245	980	985	916	814	1015	1288	987	1077	913	827
[9605]	1004	1370	1006	1021	1022	1081	1079	1061	1078	1439	171	1483	1198	1201
[9619]	954	1087	1280	1300	912	689	908	1024	831	1215	1023	972	223	807
[9633]	1065	1060	808	957	999	99	1057	282	971	57	967	953	806	875
[9647]	1069	1114	1277	1068	266	1131	1202	1278	914	874	1433	997	998	1485
[9661]	1127	1335	729	1150	646	27	1397	151	900	910	911	915	940	1490
[9675]	45	955	1182	1178	65	66	986	728	1349	1348	1396	1203	1194	1192
[9689]	1187	1393	1151	309	128	127	1143	1291	1294	1171	725	948	952	49
[9703]	1001	1000	1505	1506	809	1508	974	1484	1011	279	508	973	538	1481

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[9717]	726	1347	794	674	672	664	660	1254	257	590	1404	1214	975	1492
[9731]	1109	328	1462	1125	1489	1137	123	1138	1499	811	343	344	1049	732
[9745]	705	1033	800	799	691	1111	648	856	488	474	1148	517	308	577
[9759]	581	582	327	877	1031	1170	603	1253	1479	43	1507	1504	1372	53
[9773]	567	568	37	583	1063	1213	68	1032	545	213	1211	1303	52	1501
[9787]	515	514	465	81	376	348	686	1120	1417	1460	330	670	1135	668
[9801]	1415	810	302	628	627	364	684	129	1173	477	294	1500	337	1472
[9815]	1498	409	1099	1062	1093	1411	448	496	667	30	876	518	963	776
[9829]	612	499	825	741	620	1488	1036	559	1050	1064	1456	677	619	675
[9843]	1107	1097	1095	557	1452	981	487	486	1513	482	540	542	802	942
[9857]	1121	984	690	1237	9	1100	342	743	1134	805	778	323	370	483
[9871]	468	1531	962	173	436	434	1493	1491	1025	1030	36	905	904	893
[9885]	598	378	484	1098	1416	1299	1323	1238	1235	292	172	1412	1012	566
[9899]	930	561	707	210	211	444	456	733	281	462	70	1268	1419	1544
[9913]	1545	1092	414	353	130	1421	1190	1163	763	632	700	39	1096	1066
[9927]	1054	1240	419	417	1225	478	179	1345	1579	1576	661	1568	659	1565
[9941]	1564	647	1563	1557	607	569	946	543	1161	1519	162	161	1510	144
[9955]	1144	1191	1459	253	951	329	1147	341	507	469	304	990	1118	1117
[9969]	1149	1116	950	949	1228	881	366	8	584	1164	1165	548	1162	336
[9983]	459	454	457	438	159	868	600	852	851	1444	821	1413	970	505
[9997]	1283	1533	102	1480	1407	1482	721	719	736	98	737	246	1455	1487
[10011]	44	51	956	278	1428	1387	1388	1425	1522	1426	97	461	228	481
[10025]	555	556	558	601	359	270	1555	1224	26	250	835	272	703	639
[10039]	1020	1558	921	475	1556	1119	867	1262	485	606	869	597	830	832
[10053]	945	947	1471	379	812	1550	201	1210	368	860	504	1528	1403	244
[10067]	90	431	245	1219	1009	433	242	1108	1239	1400	424	697	306	1434
[10081]	1333	1486	698	1053	311	492	941	551	1572	1102	935	1509	863	702
[10095]	1008	406	1104	463	372	931	550	1105	1382	395	938	134	1548	840
[10109]	1338	393	1592	1337	1264	466	490	352	1067	883	1042	1551	188	1339
[10123]	795	506	1539	452	1547	1581	1126	1016	269	989	277	1552	198	1034
[10137]	1312	383	71	445	381	1007	663	1512	449	493	964	1520	1003	384
[10151]	1578	296	405	1583	991	265	442	818	194	887	1355	476	1346	746
[10165]	350	982	1379	407	479	195	1399	303	618	1554	750	1441	1495	925
[10179]	929	1357	1496	1122	1363	531	536	649	1301	1360	547	1451	207	1293
[10193]	206	224	1017	118	573	1588	839	1546	1532	298	14	682	655	19
[10207]	1375	1577	614	1216	1450	1124	340	135	1308	358	979	1535	613	1298
[10221]	441	310	817	654	78	1447	38	1088	149	886	1103	408	599	1443
[10235]	429	1343	669	1344	1424	1463	1287	1094	480	676	678	299	1014	758
[10249]	88	446	749	94	1365	1377	759	163	631	849	847	1340	1341	629
[10263]	1538	846	842	1342	200	770	1580	428	1356	1041	1582	345	755	1013
[10277]	519	859	960	657	623	1468	356	651	535	850	1541	260	713	902
[10291]	757	903	710	300	1392	537	1260	1391	1123	1259	534	530	636	521
[10305]	1585	1406	1570	1328	1248	1	1246	779	1325	1326	1327	841	1526	351
[10319]	5	716	255	252	124	347	1381	1380	263	709	882	103	1536	100
[10333]	539	63	1113	762	764	29	430	450	451	453	1037	1591	602	1571

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[10347]	177	604	1255	175	1249	1285	1275	823	1267	1234	1266	824	105	1101
[10361]	959	1027	571	268	1074	48	1071	386	251	1418	1251	1250	708	23
[10375]	32	240	784	235	205	230	731	828	826	234	1160	363	28	782
[10389]	236	1361	239	1594	816	237	1046	402	813	178	740	396	497	688
[10403]	965	934	1156	1154	1153	1133	961	335	1527	501	932	1166	595	1543
[10417]	1329	586	274	1043	1040	1044	238	610	1188	249	848	1186	204	901
[10431]	735	67	1448	1438	1464	687	641	25	681	643	1243	6	645	1593
[10445]	117	1597	1336	86	754	752	580	751	331	1089	1090	360	1193	332
[10459]	404	215	1318	996	815	1313	218	1350	845	1599	388	572	1366	367
[10473]	570	365	532	533	77	76	939	183	181	400	658	798	168	822
[10487]	174	1569	180	1566	1039	662	511	594	382	150	510	878	522	871
[10501]	633	443	392	74	896	897	898	899	1026	870	1169	1172	301	765
[10515]	1521	774	334	169	553	1518	696	1221	1273	1274	1209	1207	1206	1595
[10529]	1205	219	1473	1222	1598	1047	720	1052	1537	56	1005	944	261	138
[10543]	671	1367	918	259	924	829	775	781	1474	552	624	872	1317	576
[10557]	804	349	1405	1227	42	1322	114	969	1352	60	923	920	1256	373
[10571]	471	1286	858	1002	819	993	460	1431	587	560	1177	1525	565	284
[10585]	756	1180	1181	541	574	375	377	280	111	115	422	426	427	1511
[10599]	293	1168	1035	1586	1247	387	1334	833	470	714	873	717	766	666
[10613]	966	723	777	289	1470	203	399	1106	398	192	291	390	1542	232
[10627]	264	176	513	680	1389	287	217	727	410	718	440	101	1549	35
[10641]	362	1220	1574	326	325	589	1136	1265	1269	1596	247	958	1048	1146
[10655]	467	1051	84	834	142	420	61	137	1530	1128	1028	1070	472	891
[10669]	1567	943	608	1059	1208	656	1466	1409	526	295	288	1212	316	1453
[10683]	1045	389	1465	283	544	1469	1467	439	59	1410	307	1281	1449	706
[10697]	1183	665	1282	64	1553	1362	1408	3	385	1159	435	225	1324	529
[10711]	1429	855	1010	197	357	857	836	1423	1112	854	1196	122	119	888
[10725]	1261	258	491	18	20	1038	747	1302	640	1353	1354	611	1523	1517
[10739]	789	738	1231	626	625	221	730	233	683	338	788	1422	1176	1394
[10753]	1529	7	321	820	13	1084	319	1427	1540	1241	1295	21	1292	425
[10767]	423	796	1271	1257	1503	1252	1587	4	1167	564	380	909	267	276
[10781]	1524	1184	271	786	787	85	437	185	212	241	116	693	509	917
[10795]	512	1310	136	346	170	1364	141	143	226	605	1155	229	371	145
[10809]	108	1086	1320	889	403	1272	1195	1461	1502	797	1174	1175	1514	1242
[10823]	11	609	69	1515	106	46	184	273	1516	1314	214	458	104	1110
[10837]	753	432	1263	933	1373	1371	1230	1233	82	421	455	2	1076	1358
[10851]	187	24	1332	489	262	1430	843	1305	1304	748	644	642	994	992
[10865]	473	1029	1315	107	879	885	1258	152	549	1284	988	983	1083	1085
[10879]	297	1130	1145	1152	616	285	286	22	1142	653	617	699	315	936
[10893]	937	977	734	222	976	447	374	324	83	1395	927	1351	55	248
[10907]	1432	320	318	1378	1091	1369	1218	767	591	1073	369	928	593	502
[10921]	503	1204	715	413	1226	1056	926	1199	1055	354	1296	1297	575	1179
[10935]	907	412	919	1141	1217	1590	922	1115	109	585	79	500	361	1279
[10949]	1276	494	227	791	31	1475	1477	34	75	864	630	1385	711	1534
[10963]	704	1454	1386	861	1458	785	528	865	95	186	411	254	1140	160

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[10977]	892	634	894	866	1244	803	1270	679	40	41	793	322	1157	148
[10991]	862	1229	1311	1306	884	1321	391	880	701	760	895	995	1414	1374
[11005]	1476	1478	1129	1457	1223	120	121	1058	305	1437	126	1232	1330	1316
[11019]	1319	1309	495	1331	1307	1075	1575	1445	844	780	1072	317	1440	692
[11033]	199	1139	147	1200	769	1197	73	771	275	209	394	1435	1436	72
[11047]	50	783	166	554	1442	1446	1359	768	290	313	1584	890	339	154
[11061]	132	133	153	838	837	1376	167	1158	745	744	125	12	635	588
[11075]	1589	10	17	615	739	761	1573	1398	622	139	312	1384	1383	1368
[11089]	546	520	722	527	231	96	112	801	140	596	1018	243	1019	563
[11103]	182	1290	579	58	1289	113	1390	578	712	621	62	498	968	33
[11117]	1236	333	47	1559	906	525	978	1185	54	256	790	80	1189	208
[11131]	196	216	562	165	164	853	415	694	397	401	418	695	89	193
[11145]	191	724	158	156	464	157	155	792	1561	1560	1562	93	1420	523
[11159]	416	131	1132	314	92	87	742	91	1401	146	1402	524	189	772
[11173]	220	773	190	15	638	202	1494	637	1497	16	650	592	673	516
[11187]	685	110	652	1245	355	1080	1082	1018	1019	1115	837	838	1270	1271
[11201]	355	1127	822	1229	143	145	1000	589	1478	1476	1299	696	592	1123
[11215]	1121	1457	1158	199	391	1235	1238	1119	1120	1317	1053	1322	803	231
[11229]	1006	1004	1288	1312	1391	1045	1514	1548	1591	1082	1080	1178	96	1444
[11243]	1298	1287	1133	915	910	1352	1472	1474	445	1571	46	554	1132	1491
[11257]	1188	1186	1179	1493	1272	1152	1122	1143	1011	1037	806	808	939	862
[11271]	1067	1256	1099	1411	1105	1583	1293	1027	132	133	871	878	1453	1106
[11285]	832	1107	830	1028	997	998	1128	95	1169	1273	807	1336	1102	1104
[11299]	1101	1323	1126	917	1370	1570	1113	1535	39	1088	1592	1580	1103	1582
[11313]	952	1218	948	1510	1589	1243	979	829	983	1065	1202	1550	1489	1393
[11327]	1492	940	1054	1210	969	13	1163	1262	860	867	868	869	1046	1193
[11341]	1275	1433	147	897	1301	1531	899	1338	1339	1490	1337	1091	1015	1265
[11355]	1198	954	1201	1460	1495	8	1377	1136	570	572	1062	814	1357	1356
[11369]	1456	1574	930	1451	987	1581	1441	1231	468	1112	1375	1081	1543	1450
[11383]	1347	1151	1576	1285	1300	1372	1220	1182	1093	650	200	337	1280	1327
[11397]	1326	1325	1328	908	1588	942	1538	1585	1017	1031	1240	757	1216	1521
[11411]	1518	1566	1595	427	402	1249	889	1587	1496	1586	1274	1567	1241	1324
[11425]	1001	1488	1213	1211	1071	945	1481	1257	1365	153	154	493	730	1408
[11439]	1409	1410	1419	1421	1304	1247	1170	920	923	1024	1501	1500	1498	941
[11453]	1528	440	827	1199	1596	916	1032	1572	1251	1556	1250	929	925	1008
[11467]	1203	1003	1007	877	965	961	1350	959	495	1406	470	426	492	134
[11481]	1418	455	422	1291	1172	1464	1525	872	1108	1390	1308	1135	1157	223
[11495]	756	1149	798	1537	1168	909	1086	1378	1039	169	1524	1546	795	1313
[11509]	882	1077	1382	1207	1209	1206	1205	953	883	1341	1259	1340	856	955
[11523]	1342	1189	1344	1260	1539	1185	1579	636	50	144	1176	1484	936	937
[11537]	1155	203	818	1463	1092	1565	1487	964	1564	1563	1568	1598	1042	1009
[11551]	1599	1329	1434	425	26	55	423	896	347	898	1305	53	1545	356
[11565]	130	1192	1162	1194	1526	950	951	874	949	1527	966	999	993	1504
[11579]	1315	990	1380	1125	1381	1314	1297	1296	1063	52	418	707	534	1400
[11593]	1281	1282	1431	1420	1423	610	168	167	1507	811	901	986	1267	1266

[11607]	262	1064	243	1445	1440	946	1277	1355	1030	957	1025	1254	1428	222
[11621]	219	1212	35	1012	1184	1069	1068	1177	1236	1116	1117	1118	1159	1533
[11635]	1593	1597	263	1547	891	1303	873	881	1367	1438	911	888	870	1471
[11649]	1584	151	176	49	334	31	725	81	433	437	551	1466	1432	1465
[11663]	79	1333	1499	1023	1398	1522	1150	211	1060	1553	1057	1376	1029	776
[11677]	1348	1349	1145	1513	1577	1195	1343	1536	254	845	161	374	11	135
[11691]	149	85	214	671	102	120	1485	1227	962	1034	1111	1385	858	989
[11705]	991	1302	1016	1181	1180	1268	1310	1430	1219	709	125	1506	1147	1404
[11719]	304	312	1439	105	1005	1459	1013	926	967	974	1508	1505	821	1486
[11733]	1530	1335	1379	73	177	175	174	166	778	204	1387	86	1388	777
[11747]	1392	1306	1047	1311	1394	1383	958	1384	1346	1234	876	226	249	205
[11761]	229	1094	1316	1156	1330	1153	1331	1190	1319	1084	1283	601	904	905
[11775]	140	139	119	72	70	121	122	217	614	689	682	129	1429	1401
[11789]	27	316	45	528	68	1402	66	65	60	378	370	1232	1562	1561
[11803]	1560	1154	1578	1373	1371	1142	828	826	208	232	261	1253	1555	1558
[11817]	1215	1255	863	842	1569	444	335	1187	400	1066	736	1414	1412	737
[11831]	248	1403	844	98	1252	264	1532	819	1573	1261	831	1258	1523	1517
[11845]	1196	1166	1048	1051	1014	1497	1020	1278	1494	1557	1224	1318	1292	1295
[11859]	1503	914	794	633	294	163	639	194	195	635	112	111	91	113
[11873]	630	919	649	7	907	128	922	482	115	170	221	227	30	127
[11887]	801	1502	1021	1022	973	315	1541	1519	840	1358	956	1468	1173	301
[11901]	136	724	141	276	271	97	613	162	741	1422	1594	854	1191	857
[11915]	855	1364	1320	1351	963	1095	1246	1248	1097	220	836	759	758	755
[11929]	1473	1369	975	1237	1214	94	1416	498	708	28	78	88	406	691
[11943]	543	520	527	413	116	669	64	23	733	209	1399	33	32	307
[11957]	1511	1374	1462	875	1520	1100	1098	1542	1171	1332	1269	1386	770	970
[11971]	1395	106	449	599	372	99	104	716	71	218	648	588	288	373
[11985]	1294	1146	839	1144	1038	913	1124	256	237	236	239	238	1161	1002
[11999]	781	1217	1575	1223	18	160	21	2	258	137	62	63	131	9
[12013]	1073	1424	190	448	259	506	196	453	146	197	44	43	718	723
[12027]	310	38	148	266	67	189	142	25	674	672	24	805	825	1036
[12041]	1449	1134	240	234	1083	247	212	235	1085	230	1200	859	1197	1276
[12055]	1279	846	847	849	850	980	69	48	1141	179	1353	181	17	20
[12069]	159	1354	193	615	985	108	84	110	180	1040	1043	1165	1164	810
[12083]	988	835	994	992	201	996	1114	1361	1070	3	83	54	47	118
[12097]	977	976	640	394	417	185	463	472	485	358	409	729	728	703
[12111]	687	686	684	660	1448	763	1052	809	1148	1049	1050	1360	1363	1470
[12125]	1458	1454	791	843	851	852	1167	186	57	804	51	1427	184	1366
[12139]	933	1059	474	564	241	283	1512	1447	982	1443	1442	1446	1529	1540
[12153]	1175	1174	1534	1233	1230	1389	1483	93	704	187	421	100	1074	101
[12167]	519	103	680	663	92	702	698	697	538	87	183	388	342	182
[12181]	743	172	255	464	29	282	173	647	178	496	138	171	499	252
[12195]	80	1245	1010	1362	1461	971	972	1368	1263	775	1467	1469	1160	1242
[12209]	268	661	361	659	824	333	823	158	107	157	155	156	514	515
[12223]	305	774	607	302	1452	782	784	968	1221	1222	1286	1284	274	323

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[12237]	802	1090	1089	960	1359	902	841	928	903	764	762	1087	767	1035
[12251]	537	338	14	530	664	405	216	215	19	192	432	1426	1425	1413
[12265]	1407	82	381	623	624	353	384	383	892	894	771	769	780	895
[12279]	1396	947	793	1397	884	880	225	797	861	864	865	931	935	785
[12293]	1055	1056	866	932	934	202	37	150	59	371	550	603	1208	1183
[12307]	1041	1544	461	314	124	420	188	191	109	720	719	291	525	289
[12321]	717	714	690	654	653	279	74	631	1334	580	629	584	590	622
[12335]	721	726	487	621	507	486	42	505	504	749	1140	1554	1552	750
[12349]	746	1076	1228	1131	1590	848	478	1096	893	981	984	1137	1138	761
[12363]	1264	524	662	10	117	747	12	90	89	772	56	1	41	6
[12377]	40	429	424	577	5	595	431	562	511	638	327	573	748	773
[12391]	1549	1551	1058	753	796	1139	927	921	885	879	1559	742	779	346
[12405]	655	693	637	678	349	452	1307	1309	366	292	380	386	523	938
[12419]	1321	1130	1239	715	213	210	393	522	586	658	705	233	667	257
[12433]	552	673	685	477	553	734	328	598	513	4	906	385	61	683
[12447]	790	123	331	332	978	853	754	752	751	1479	387	407	297	1061
[12461]	330	389	666	198	410	165	783	1509	224	313	1079	1078	792	813
[12475]	816	164	22	344	415	618	362	343	578	521	579	786	787	390
[12489]	608	1110	731	475	462	563	467	488	722	546	1026	760	918	924
[12503]	886	1482	1480	58	246	547	250	710	679	611	1244	739	833	943
[12517]	887	834	480	491	1129	497	490	501	677	676	646	694	695	701
[12531]	228	817	376	605	606	675	75	126	1516	1515	300	251	711	1405
[12545]	1345	1033	1109	298	1044	36	348	16	76	510	77	15	253	438
[12559]	446	457	484	483	281	414	700	657	587	651	944	318	320	548
[12573]	269	593	591	800	465	277	735	411	412	799	441	1204	476	627
[12587]	620	364	456	428	458	379	399	398	628	479	529	114	541	670
[12601]	668	542	442	632	766	765	321	319	900	1072	1075	740	324	706
[12615]	569	531	503	536	502	912	788	641	574	280	284	643	789	645
[12629]	568	567	1290	1437	1289	275	995	644	713	363	642	575	336	1225
[12643]	1226	242	576	34	544	299	273	768	815	549	350	450	309	308
[12657]	303	293	509	727	207	206	732	512	518	352	566	401	397	404
[12671]	451	597	1415	561	1417	473	152	278	419	272	270	540	317	447
[12685]	471	408	435	439	260	395	430	287	340	626	625	617	616	1455
[12699]	322	820	311	369	688	692	459	712	306	596	454	526	265	665
[12713]	583	600	403	535	341	359	508	368	469	244	245	745	296	357
[12727]	699	812	286	285	489	581	500	494	559	557	585	738	582	329
[12741]	744	267	571	377	532	681	533	351	434	594	436	656	396	602
[12755]	604	466	345	612	619	460	339	545	516	517	290	652	360	634
[12769]	416	375	382	392	295	539	326	325	354	565	560	367	365	1475
[12783]	1477	481	609	890	556	555	558	443	1436	1435	152	545	615	1471
[12797]	441	651	1018	1019	657	1320	555	556	558	658	87	92	93	1167
[12811]	724	670	668	443	1091	612	653	465	584	364	796	600	433	1371
[12825]	1373	170	241	376	375	1080	1166	1082	1089	1261	1090	1069	511	1068
[12839]	1227	348	395	1052	693	618	513	665	202	20	1414	483	664	57
[12853]	597	484	510	227	410	590	327	374	296	471	295	363	452	681

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[12867]	485	442	259	544	392	1016	382	711	1363	1360	244	938	245	1225
[12881]	559	557	367	365	116	464	265	107	243	440	701	677	546	675
[12895]	655	563	1333	1345	812	537	598	790	530	620	755	514	515	1241
[12909]	722	1257	602	287	1268	1390	1274	400	403	1215	447	1549	430	450
[12923]	739	797	451	604	148	340	349	700	1101	1377	18	379	198	999
[12937]	1305	182	481	654	875	281	1247	1114	592	306	543	341	1086	1124
[12951]	553	549	311	587	345	985	623	968	980	619	680	1055	82	1056
[12965]	334	967	745	744	656	946	1280	1204	476	217	767	666	242	561
[12979]	566	573	580	479	89	1163	1139	990	1161	1126	1061	222	435	112
[12993]	51	1096	669	881	113	1286	1226	859	1099	1153	404	673	439	1199
[13007]	978	1214	1156	359	964	888	499	473	496	1437	424	1077	1058	431
[13021]	482	995	1263	434	989	506	991	84	1442	1242	1198	1475	436	1477
[13035]	297	518	80	1421	1081	368	650	532	1419	467	961	4	533	965
[13049]	1160	339	126	1502	1201	1446	394	15	325	329	326	1110	1012	162
[13063]	731	55	33	1545	508	336	146	16	488	23	253	24	486	28
[13077]	605	1036	795	469	360	503	502	1393	438	487	1366	330	1324	845
[13091]	925	789	393	929	640	667	504	1334	1010	1071	788	369	478	463
[13105]	354	1131	398	1435	1436	509	408	1318	512	912	1323	399	987	1059
[13119]	309	552	409	1182	480	1385	166	575	141	760	361	115	942	181
[13133]	581	308	583	180	582	390	111	1386	136	1171	1022	449	472	1415
[13147]	1072	475	1417	378	370	1021	470	305	1100	576	1220	928	266	672
[13161]	1035	54	674	248	1098	1121	161	954	1075	189	969	599	290	1297
[13175]	206	207	2	190	1296	539	1062	1197	122	505	1162	119	1533	1148
[13189]	1057	786	787	1060	110	213	1455	1130	630	1200	1372	682	62	718
[13203]	1561	723	381	342	1560	383	43	815	1169	1107	742	384	542	1562
[13217]	973	448	1015	524	333	943	1137	209	293	135	1138	810	1559	201
[13231]	540	456	1129	853	890	1243	885	273	883	879	519	302	1195	1064
[13245]	1407	396	257	1288	251	1037	1413	721	534	893	719	38	1154	91
[13259]	525	1150	761	562	911	446	444	802	1009	817	331	1451	874	792
[13273]	191	332	1224	1218	1013	1234	843	137	1441	1404	254	1450	906	279
[13287]	142	921	407	1374	816	841	804	131	526	813	863	1367	798	322
[13301]	1361	1279	944	215	839	1276	1219	1039	638	637	419	1550	825	1275
[13315]	429	358	282	1011	1346	1111	685	48	355	1005	47	507	632	764
[13329]	762	1401	98	460	1402	759	432	1368	801	758	1544	982	196	517
[13343]	3	1425	1216	186	1003	948	952	42	1426	676	1376	256	1237	614
[13357]	601	1223	1576	671	1432	1002	588	14	1007	459	454	548	1332	1497
[13371]	428	437	1319	809	541	736	377	1321	737	357	1501	366	1316	1284
[13385]	462	415	838	1008	58	405	1494	837	805	417	474	1369	414	1181
[13399]	629	710	631	962	1173	1050	1142	1589	1202	945	1049	1180	636	635
[13413]	413	1078	312	1420	1108	550	596	1079	773	353	1228	1017	916	1024
[13427]	1409	807	621	914	1105	851	852	844	715	1277	820	772	688	1310
[13441]	979	1191	818	1252	1221	1222	1065	69	270	272	278	75	11	324
[13455]	328	351	1406	421	1398	458	477	1147	535	27	264	194	195	1359
[13469]	622	1510	224	193	1309	1307	261	1165	799	958	1568	754	752	751
[13483]	1164	1330	173	1331	1113	172	1088	1565	106	1044	910	104	915	1528

[13497]	1066	1217	323	208	947	1292	800	1295	1563	819	1184	1564	402	726
[13511]	579	1585	594	705	1590	716	1379	1364	7	1034	774	211	1290	17
[13525]	1135	585	1289	320	318	317	314	1428	214	919	922	811	1306	1303
[13539]	930	344	343	1394	1457	578	121	220	690	1311	1143	1388	1387	103
[13553]	975	1236	1383	1543	1063	565	603	1190	1527	1577	560	100	1119	1384
[13567]	747	1151	1467	44	1586	292	574	1469	748	274	380	388	102	695
[13581]	606	608	1047	876	1070	1074	74	899	73	897	1529	338	286	285
[13595]	225	1429	569	1396	1470	516	781	957	662	1503	763	775	765	766
[13609]	1397	564	210	699	491	953	648	1591	493	114	568	571	240	1445
[13623]	659	313	609	567	140	613	1440	984	1046	498	1258	1170	981	1168
[13637]	1352	50	1030	704	1395	373	1212	372	1025	1375	694	1460	71	661
[13651]	489	1132	633	235	468	835	72	1519	416	1188	163	151	649	105
[13665]	1483	1514	913	1040	1043	1370	971	972	1026	139	177	175	1452	887
[13679]	1283	1312	791	1094	683	41	1186	1430	1584	40	1573	1526	808	1245
[13693]	551	1157	806	1084	1587	204	577	205	216	1567	56	1348	939	1313
[13707]	490	492	26	717	167	144	983	714	1329	529	709	1569	886	187
[13721]	1464	966	49	221	120	291	289	1524	233	1294	263	335	1351	70
[13735]	1140	821	1349	607	1422	1278	1104	249	1178	1102	1453	176	740	262
[13749]	1496	10	31	153	154	268	1355	1484	1389	1287	593	1211	1032	1092
[13763]	337	212	1023	1213	1298	352	1418	639	1208	12	591	1038	1095	1097
[13777]	1203	461	9	1185	1547	1505	1004	1508	1581	1006	1546	1045	1033	1109
[13791]	1536	83	1189	779	783	425	423	406	1304	350	826	828	1291	260
[13805]	307	283	276	271	520	527	1356	663	1362	628	627	1344	1342	713
[13819]	1341	1340	1339	1338	1337	1380	1381	1357	203	941	956	218	171	993
[13833]	1463	960	164	362	226	229	236	321	319	1029	1282	1281	1343	457
[13847]	706	708	165	168	1353	538	1571	1134	686	684	1392	1354	232	239
[13861]	646	288	1244	109	238	1264	237	1231	118	1431	1486	1382	1444	1136
[13875]	1232	247	963	1133	35	1042	301	1336	1487	19	712	1474	1473	1014
[13889]	1118	1117	1116	30	918	280	924	284	1183	831	1521	833	834	1265
[13903]	1266	1267	1272	79	63	1087	523	1509	1239	920	794	275	1518	412
[13917]	1054	411	923	1480	1482	1149	1491	1522	1235	1238	1525	1534	1285	1566
[13931]	1459	1325	1326	1327	1328	1575	1335	1423	528	907	611	125	836	936
[13945]	937	315	996	304	21	641	643	645	1599	88	94	770	99	753
[13959]	733	64	117	53	8	1127	228	219	188	1230	1205	901	1255	647
[13973]	1315	1314	134	1206	1207	1233	1209	868	52	869	877	36	101	777
[13987]	778	1448	1447	827	1251	1443	1250	1067	707	1542	1479	1449	860	858
[14001]	595	1073	678	689	660	1465	1461	905	904	652	60	1454	1458	1249
[14015]	1350	1106	387	310	1427	1308	294	1027	1554	86	1439	81	1141	878
[14029]	65	1466	66	867	951	950	949	536	531	871	174	1530	1531	67
[14043]	1523	1597	896	130	385	316	1083	1579	1495	149	1434	155	1031	1593
[14057]	156	157	129	1400	37	898	1159	1172	223	1594	1517	1535	158	1085
[14071]	521	1472	386	634	389	776	501	497	727	1405	1093	25	59	1254
[14085]	889	1145	909	873	687	1122	1520	1259	1076	988	732	1572	1260	418
[14099]	870	124	891	61	976	68	495	955	1552	183	85	1001	1490	1556
[14113]	977	814	453	1512	1403	986	1240	992	741	1500	842	1551	1299	1210

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[14127]	34	933	547	994	1103	768	1253	1595	1498	1123	97	625	1174	626
[14141]	642	1365	970	1158	644	234	829	1540	1152	32	197	743	108	729
[14155]	728	840	1175	230	720	1256	698	29	857	855	255	854	1000	697
[14169]	401	169	252	397	1511	959	703	1269	702	926	586	927	466	138
[14183]	1433	494	500	882	679	900	45	1570	735	159	90	793	932	179
[14197]	934	522	692	258	1248	1028	1048	1246	123	1051	427	624	1115	1411
[14211]	616	1538	1300	848	455	780	1424	1273	1270	617	738	39	1456	1128
[14225]	6	200	5	1	1507	1504	1553	856	303	756	866	865	864	861
[14239]	185	1347	746	1120	750	749	1468	426	1399	422	974	1196	1193	1187
[14253]	22	78	1488	1596	1557	1516	150	1515	1513	1499	1485	127	1146	892
[14267]	894	895	880	1438	872	884	1020	76	147	1558	77	1410	1408	128
[14281]	725	1555	1582	1578	184	231	1580	1476	1478	771	1588	769	356	1548
[14295]	785	734	1506	1053	610	803	1194	830	832	1192	1541	1412	1416	391
[14309]	1539	371	1493	199	445	1583	570	1598	572	192	1041	347	178	1177
[14323]	902	903	1574	13	850	1391	1462	846	847	849	1155	1262	160	908
[14337]	267	757	346	1532	1302	1537	1358	1176	250	246	730	1144	823	824
[14351]	940	1125	917	1293	420	133	132	691	1481	782	862	784	1592	298
[14365]	299	300	1179	1229	143	145	935	931	277	269	1271	998	997	822
[14379]	1378	589	1492	1489	554	95	1112	1301	96	696	46	1317	1322	171
[14393]	1370	1288	838	1348	66	1349	65	837	1238	1235	1300	1241	1386	488
[14407]	762	1257	764	756	1333	1522	1274	214	200	995	583	1305	1411	425
[14421]	721	719	1357	1356	863	1190	423	1132	581	582	1019	802	1018	1374
[14435]	248	1420	1297	1256	1382	819	1339	713	1296	1337	1338	757	1332	1377
[14449]	776	1188	717	1223	1264	714	1354	1353	1239	1421	1419	1186	655	7
[14463]	1182	689	8	1439	1035	177	835	601	707	1471	747	840	1313	175
[14477]	733	402	487	1227	811	486	1575	168	1215	993	716	72	992	125
[14491]	128	748	418	39	1393	1394	1395	685	599	73	1123	95	1364	994
[14505]	968	249	1247	1013	105	678	999	188	900	989	1148	1234	628	627
[14519]	427	828	881	1294	434	164	165	436	1109	826	991	243	1444	1086
[14533]	979	1095	706	127	1383	1097	682	1384	681	730	736	1457	592	786
[14547]	19	230	1583	787	1385	1359	1367	1187	1369	879	1177	234	758	978
[14561]	759	651	159	118	885	1096	657	737	988	1402	1379	1375	836	708
[14575]	1226	745	1192	1401	1194	1573	1334	801	1343	1548	715	1352	106	104
[14589]	580	1082	393	1081	42	990	1080	1150	1028	977	976	942	915	247
[14603]	800	910	1098	1100	297	232	305	307	732	1329	34	1335	123	1350
[14617]	1355	1479	1376	79	1398	45	674	1472	1442	1446	672	610	1308	577
[14631]	13	1562	334	799	1561	183	790	1560	167	603	760	147	638	637
[14645]	595	608	864	673	310	314	825	795	783	771	769	763	744	722
[14659]	699	397	401	679	1000	464	24	1306	151	1119	1464	1153	1365	1156
[14673]	1275	90	1502	1273	208	1390	74	1501	186	56	1551	1311	1022	1021
[14687]	1315	1345	21	1033	253	124	1346	792	1344	1342	1438	120	683	1245
[14701]	1341	71	720	1432	60	680	770	1314	705	1362	394	692	153	1287
[14715]	691	1279	140	139	1276	91	766	767	388	154	333	873	1127	304
[14729]	612	611	1107	1103	908	940	1552	955	1563	1029	1564	11	1565	1023
[14743]	1568	1590	1005	866	865	1474	654	820	196	1493	1202	1201	1198	1503

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[14757]	312	31	219	1340	861	400	1470	78	35	495	1486	524	623	1508
[14771]	1505	636	36	29	752	987	187	189	190	810	194	195	1031	1204
[14785]	831	204	851	852	218	1122	880	884	235	1053	1262	240	1004	754
[14799]	1024	1012	1011	765	1006	1323	169	772	135	773	1269	726	751	921
[14813]	602	1592	1038	559	551	557	1557	1559	1030	1027	1025	574	535	1543
[14827]	604	1330	739	1347	1299	1361	1285	1277	686	684	788	789	1240	794
[14841]	1	666	1236	1491	1331	1169	889	1216	49	212	5	6	428	446
[14855]	102	363	163	161	54	432	26	437	426	179	449	97	81	205
[14869]	99	422	46	561	1280	871	872	160	174	742	878	591	1468	593
[14883]	892	1286	32	570	572	1191	537	805	1483	566	761	217	1272	222
[14897]	530	225	894	596	617	1351	410	1065	9	1570	1058	669	633	256
[14911]	263	660	83	283	460	650	616	718	1544	130	64	121	711	911
[14925]	701	395	1254	635	1253	1319	1463	1428	1316	562	67	144	1422	594
[14939]	149	1454	68	134	1392	50	671	1458	1263	1388	1387	458	648	229
[14953]	958	1032	1520	874	877	236	237	891	895	1046	896	238	898	239
[14967]	1072	1073	1074	1075	1079	1078	1120	1489	1549	1200	1015	185	457	184
[14981]	1014	986	48	1595	1197	1492	967	226	814	1139	470	817	4	1499
[14995]	86	103	100	928	933	1060	1057	1034	254	1037	1358	688	1114	311
[15009]	1126	221	355	1195	197	1252	181	778	1242	180	1291	306	1083	909
[15023]	1085	906	905	904	1322	1093	785	723	1312	301	1317	1497	1536	606
[15037]	1569	59	27	30	1391	588	546	543	1494	1106	1524	1196	725	781
[15051]	597	440	1514	862	1530	1325	430	122	294	912	1092	1487	1328	1327
[15065]	1326	793	1116	734	579	1267	578	1266	1459	821	568	567	777	780
[15079]	220	1278	1117	1118	740	1243	1128	1184	1136	37	224	223	429	1581
[15093]	969	938	262	1582	944	1026	476	1578	96	1580	629	631	667	687
[15107]	479	1066	1554	1558	396	613	119	1555	172	462	960	173	461	471
[15121]	193	563	533	532	753	550	356	573	970	779	564	1020	1251	463
[15135]	656	1462	450	178	451	415	1250	917	621	1310	405	403	511	1534
[15149]	712	709	695	1547	117	101	1301	1484	630	150	1298	540	330	975
[15163]	844	996	1145	1070	982	913	322	1211	1212	957	1213	643	1535	1125
[15177]	962	1045	1175	948	257	308	1047	231	1055	952	1056	1584	469	1174
[15191]	1170	1431	166	641	1378	1366	412	411	622	63	735	1399	694	696
[15205]	146	1307	1309	700	1405	605	1380	768	645	1381	192	1481	554	191
[15219]	1232	1244	1519	1429	116	455	374	309	313	1064	647	518	1456	1539
[15233]	509	133	1091	644	512	1102	1541	453	1104	132	598	25	404	228
[15247]	98	998	1498	632	985	323	55	1259	52	642	444	1500	974	1260
[15261]	842	1284	980	1131	1506	408	997	57	943	1048	1538	1063	1576	88
[15275]	274	296	945	94	924	413	293	1042	634	918	609	914	662	1546
[15289]	1051	827	302	1140	61	1526	138	53	870	1111	1112	522	320	1281
[15303]	1282	369	1233	1237	318	1485	1230	338	525	823	886	824	1143	676
[15317]	1036	1141	743	1396	433	1360	1469	1467	784	782	973	3	639	261
[15331]	1152	1363	1437	407	317	893	875	22	882	1527	496	887	497	499
[15345]	501	1513	398	316	399	932	738	1124	1397	934	1572	1178	33	1304
[15359]	1528	1087	1321	1532	1507	1105	131	1115	112	113	76	1149	1599	77
[15373]	1588	1154	1336	1553	332	849	584	485	850	417	539	534	710	804

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[15387]	515	514	586	481	847	668	438	331	846	670	665	1512	1165	1041
[15401]	1466	1164	697	1465	1529	956	675	526	702	329	703	209	114	1171
[15415]	541	677	213	916	652	698	271	491	276	731	1293	1160	1579	264
[15429]	1424	1574	649	859	258	1461	1129	812	1389	890	1482	1283	1480	510
[15443]	791	1134	560	2	1246	360	1248	565	1172	315	1440	728	1533	1537
[15457]	442	519	729	953	443	420	1445	741	1010	1155	1556	658	1455	326
[15471]	903	1088	1130	325	646	902	901	954	963	1531	964	1217	1219	1504
[15485]	456	1203	1318	368	1062	1255	110	477	1258	465	1425	1426	619	1550
[15499]	288	324	1009	848	361	337	480	255	600	1185	1189	409	1176	575
[15513]	1061	663	808	126	704	252	380	806	1510	233	390	1495	158	813
[15527]	62	807	156	321	215	1163	816	319	981	856	907	984	1113	285
[15541]	286	959	300	508	242	1567	472	1598	1427	292	1516	266	544	1067
[15555]	727	936	922	937	939	919	1509	448	1515	267	155	1228	843	1400
[15569]	1265	625	467	626	749	1001	1121	1161	157	303	1229	931	935	38
[15583]	353	367	746	365	750	930	542	1179	818	447	1451	857	1449	1441
[15597]	855	421	854	1412	298	47	1077	552	335	1448	327	51	797	553
[15611]	556	829	589	590	459	1135	614	1434	1173	494	558	517	385	555
[15625]	387	500	454	389	822	1302	1475	549	1292	358	1597	1295	1593	1271
[15639]	1447	490	1443	529	1477	17	1162	1214	1249	344	343	1017	1137	419
[15653]	1542	216	815	406	386	287	1157	1151	951	941	1059	1490	949	1089
[15667]	1090	1453	1450	1110	585	950	1138	1224	1596	207	538	1221	1418	832
[15681]	1054	1435	897	830	1084	142	1039	1436	137	280	284	206	1511	841
[15695]	899	58	528	1050	275	1222	354	1452	547	858	883	1101	1488	176
[15709]	506	1540	251	527	1231	85	1049	520	371	1417	1415	1589	1577	273
[15723]	345	1525	664	888	108	69	492	1473	569	607	876	1199	203	468
[15737]	545	946	474	143	145	498	392	381	576	1303	148	1460	1585	382
[15751]	299	1193	925	109	12	260	10	620	929	384	383	1146	346	513
[15765]	1099	1545	1496	1181	1180	1218	375	661	659	798	1044	295	860	1403
[15779]	136	1324	1566	1002	141	201	1144	1225	473	441	869	1270	414	1591
[15793]	75	1594	983	279	281	391	839	1518	352	845	1220	1043	376	328
[15807]	41	1068	867	1069	40	1040	1521	245	445	244	868	1416	1423	653
[15821]	336	1016	1586	1008	1003	1007	965	1108	359	503	502	1205	1206	961
[15835]	1207	1587	1209	199	1142	1433	291	1183	211	1076	268	350	548	809
[15849]	1094	966	833	834	289	531	1147	1158	364	342	1210	372	972	1268
[15863]	265	971	536	926	357	15	1478	210	1168	1133	1476	435	347	920
[15877]	439	475	923	1071	493	1406	521	927	43	424	1414	431	277	466
[15891]	571	269	775	362	23	28	482	489	349	774	129	366	1408	115
[15905]	1410	1571	16	1430	618	348	111	1407	803	1413	1208	290	70	250
[15919]	246	624	272	198	270	278	1523	1517	351	1167	947	379	523	339
[15933]	1409	182	507	587	202	1372	373	504	690	505	483	478	755	484
[15947]	452	416	853	162	20	282	241	1166	1404	377	80	378	370	84
[15961]	516	1261	1159	1289	693	1371	1373	1290	796	341	1368	44	89	259
[15975]	18	82	107	1320	1052	615	340	640	14	170	227	724	87	92
[15989]	93	152	518	545	1437	372	529	1477	1475	602	1436	604	168	1435
[16003]	681	460	464	662	497	239	501	368	237	236	235	240	90	1458

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[16017]	1454	1534	693	100	747	567	121	568	103	19	594	1522	394	405
[16031]	83	687	80	1320	218	755	452	1056	1055	171	605	283	627	522
[16045]	628	14	546	978	999	1058	1139	563	562	123	1371	1373	1569	162
[16059]	432	1332	98	583	1386	481	120	469	187	465	668	173	670	172
[16073]	611	606	138	106	104	1395	1257	47	290	16	15	49	50	11
[16087]	51	341	1075	326	325	1072	968	245	244	928	305	35	20	238
[16101]	1227	1305	809	74	743	739	81	205	204	722	1052	1038	716	258
[16115]	760	389	257	1310	61	374	385	1590	387	1515	1516	261	160	306
[16129]	281	256	248	516	429	202	413	440	208	462	353	185	184	416
[16143]	183	182	241	323	311	159	264	1329	893	1212	1184	107	108	110
[16157]	677	675	962	735	738	836	62	1274	790	1261	1241	1234	890	42
[16171]	740	26	603	588	148	629	1374	630	596	597	18	631	600	620
[16185]	1237	994	333	977	350	352	269	995	1502	844	274	275	976	307
[16199]	312	988	989	277	991	1098	1100	314	1166	1204	992	1226	993	361
[16213]	835	685	656	645	643	641	638	637	1422	475	483	484	1416	622
[16227]	621	612	1	524	530	550	689	690	369	819	801	381	383	384
[16241]	781	773	537	400	767	753	748	717	714	713	703	695	694	772
[16255]	164	144	60	58	82	34	131	130	126	84	209	118	54	53
[16269]	191	52	1552	196	105	1554	29	146	152	6	7	221	222	259
[16283]	24	262	5	165	21	765	728	724	415	720	89	750	91	712
[16297]	702	698	766	203	71	751	393	642	745	742	752	1573	73	737
[16311]	754	736	72	734	1551	729	411	412	697	434	436	177	137	139
[16325]	176	140	142	175	1559	595	508	170	511	578	1359	1366	551	547
[16339]	166	1385	525	623	125	632	1337	1338	111	674	673	672	1339	667
[16353]	193	115	190	655	189	1348	644	181	124	180	635	1349	768	746
[16367]	1217	1085	28	1083	1230	884	324	1233	880	45	254	330	1244	27
[16381]	865	1073	23	861	1254	906	313	1200	1109	1114	1132	1140	1141	963
[16395]	933	295	296	1174	1175	304	1195	1196	1197	308	309	310	247	48
[16409]	63	1279	1594	220	56	1297	1276	1269	786	851	852	1296	787	775
[16423]	774	9	223	227	1397	1396	1442	1033	792	1086	749	75	1425	1426
[16437]	388	797	1190	36	770	1387	67	141	764	1415	762	161	1417	136
[16451]	582	719	300	179	298	651	109	733	233	731	1239	94	410	1334
[16465]	1382	704	541	721	1388	1264	88	680	586	1446	804	1527	657	581
[16479]	659	458	661	1501	1223	663	57	574	1228	820	1035	25	22	591
[16493]	593	699	1333	705	853	1278	1294	821	793	791	761	769	864	866
[16507]	944	616	617	636	1536	38	666	771	114	892	688	894	1465	195
[16521]	1497	194	1390	386	299	188	466	1466	186	513	1470	1471	477	1486
[16535]	1511	329	219	322	1526	1494	1449	1448	93	344	1421	758	1512	343
[16549]	618	1263	1253	340	1419	614	1252	228	134	849	1242	847	846	759
[16563]	113	785	1443	784	99	112	782	1447	780	683	441	692	64	192
[16577]	824	823	470	850	1503	215	1306	1311	360	1316	1319	599	895	30
[16591]	1367	1393	1364	1147	1153	1156	934	932	33	579	1369	1330	1331	267
[16605]	523	2	1042	3	4	715	285	1375	286	580	1584	249	1201	39
[16619]	243	1198	420	13	1061	1376	397	255	282	362	1432	371	1533	526
[16633]	439	395	881	678	232	1384	1383	135	87	1379	543	1398	1089	805

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[16647]	834	1401	1561	346	706	92	401	584	297	1420	1562	848	833	250
[16661]	1557	1090	246	1560	1402	351	252	1540	435	1506	744	723	390	212
[16675]	382	392	763	1495	251	303	1165	1164	943	1144	1129	1111	960	982
[16689]	8	263	1013	1014	1208	1525	885	776	783	367	365	363	802	59
[16703]	224	349	840	163	1247	873	879	1469	1335	147	707	577	553	613
[16717]	1462	487	552	598	535	486	453	671	1351	521	1377	679	575	1355
[16731]	718	1404	488	601	710	117	1467	1363	1360	317	272	1529	1309	446
[16745]	1307	646	270	480	788	789	918	1434	302	1357	273	1565	1321	1356
[16759]	564	1145	1315	1564	278	1563	647	154	1481	153	79	891	1029	31
[16773]	1362	406	294	711	1414	86	701	996	198	214	1314	1546	1568	924
[16787]	626	1532	490	619	476	1538	479	1530	149	1598	625	55	1066	1076
[16801]	1520	1290	615	639	970	1289	1346	676	213	576	682	266	197	927
[16815]	437	1547	101	512	509	1167	1041	449	665	364	1284	796	664	1399
[16829]	1394	1162	167	1479	1518	1483	533	288	1537	1521	201	44	85	1353
[16843]	1245	532	1354	287	531	338	810	293	457	825	640	1439	778	777
[16857]	1225	842	1267	1005	1389	1487	151	1266	536	956	1211	1524	1213	573
[16871]	1131	1215	320	318	1146	887	1343	225	549	938	359	985	1431	102
[16885]	1051	1048	430	1461	1034	1463	1012	1026	1549	726	419	980	1282	609
[16899]	1513	473	1281	863	169	1020	1544	1370	253	292	1030	284	1025	1023
[16913]	1096	280	150	260	981	984	17	1130	156	12	10	157	155	158
[16927]	1368	1286	116	1341	1313	1342	811	1344	817	226	1246	633	129	1514
[16941]	178	658	1340	404	403	708	210	77	76	1459	216	95	70	1575
[16955]	779	447	229	1595	1214	1183	43	41	40	921	608	1171	931	935
[16969]	418	1248	1519	590	886	1457	1556	1325	1326	1002	428	1036	587	1517
[16983]	1327	1480	1328	1482	291	289	859	872	845	474	471	1523	1509	491
[16997]	1412	1159	1219	1496	373	32	1488	1410	1408	1047	1074	1405	1484	828
[17011]	691	585	569	548	345	538	896	301	898	271	756	97	826	974
[17025]	800	799	68	276	78	69	1543	905	407	380	904	408	1160	451
[17039]	450	903	902	1464	402	1095	816	813	798	794	700	1350	1380	1381
[17053]	1110	507	505	1232	489	1097	1070	1194	909	1050	1577	1172	1507	1528
[17067]	1499	375	1490	37	207	206	1192	122	127	1255	857	855	1189	854
[17081]	128	1361	843	119	1285	1292	1295	1300	65	1283	1185	66	1588	831
[17095]	1069	1010	1566	1251	1250	265	990	1220	1455	1456	425	423	971	972
[17109]	1068	1485	1049	242	870	912	1044	504	812	877	1199	1407	1413	1542
[17123]	900	1209	907	917	1258	1207	1206	1205	1256	827	424	1468	1474	399
[17137]	398	377	357	1504	334	316	315	234	230	217	1555	1558	1593	1597
[17151]	431	1452	1291	1599	1324	669	660	1345	648	571	544	542	527	520
[17165]	1392	499	496	478	1424	1429	919	1078	922	1142	1079	1113	926	1032
[17179]	1180	1181	966	1440	1043	1473	1445	1040	1161	1358	1154	1249	1572	874
[17193]	558	556	965	555	1400	455	946	958	1071	498	830	727	1438	832
[17207]	1308	961	1510	953	757	869	868	1134	1304	1124	860	725	1262	649
[17221]	652	1275	1545	839	1273	1303	1088	448	929	925	1210	1103	1202	454
[17235]	459	1177	1428	1596	443	540	889	1567	438	1015	964	1441	1582	684
[17249]	686	1126	1406	957	1430	1531	986	959	979	342	815	461	1580	1117
[17263]	1450	867	442	1553	634	858	1116	1451	1259	1260	1118	409	650	1579

[17277]	1216	427	1508	528	472	1423	814	1505	1063	1492	1092	1323	1077	1347
[17291]	510	561	566	1489	1182	1268	1550	200	940	1143	1155	987	1138	882
[17305]	1046	1137	1179	1016	1587	1093	592	862	1176	915	174	908	467	554
[17319]	1236	1586	910	1170	1570	1222	1221	1031	1280	732	319	1001	1128	321
[17333]	327	328	741	1498	1500	339	1125	500	1592	1591	1087	1372	494	1059
[17347]	1453	1585	1028	444	1541	709	1149	973	335	1433	1003	417	358	570
[17361]	1108	519	1203	856	414	1444	838	572	1535	1302	559	1007	557	1272
[17375]	1008	837	482	1064	923	1091	1148	1135	463	920	1081	1265	1163	901
[17389]	871	1365	876	1240	878	421	1157	1231	875	1352	376	937	1576	514
[17403]	1065	366	936	515	1021	1022	1581	1578	1460	967	1583	355	1411	951
[17417]	517	818	1136	1403	950	949	1318	916	1188	1186	1493	883	1169	539
[17431]	1009	1150	1084	930	947	370	1224	1539	1218	1277	1094	654	1102	502
[17445]	503	1104	348	378	624	888	945	1057	1427	1418	1548	1060	495	841
[17459]	1298	954	975	1045	913	1187	231	955	336	1299	1243	969	914	607
[17473]	1378	1011	426	1107	422	1024	1082	1173	1112	1122	1080	1123	347	952
[17487]	1193	941	1293	948	1409	1105	1571	1287	1168	1491	1101	211	445	506
[17501]	1391	331	332	942	1099	337	1037	897	1067	1322	795	1317	899	1062
[17515]	807	1191	1574	1152	1301	1027	1336	279	1472	1039	1017	1018	1178	610
[17529]	565	829	1019	560	730	1054	696	808	1151	356	1238	1312	1235	1006
[17543]	806	998	1004	1589	268	433	534	1106	997	803	96	1158	391	1120
[17557]	1000	939	983	1053	199	396	354	1288	133	132	46	1121	911	379
[17571]	1119	492	485	493	456	1127	1476	1133	1478	1229	1115	1271	1270	468
[17585]	822	143	589	145	653	900	1479	1506	1375	833	691	1300	518	1470
[17599]	460	1262	1485	74	80	1483	1236	95	1234	1481	704	705	1462	725
[17613]	1468	1125	1308	1239	1264	601	225	873	1522	200	1277	877	634	577
[17627]	574	648	171	1294	168	262	660	162	267	1240	152	1424	938	928
[17641]	39	1177	46	1370	814	1190	1364	42	410	19	831	834	556	416
[17655]	554	561	1384	420	555	418	1383	558	886	1296	1297	533	1310	1309
[17669]	537	1307	1306	540	541	1305	543	1304	891	546	925	890	423	1382
[17683]	1132	562	563	412	588	591	1386	1274	593	594	595	596	1273	1387
[17697]	1388	872	1389	1145	603	1390	1263	583	582	884	1291	566	1290	1289
[17711]	415	1288	1286	1385	1285	573	1139	881	413	578	579	880	581	425
[17725]	1377	470	471	1106	1350	1349	474	1348	476	477	1347	479	481	1345
[17739]	483	484	486	487	1339	1351	1353	447	448	1362	1361	917	1359	1109
[17753]	455	1357	457	458	1356	1355	462	463	464	1354	466	1338	1337	1335
[17767]	522	436	523	524	525	1373	434	526	527	1313	1374	432	892	1376
[17781]	530	429	1311	532	520	894	1334	1366	498	1367	907	1332	906	1329
[17795]	921	1120	901	1323	440	1321	511	516	1129	1371	1	1261	611	851
[17809]	850	748	849	1164	751	752	753	754	847	846	1165	758	759	760
[17823]	761	762	844	764	1166	1212	745	744	721	722	723	724	726	1160
[17837]	728	729	731	732	733	734	735	736	737	853	739	740	852	742
[17851]	743	767	768	842	796	797	1189	801	802	1187	1185	1184	809	1182
[17865]	811	813	816	1179	819	820	821	828	823	824	825	1192	794	770
[17879]	1208	772	773	1204	1167	776	840	779	780	782	783	784	785	786
[17893]	787	836	790	835	792	1194	720	719	718	637	638	1253	1252	641

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[17907]	642	643	644	645	864	647	863	651	652	653	1248	655	656	657
[17921]	1247	1246	636	635	612	614	866	616	617	865	619	620	621	622
[17935]	623	1257	625	626	627	628	1256	630	1255	632	1254	861	662	1244
[17949]	692	693	694	695	1156	699	1233	1232	1230	706	707	708	1228	1227
[17963]	711	712	713	714	715	1226	717	690	689	1153	665	666	1242	1241
[17977]	669	671	672	673	674	676	678	679	680	681	683	684	685	686
[17991]	687	688	405	1100	1551	1552	989	148	147	146	1554	144	1041	142
[18005]	153	154	165	164	1548	161	1549	159	158	157	156	155	141	140
[18019]	127	126	125	124	123	1560	121	1561	1562	1563	128	1559	139	138
[18033]	137	136	1557	991	133	132	131	130	166	167	1547	980	209	208
[18047]	1532	1534	204	203	202	982	197	1048	978	222	1526	220	219	218
[18061]	217	216	976	214	977	196	195	182	181	180	179	985	177	176
[18075]	175	988	170	183	184	194	193	1539	191	190	189	188	187	186
[18089]	1540	1564	1565	115	1584	41	40	1005	1023	35	33	1590	31	29
[18103]	44	45	57	56	54	1582	1583	51	50	49	48	47	28	27
[18117]	12	11	10	1013	7	6	5	1598	3	2	13	14	26	1020
[18131]	24	23	22	1010	18	1595	16	15	58	59	1580	994	995	99
[18145]	98	97	1038	94	93	1573	91	1569	1568	992	113	112	111	110
[18159]	108	107	106	105	104	90	89	72	1028	69	68	67	66	65
[18173]	64	62	61	73	75	88	86	84	83	82	81	79	1033	77
[18187]	76	223	1070	328	1075	330	1454	1449	334	1448	1447	1078	338	1079
[18201]	1444	1443	1439	1438	346	1437	1086	1431	1458	1459	323	300	1477	303
[18215]	304	305	1475	307	1474	956	1472	1471	314	315	1466	317	1465	826
[18229]	1072	322	353	354	1430	932	385	931	1098	1402	1401	929	1398	1397
[18243]	393	394	395	397	1395	1394	400	401	1393	1392	934	935	1096	1429
[18257]	357	1428	940	361	363	364	1422	368	369	1421	371	1420	1419	374
[18271]	1417	1416	1415	1414	299	298	297	1497	256	1051	1517	968	1503	273
[18285]	254	253	963	274	275	257	258	960	261	263	1053	970	1512	264
[18299]	265	1501	1502	1052	962	259	234	1519	228	241	1058	1486	248	1523
[18313]	1484	290	292	247	1482	1524	1480	296	286	285	1487	1494	1493	1492
[18327]	1520	1510	974	1489	1488	230	283	1024	1104	1046	1045	1171	1105	1169
[18341]	1170	1022	1142	1143	1150	1173	1174	1018	1149	1147	1146	1144	1050	1019
[18355]	1095	1047	1021	1140	1097	1103	1102	1141	1101	1172	1055	1056	1040	1118
[18369]	1074	1117	1116	1115	1114	1131	1113	1162	1073	1065	1066	1130	1155	1128
[18383]	1127	1124	1154	1159	1123	1122	1119	1064	1077	1029	1085	1088	1027	1092
[18397]	1138	1093	1026	1107	1061	1084	1137	1110	1136	1111	1063	1042	1035	1043
[18411]	1034	1081	1083	1152	1049	1175	1176	1440	1442	1445	1446	1455	1456	1457
[18425]	1461	1463	1464	1473	1490	1491	1496	1498	1499	1500	1504	1505	1507	1508
[18439]	1436	1435	1378	1379	1380	1381	1391	1396	1400	1403	1405	1407	1408	1410
[18453]	1411	1412	1413	1423	1425	1426	1427	1432	1433	1509	1511	1513	1567	1570
[18467]	1571	1572	1574	1575	1576	1577	1578	1579	1581	1586	1587	1588	1589	1591
[18481]	1592	1593	1594	1596	1597	1566	1558	1514	1515	1516	1518	1521	1525	1527
[18495]	1528	1529	1530	1531	1533	1536	1537	1538	1541	1543	1544	1546	1553	1555
[18509]	1372	1369	1368	1222	1223	1224	1225	1231	1235	1237	1238	1243	1245	1249
[18523]	1250	1251	1258	1259	1260	1265	1266	1267	1268	1269	1221	1220	1180	1181

[18537]	1183	1186	1188	1191	1195	1196	1197	1198	1199	1200	1201	1211	1213	1214
[18551]	1215	1216	1217	1218	1219	1271	1272	1275	1320	1322	1325	1326	1327	1328
[18565]	1330	1331	1333	1336	1340	1341	1342	1343	1344	1346	1352	1358	1360	1363
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[18593]	1298	1299	1301	1302	1303	1312	1314	1315	1316	1317	1016	1015	1014	451
[18607]	450	449	446	442	439	438	437	435	433	430	428	427	452	453
[18621]	490	488	485	480	478	475	473	472	469	468	467	465	461	419
[18635]	417	383	382	381	380	379	377	375	373	372	366	362	360	356
[18649]	384	386	411	409	407	406	404	403	402	399	398	392	389	388
[18663]	387	491	494	586	580	576	575	572	571	570	569	568	567	565
[18677]	564	560	592	597	618	615	613	610	609	608	606	605	604	602
[18691]	600	599	598	559	557	529	528	521	519	517	513	512	509	508
[18705]	501	500	497	495	531	534	553	552	551	550	549	548	547	545
[18719]	544	542	538	536	535	355	352	351	169	163	160	151	150	149
[18733]	145	143	135	134	122	120	119	172	173	226	224	221	215	213
[18747]	212	211	205	198	192	185	178	174	118	117	55	53	52	43
[18761]	37	36	34	32	30	25	21	20	4	60	70	116	114	109
[18775]	103	102	101	100	96	92	87	85	78	71	227	229	325	324
[18789]	320	318	316	313	312	311	310	309	308	306	302	326	329	350
[18803]	349	348	345	344	343	342	341	339	337	333	332	331	301	295
[18817]	250	249	246	243	242	240	239	238	237	236	235	233	232	251
[18831]	252	294	293	288	287	281	278	277	276	272	271	270	269	255
[18845]	624	629	857	860	862	867	868	869	870	871	878	879	882	1599
[18859]	883	885	887	889	893	895	855	854	789	791	793	795	799	800
[18873]	804	805	810	812	815	817	818	830	832	843	845	848	896	898
[18887]	958	961	964	965	966	969	971	972	981	983	984	986	990	993
[18901]	996	999	1000	1012	957	955	908	909	910	911	912	913	915	916
[18915]	918	919	920	922	923	924	927	933	936	937	788	781	709	710
[18929]	716	727	730	738	741	746	747	749	750	755	756	757	763	765
[18943]	766	769	771	703	702	701	631	633	640	650	654	659	661	663
[18957]	664	667	668	670	675	677	682	696	697	698	700	774	775	778
[18971]	777	948	949	950	1080	231	947	1076	951	952	953	954	1071	199
[18985]	201	1535	1067	206	207	210	1068	1069	587	1082	946	945	502	585
[18999]	1495	1280	930	1099	280	584	282	284	926	1094	939	944	943	244
[19013]	245	1087	942	1089	1090	941	260	266	590	959	424	1585	1003	1002
[19027]	1001	492	1030	63	1031	1032	639	38	1025	1004	1017	8	9	17
[19041]	493	1011	1009	1008	1007	1006	998	997	1036	1556	1193	1054	967	1057
[19055]	1059	1060	1545	798	1542	973	129	975	1037	1039	646	649	987	607
[19069]	1044	489	658	979	803	289	1418	874	376	837	378	431	838	1148
[19083]	839	1409	875	876	370	1434	1134	1135	822	827	359	539	365	510
[19097]	367	1210	1151	1406	515	1163	408	514	1205	414	426	841	421	422
[19111]	1161	1206	856	1209	1168	859	858	390	1399	1207	396	1157	1158	1133
[19125]	888	347	505	1467	1229	506	319	507	321	1324	1460	905	904	1469
[19139]	454	1112	291	503	504	806	807	1478	808	1476	1108	459	914	327
[19153]	903	358	340	1202	1126	1178	1441	336	445	335	444	902	1453	1452

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[19167]	1451	443	899	897	279	589	1062	441	829	456	1203	1450	496	499
[19181]	1404	1270	1091	391	1121	1550	268	482	900	1479	1506	1375	833	691
[19195]	1300	518	1470	460	1262	1485	74	80	1483	1236	95	1234	1481	704
[19209]	705	1462	725	1468	1125	1308	1239	1264	601	225	873	1522	200	1277
[19223]	877	634	577	574	648	171	1294	168	262	660	162	267	1240	152
[19237]	1424	938	928	39	1177	46	1370	814	1190	1364	42	410	19	831
[19251]	834	556	416	554	561	1384	420	555	418	1383	558	886	1296	1297
[19265]	533	1310	1309	537	1307	1306	540	541	1305	543	1304	891	546	925
[19279]	890	423	1382	1132	562	563	412	588	591	1386	1274	593	594	595
[19293]	596	1273	1387	1388	872	1389	1145	603	1390	1263	583	582	884	1291
[19307]	566	1290	1289	415	1288	1286	1385	1285	573	1139	881	413	578	579
[19321]	880	581	425	1377	470	471	1106	1350	1349	474	1348	476	477	1347
[19335]	479	481	1345	483	484	486	487	1339	1351	1353	447	448	1362	1361
[19349]	917	1359	1109	455	1357	457	458	1356	1355	462	463	464	1354	466
[19363]	1338	1337	1335	522	436	523	524	525	1373	434	526	527	1313	1374
[19377]	432	892	1376	530	429	1311	532	520	894	1334	1366	498	1367	907
[19391]	1332	906	1329	921	1120	901	1323	440	1321	511	516	1129	1371	1
[19405]	1261	611	851	850	748	849	1164	751	752	753	754	847	846	1165
[19419]	758	759	760	761	762	844	764	1166	1212	745	744	721	722	723
[19433]	724	726	1160	728	729	731	732	733	734	735	736	737	853	739
[19447]	740	852	742	743	767	768	842	796	797	1189	801	802	1187	1185
[19461]	1184	809	1182	811	813	816	1179	819	820	821	828	823	824	825
[19475]	1192	794	770	1208	772	773	1204	1167	776	840	779	780	782	783
[19489]	784	785	786	787	836	790	835	792	1194	720	719	718	637	638
[19503]	1253	1252	641	642	643	644	645	864	647	863	651	652	653	1248
[19517]	655	656	657	1247	1246	636	635	612	614	866	616	617	865	619
[19531]	620	621	622	623	1257	625	626	627	628	1256	630	1255	632	1254
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[19559]	708	1228	1227	711	712	713	714	715	1226	717	690	689	1153	665
[19573]	666	1242	1241	669	671	672	673	674	676	678	679	680	681	683
[19587]	684	685	686	687	688	405	1100	1551	1552	989	148	147	146	1554
[19601]	144	1041	142	153	154	165	164	1548	161	1549	159	158	157	156
[19615]	155	141	140	127	126	125	124	123	1560	121	1561	1562	1563	128
[19629]	1559	139	138	137	136	1557	991	133	132	131	130	166	167	1547
[19643]	980	209	208	1532	1534	204	203	202	982	197	1048	978	222	1526
[19657]	220	219	218	217	216	976	214	977	196	195	182	181	180	179
[19671]	985	177	176	175	988	170	183	184	194	193	1539	191	190	189
[19685]	188	187	186	1540	1564	1565	115	1584	41	40	1005	1023	35	33
[19699]	1590	31	29	44	45	57	56	54	1582	1583	51	50	49	48
[19713]	47	28	27	12	11	10	1013	7	6	5	1598	3	2	13
[19727]	14	26	1020	24	23	22	1010	18	1595	16	15	58	59	1580
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[19769]	67	66	65	64	62	61	73	75	88	86	84	83	82	81
[19783]	79	1033	77	76	223	1070	328	1075	330	1454	1449	334	1448	1447

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[19797]	1078	338	1079	1444	1443	1439	1438	346	1437	1086	1431	1458	1459	323
[19811]	300	1477	303	304	305	1475	307	1474	956	1472	1471	314	315	1466
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[19839]	929	1398	1397	393	394	395	397	1395	1394	400	401	1393	1392	934
[19853]	935	1096	1429	357	1428	940	361	363	364	1422	368	369	1421	371
[19867]	1420	1419	374	1417	1416	1415	1414	299	298	297	1497	256	1051	1517
[19881]	968	1503	273	254	253	963	274	275	257	258	960	261	263	1053
[19895]	970	1512	264	265	1501	1502	1052	962	259	234	1519	228	241	1058
[19909]	1486	248	1523	1484	290	292	247	1482	1524	1480	296	286	285	1487
[19923]	1494	1493	1492	1520	1510	974	1489	1488	230	283	1024	1104	1046	1045
[19937]	1171	1105	1169	1170	1022	1142	1143	1150	1173	1174	1018	1149	1147	1146
[19951]	1144	1050	1019	1095	1047	1021	1140	1097	1103	1102	1141	1101	1172	1055
[19965]	1056	1040	1118	1074	1117	1116	1115	1114	1131	1113	1162	1073	1065	1066
[19979]	1130	1155	1128	1127	1124	1154	1159	1123	1122	1119	1064	1077	1029	1085
[19993]	1088	1027	1092	1138	1093	1026	1107	1061	1084	1137	1110	1136	1111	1063
[20007]	1042	1035	1043	1034	1081	1083	1152	1049	1175	1176	1440	1442	1445	1446
[20021]	1455	1456	1457	1461	1463	1464	1473	1490	1491	1496	1498	1499	1500	1504
[20035]	1505	1507	1508	1436	1435	1378	1379	1380	1381	1391	1396	1400	1403	1405
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[20077]	1588	1589	1591	1592	1593	1594	1596	1597	1566	1558	1514	1515	1516	1518
[20091]	1521	1525	1527	1528	1529	1530	1531	1533	1536	1537	1538	1541	1543	1544
[20105]	1546	1553	1555	1372	1369	1368	1222	1223	1224	1225	1231	1235	1237	1238
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[20203]	1015	1014	451	450	449	446	442	439	438	437	435	433	430	428
[20217]	427	452	453	490	488	485	480	478	475	473	472	469	468	467
[20231]	465	461	419	417	383	382	381	380	379	377	375	373	372	366
[20245]	362	360	356	384	386	411	409	407	406	404	403	402	399	398
[20259]	392	389	388	387	491	494	586	580	576	575	572	571	570	569
[20273]	568	567	565	564	560	592	597	618	615	613	610	609	608	606
[20287]	605	604	602	600	599	598	559	557	529	528	521	519	517	513
[20301]	512	509	508	501	500	497	495	531	534	553	552	551	550	549
[20315]	548	547	545	544	542	538	536	535	355	352	351	169	163	160
[20329]	151	150	149	145	143	135	134	122	120	119	172	173	226	224
[20343]	221	215	213	212	211	205	198	192	185	178	174	118	117	55
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[20399]	326	329	350	349	348	345	344	343	342	341	339	337	333	332
[20413]	331	301	295	250	249	246	243	242	240	239	238	237	236	235

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[20427]	233	232	251	252	294	293	288	287	281	278	277	276	272	271
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[20455]	879	882	1599	883	885	887	889	893	895	855	854	789	791	793
[20469]	795	799	800	804	805	810	812	815	817	818	830	832	843	845
[20483]	848	896	898	958	961	964	965	966	969	971	972	981	983	984
[20497]	986	990	993	996	999	1000	1012	957	955	908	909	910	911	912
[20511]	913	915	916	918	919	920	922	923	924	927	933	936	937	788
[20525]	781	709	710	716	727	730	738	741	746	747	749	750	755	756
[20539]	757	763	765	766	769	771	703	702	701	631	633	640	650	654
[20553]	659	661	663	664	667	668	670	675	677	682	696	697	698	700
[20567]	774	775	778	777	948	949	950	1080	231	947	1076	951	952	953
[20581]	954	1071	199	201	1535	1067	206	207	210	1068	1069	587	1082	946
[20595]	945	502	585	1495	1280	930	1099	280	584	282	284	926	1094	939
[20609]	944	943	244	245	1087	942	1089	1090	941	260	266	590	959	424
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[20637]	8	9	17	493	1011	1009	1008	1007	1006	998	997	1036	1556	1193
[20651]	1054	967	1057	1059	1060	1545	798	1542	973	129	975	1037	1039	646
[20665]	649	987	607	1044	489	658	979	803	289	1418	874	376	837	378
[20679]	431	838	1148	839	1409	875	876	370	1434	1134	1135	822	827	359
[20693]	539	365	510	367	1210	1151	1406	515	1163	408	514	1205	414	426
[20707]	841	421	422	1161	1206	856	1209	1168	859	858	390	1399	1207	396
[20721]	1157	1158	1133	888	347	505	1467	1229	506	319	507	321	1324	1460
[20735]	905	904	1469	454	1112	291	503	504	806	807	1478	808	1476	1108
[20749]	459	914	327	903	358	340	1202	1126	1178	1441	336	445	335	444
[20763]	902	1453	1452	1451	443	899	897	279	589	1062	441	829	456	1203
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[809,]	0.4508482	-0.7878228	0.4508484	1	1.573780e-07	0.4508484
[810,]	0.4508481	0.4508493	0.4508484	1	-9.715432e-07	0.4508484
[811,]	0.4508482	-0.7878229	0.4508484	1	2.627665e-07	0.4508484
[812,]	0.4508477	0.4508482	0.4508484	1	1.614174e-07	0.4508484
[813,]	0.4508483	-0.7878237	0.4508484	1	1.043770e-06	0.4508484
[814,]	0.4508484	-2.0264940	0.4508484	1	2.952538e-07	0.4508484
[815,]	0.4508475	0.4508473	0.4508484	1	1.068007e-06	0.4508484
[816,]	0.4508478	-0.7878237	0.4508484	1	1.043770e-06	0.4508484
[817,]	0.4508475	0.4508475	0.4508484	1	8.401827e-07	0.4508484
[818,]	0.4508487	0.4508466	0.4508484	1	1.702250e-06	0.4508484
[819,]	0.4508488	-0.7878225	0.4508484	1	-1.077425e-07	0.4508484
[820,]	0.4508487	-0.7878229	0.4508484	1	2.202248e-07	0.4508484
[821,]	0.4508477	-0.7878226	0.4508484	1	-4.047142e-08	0.4508484
[822,]	0.4508485	1.6895190	0.4508484	1	3.669158e-07	0.4508484
[823,]	0.4508476	-0.7878226	0.4508484	1	-3.526540e-08	0.4508484
[824,]	0.4508483	-0.7878226	0.4508484	1	-3.526540e-08	0.4508484
[825,]	0.4508490	-0.7878218	0.4508484	1	-8.309470e-07	0.4508484
[826,]	0.4508483	-0.7878231	0.4508484	1	5.022035e-07	0.4508484

[827,]	0.4508480	1.6895194	0.4508484	1	-8.054885e-08	0.4508484
[828,]	0.4508484	-0.7878231	0.4508484	1	5.022035e-07	0.4508484
[829,]	0.4508479	2.9281902	0.4508484	1	1.454095e-07	0.4508484
[830,]	0.4508491	0.4508494	0.4508484	1	-1.086451e-06	0.4508484
[831,]	0.4508479	-2.0264938	0.4508484	1	1.163934e-07	0.4508484
[832,]	0.4508491	0.4508494	0.4508484	1	-1.086451e-06	0.4508484
[833,]	0.4508485	-3.2651657	0.4508484	1	1.004068e-06	0.4508484
[834,]	0.4508489	-2.0264950	0.4508484	1	1.313506e-06	0.4508484
[835,]	0.4508491	-0.7878223	0.4508484	1	-2.939056e-07	0.4508484
[836,]	0.4508480	-0.7878229	0.4508484	1	2.623420e-07	0.4508484
[837,]	0.4508487	1.6895196	0.4508484	1	-2.340040e-07	0.4508484
[838,]	0.4508484	1.6895196	0.4508484	1	-2.340040e-07	0.4508484
[839,]	0.4508495	1.6895179	0.4508484	1	1.457877e-06	0.4508484
[840,]	0.4508492	-0.7878228	0.4508484	1	1.768962e-07	0.4508484
[841,]	0.4508486	1.6895183	0.4508484	1	1.017126e-06	0.4508484
[842,]	0.4508478	-0.7878225	0.4508484	1	-1.551593e-07	0.4508484
[843,]	0.4508485	0.4508481	0.4508484	1	2.796687e-07	0.4508484
[844,]	0.4508491	-0.7878216	0.4508484	1	-1.030732e-06	0.4508484
[845,]	0.4508485	0.4508478	0.4508484	1	5.992872e-07	0.4508484
[846,]	0.4508498	-0.7878217	0.4508484	1	-9.317465e-07	0.4508484
[847,]	0.4508493	-0.7878217	0.4508484	1	-9.317465e-07	0.4508484
[848,]	0.4508488	0.4508488	0.4508484	1	-4.627217e-07	0.4508484
[849,]	0.4508493	-0.7878217	0.4508484	1	-9.317465e-07	0.4508484
[850,]	0.4508487	-0.7878218	0.4508484	1	-8.065200e-07	0.4508484
[851,]	0.4508487	-0.7878227	0.4508484	1	3.788376e-08	0.4508484
[852,]	0.4508488	-0.7878227	0.4508484	1	3.788376e-08	0.4508484
[853,]	0.4508482	-0.7878227	0.4508484	1	8.298876e-08	0.4508484
[854,]	0.4508480	0.4508476	0.4508484	1	7.806167e-07	0.4508484
[855,]	0.4508480	0.4508476	0.4508484	1	7.806167e-07	0.4508484
[856,]	0.4508480	1.6895194	0.4508484	1	-7.026818e-08	0.4508484
[857,]	0.4508483	0.4508476	0.4508484	1	7.806167e-07	0.4508484
[858,]	0.4508482	1.6895187	0.4508484	1	6.857466e-07	0.4508484
[859,]	0.4508480	1.6895178	0.4508484	1	1.517777e-06	0.4508484
[860,]	0.4508491	0.4508493	0.4508484	1	-9.704089e-07	0.4508484
[861,]	0.4508480	-0.7878232	0.4508484	1	5.493013e-07	0.4508484
[862,]	0.4508485	0.4508516	0.4508484	1	-3.272523e-06	0.4508484
[863,]	0.4508485	-0.7878223	0.4508484	1	-2.852615e-07	0.4508484
[864,]	0.4508489	-0.7878232	0.4508484	1	5.272732e-07	0.4508484
[865,]	0.4508499	-0.7878232	0.4508484	1	5.493013e-07	0.4508484
[866,]	0.4508480	-0.7878231	0.4508484	1	4.476724e-07	0.4508484
[867,]	0.4508480	0.4508490	0.4508484	1	-6.528735e-07	0.4508484
[868,]	0.4508482	0.4508491	0.4508484	1	-7.434730e-07	0.4508484
[869,]	0.4508482	0.4508493	0.4508484	1	-9.704089e-07	0.4508484
[870,]	0.4508473	0.4508480	0.4508484	1	3.317449e-07	0.4508484
[871,]	0.4508483	0.4508482	0.4508484	1	1.303300e-07	0.4508484

[872,]	0.4508478	-0.7878230	0.4508484	1	3.169495e-07	0.4508484
[873,]	0.4508498	-2.0264943	0.4508484	1	6.491432e-07	0.4508484
[874,]	0.4508484	1.6895186	0.4508484	1	7.303530e-07	0.4508484
[875,]	0.4508491	1.6895188	0.4508484	1	5.413877e-07	0.4508484
[876,]	0.4508497	1.6895189	0.4508484	1	4.042943e-07	0.4508484
[877,]	0.4508486	-2.0264947	0.4508484	1	1.036499e-06	0.4508484
[878,]	0.4508493	0.4508482	0.4508484	1	1.303300e-07	0.4508484
[879,]	0.4508479	0.4508485	0.4508484	1	-1.124530e-07	0.4508484
[880,]	0.4508489	-0.7878233	0.4508484	1	7.101723e-07	0.4508484
[881,]	0.4508496	-0.7878230	0.4508484	1	3.919679e-07	0.4508484
[882,]	0.4508497	0.4508481	0.4508484	1	2.462595e-07	0.4508484
[883,]	0.4508493	0.4508472	0.4508484	1	1.141524e-06	0.4508484
[884,]	0.4508488	-0.7878233	0.4508484	1	7.101723e-07	0.4508484
[885,]	0.4508488	0.4508485	0.4508484	1	-1.124530e-07	0.4508484
[886,]	0.4508482	-0.7878228	0.4508484	1	1.491386e-07	0.4508484
[887,]	0.4508495	0.4508484	0.4508484	1	-1.178794e-08	0.4508484
[888,]	0.4508488	1.6895190	0.4508484	1	3.247533e-07	0.4508484
[889,]	0.4508492	0.4508481	0.4508484	1	2.480392e-07	0.4508484
[890,]	0.4508495	-0.7878219	0.4508484	1	-7.258779e-07	0.4508484
[891,]	0.4508495	-0.7878232	0.4508484	1	5.386413e-07	0.4508484
[892,]	0.4508494	-0.7878233	0.4508484	1	6.760155e-07	0.4508484
[893,]	0.4508489	0.4508474	0.4508484	1	9.803351e-07	0.4508484
[894,]	0.4508490	-0.7878233	0.4508484	1	6.760155e-07	0.4508484
[895,]	0.4508491	0.4508478	0.4508484	1	5.975193e-07	0.4508484
[896,]	0.4508489	0.4508483	0.4508484	1	6.856025e-08	0.4508484
[897,]	0.4508488	1.6895192	0.4508484	1	1.832222e-07	0.4508484
[898,]	0.4508488	0.4508483	0.4508484	1	6.856025e-08	0.4508484
[899,]	0.4508492	1.6895192	0.4508484	1	1.832222e-07	0.4508484
[900,]	0.4508497	-3.2651648	0.4508484	1	1.257253e-07	0.4508484
[901,]	0.4508497	-0.7878240	0.4508484	1	1.339242e-06	0.4508484
[902,]	0.4508489	1.6895196	0.4508484	1	-2.493194e-07	0.4508484
[903,]	0.4508489	1.6895196	0.4508484	1	-2.493194e-07	0.4508484
[904,]	0.4508489	1.6895195	0.4508484	1	-1.717449e-07	0.4508484
[905,]	0.4508484	1.6895195	0.4508484	1	-1.717449e-07	0.4508484
[906,]	0.4508484	-0.7878236	0.4508484	1	9.566396e-07	0.4508484
[907,]	0.4508487	-0.7878226	0.4508484	1	-6.345184e-09	0.4508484
[908,]	0.4508489	0.4508483	0.4508484	1	2.381341e-09	0.4508484
[909,]	0.4508481	0.4508482	0.4508484	1	1.388516e-07	0.4508484
[910,]	0.4508491	0.4508488	0.4508484	1	-4.289595e-07	0.4508484
[911,]	0.4508488	0.4508476	0.4508484	1	7.399390e-07	0.4508484
[912,]	0.4508487	0.4508482	0.4508484	1	1.407234e-07	0.4508484
[913,]	0.4508495	0.4508478	0.4508484	1	5.554439e-07	0.4508484
[914,]	0.4508480	1.6895190	0.4508484	1	3.128329e-07	0.4508484
[915,]	0.4508493	0.4508488	0.4508484	1	-4.289595e-07	0.4508484
[916,]	0.4508476	0.4508482	0.4508484	1	1.596309e-07	0.4508484

[917,]	0.4508504	-0.7878221	0.4508484	1	-5.288383e-07	0.4508484
[918,]	0.4508485	0.4508490	0.4508484	1	-6.012000e-07	0.4508484
[919,]	0.4508488	0.4508477	0.4508484	1	6.783653e-07	0.4508484
[920,]	0.4508508	0.4508481	0.4508484	1	2.909121e-07	0.4508484
[921,]	0.4508494	-0.7878232	0.4508484	1	5.353230e-07	0.4508484
[922,]	0.4508489	0.4508477	0.4508484	1	6.783653e-07	0.4508484
[923,]	0.4508467	0.4508481	0.4508484	1	2.909121e-07	0.4508484
[924,]	0.4508483	0.4508490	0.4508484	1	-6.012000e-07	0.4508484
[925,]	0.4508473	-0.7878227	0.4508484	1	3.616391e-08	0.4508484
[926,]	0.4508478	1.6895186	0.4508484	1	7.571394e-07	0.4508484
[927,]	0.4508477	0.4508473	0.4508484	1	1.032681e-06	0.4508484
[928,]	0.4508485	-2.0264939	0.4508484	1	2.657627e-07	0.4508484
[929,]	0.4508479	-0.7878227	0.4508484	1	3.616391e-08	0.4508484
[930,]	0.4508485	1.6895193	0.4508484	1	9.210203e-08	0.4508484
[931,]	0.4508481	-0.7878229	0.4508484	1	2.834791e-07	0.4508484
[932,]	0.4508477	-0.7878231	0.4508484	1	4.964718e-07	0.4508484
[933,]	0.4508491	0.4508481	0.4508484	1	2.366523e-07	0.4508484
[934,]	0.4508484	-0.7878231	0.4508484	1	4.964718e-07	0.4508484
[935,]	0.4508484	-0.7878229	0.4508484	1	2.834791e-07	0.4508484
[936,]	0.4508490	0.4508471	0.4508484	1	1.259219e-06	0.4508484
[937,]	0.4508482	0.4508471	0.4508484	1	1.259219e-06	0.4508484
[938,]	0.4508482	-2.0264940	0.4508484	1	2.920397e-07	0.4508484
[939,]	0.4508477	1.6895201	0.4508484	1	-7.987129e-07	0.4508484
[940,]	0.4508484	-0.7878227	0.4508484	1	9.893939e-08	0.4508484
[941,]	0.4508484	1.6895189	0.4508484	1	4.731075e-07	0.4508484
[942,]	0.4508485	1.6895186	0.4508484	1	7.033022e-07	0.4508484
[943,]	0.4508486	1.6895193	0.4508484	1	9.363236e-08	0.4508484
[944,]	0.4508467	1.6895194	0.4508484	1	-9.922475e-08	0.4508484
[945,]	0.4508483	1.6895196	0.4508484	1	-2.957019e-07	0.4508484
[946,]	0.4508480	1.6895193	0.4508484	1	7.489563e-08	0.4508484
[947,]	0.4508480	1.6895194	0.4508484	1	-4.523866e-08	0.4508484
[948,]	0.4508478	1.6895197	0.4508484	1	-3.065546e-07	0.4508484
[949,]	0.4508485	1.6895185	0.4508484	1	8.545265e-07	0.4508484
[950,]	0.4508485	1.6895185	0.4508484	1	8.545265e-07	0.4508484
[951,]	0.4508483	1.6895185	0.4508484	1	8.545265e-07	0.4508484
[952,]	0.4508489	1.6895197	0.4508484	1	-3.065546e-07	0.4508484
[953,]	0.4508485	1.6895195	0.4508484	1	-1.965568e-07	0.4508484
[954,]	0.4508487	1.6895190	0.4508484	1	3.763409e-07	0.4508484
[955,]	0.4508496	0.4508488	0.4508484	1	-4.323292e-07	0.4508484
[956,]	0.4508476	-0.7878229	0.4508484	1	2.252378e-07	0.4508484
[957,]	0.4508487	0.4508484	0.4508484	1	-4.940818e-08	0.4508484
[958,]	0.4508496	0.4508477	0.4508484	1	6.048813e-07	0.4508484
[959,]	0.4508489	1.6895200	0.4508484	1	-6.322270e-07	0.4508484
[960,]	0.4508489	-0.7878232	0.4508484	1	5.852592e-07	0.4508484
[961,]	0.4508483	0.4508485	0.4508484	1	-1.090147e-07	0.4508484

[962,]	0.4508480	-0.7878223	0.4508484	1	-3.737365e-07	0.4508484
[963,]	0.4508482	-0.7878226	0.4508484	1	-1.178638e-08	0.4508484
[964,]	0.4508488	0.4508482	0.4508484	1	1.793743e-07	0.4508484
[965,]	0.4508484	0.4508485	0.4508484	1	-1.090147e-07	0.4508484
[966,]	0.4508483	0.4508484	0.4508484	1	-5.162314e-08	0.4508484
[967,]	0.4508477	1.6895195	0.4508484	1	-1.206126e-07	0.4508484
[968,]	0.4508477	-0.7878229	0.4508484	1	3.136825e-07	0.4508484
[969,]	0.4508485	0.4508485	0.4508484	1	-1.917738e-07	0.4508484
[970,]	0.4508496	-0.7878225	0.4508484	1	-1.475219e-07	0.4508484
[971,]	0.4508486	0.4508473	0.4508484	1	1.098721e-06	0.4508484
[972,]	0.4508488	0.4508473	0.4508484	1	1.098721e-06	0.4508484
[973,]	0.4508488	1.6895190	0.4508484	1	3.192277e-07	0.4508484
[974,]	0.4508488	-0.7878231	0.4508484	1	4.258498e-07	0.4508484
[975,]	0.4508488	1.6895188	0.4508484	1	5.765781e-07	0.4508484
[976,]	0.4508489	-0.7878227	0.4508484	1	5.768224e-08	0.4508484
[977,]	0.4508489	-0.7878227	0.4508484	1	5.768224e-08	0.4508484
[978,]	0.4508474	-0.7878223	0.4508484	1	-3.018416e-07	0.4508484
[979,]	0.4508483	1.6895201	0.4508484	1	-7.232286e-07	0.4508484
[980,]	0.4508476	-0.7878237	0.4508484	1	1.073723e-06	0.4508484
[981,]	0.4508476	0.4508482	0.4508484	1	1.078895e-07	0.4508484
[982,]	0.4508476	-0.7878223	0.4508484	1	-3.297957e-07	0.4508484
[983,]	0.4508477	0.4508492	0.4508484	1	-8.247529e-07	0.4508484
[984,]	0.4508476	0.4508482	0.4508484	1	1.078895e-07	0.4508484
[985,]	0.4508481	-0.7878237	0.4508484	1	1.073723e-06	0.4508484
[986,]	0.4508481	0.4508477	0.4508484	1	6.478337e-07	0.4508484
[987,]	0.4508477	1.6895187	0.4508484	1	6.023214e-07	0.4508484
[988,]	0.4508475	-0.7878230	0.4508484	1	3.316497e-07	0.4508484
[989,]	0.4508475	-0.7878233	0.4508484	1	6.579040e-07	0.4508484
[990,]	0.4508476	0.4508476	0.4508484	1	7.713200e-07	0.4508484
[991,]	0.4508490	-0.7878233	0.4508484	1	6.579040e-07	0.4508484
[992,]	0.4508478	-0.7878231	0.4508484	1	4.947202e-07	0.4508484
[993,]	0.4508487	0.4508481	0.4508484	1	2.270015e-07	0.4508484
[994,]	0.4508486	-0.7878231	0.4508484	1	4.947202e-07	0.4508484
[995,]	0.4508487	-0.7878232	0.4508484	1	5.554366e-07	0.4508484
[996,]	0.4508484	0.4508481	0.4508484	1	2.346656e-07	0.4508484
[997,]	0.4508484	1.6895198	0.4508484	1	-4.598333e-07	0.4508484
[998,]	0.4508481	1.6895198	0.4508484	1	-4.598333e-07	0.4508484
[999,]	0.4508488	0.4508499	0.4508484	1	-1.546481e-06	0.4508484
[1000,]	0.4508488	0.4508487	0.4508484	1	-3.348019e-07	0.4508484
[1001,]	0.4508481	1.6895197	0.4508484	1	-3.458457e-07	0.4508484
[1002,]	0.4508481	1.6895186	0.4508484	1	7.349414e-07	0.4508484
[1003,]	0.4508481	1.6895185	0.4508484	1	8.759459e-07	0.4508484
[1004,]	0.4508485	1.6895198	0.4508484	1	-4.799991e-07	0.4508484
[1005,]	0.4508489	-0.7878229	0.4508484	1	2.359757e-07	0.4508484
[1006,]	0.4508486	1.6895198	0.4508484	1	-4.799991e-07	0.4508484

[1007,]	0.4508484	1.6895185	0.4508484	1	8.759459e-07	0.4508484
[1008,]	0.4508476	1.6895185	0.4508484	1	7.998296e-07	0.4508484
[1009,]	0.4508487	1.6895191	0.4508484	1	2.078484e-07	0.4508484
[1010,]	0.4508479	-0.7878228	0.4508484	1	1.906816e-07	0.4508484
[1011,]	0.4508479	1.6895192	0.4508484	1	1.548084e-07	0.4508484
[1012,]	0.4508490	0.4508479	0.4508484	1	4.590419e-07	0.4508484
[1013,]	0.4508484	-0.7878217	0.4508484	1	-9.380752e-07	0.4508484
[1014,]	0.4508480	0.4508483	0.4508484	1	4.736958e-08	0.4508484
[1015,]	0.4508487	0.4508487	0.4508484	1	-3.056375e-07	0.4508484
[1016,]	0.4508483	0.4508480	0.4508484	1	3.352278e-07	0.4508484
[1017,]	0.4508485	1.6895191	0.4508484	1	2.615995e-07	0.4508484
[1018,]	0.4508485	0.4508485	0.4508484	1	-1.560939e-07	0.4508484
[1019,]	0.4508482	0.4508485	0.4508484	1	-1.560939e-07	0.4508484
[1020,]	0.4508480	-0.7878231	0.4508484	1	4.431842e-07	0.4508484
[1021,]	0.4508480	0.4508476	0.4508484	1	7.967569e-07	0.4508484
[1022,]	0.4508492	0.4508476	0.4508484	1	7.967569e-07	0.4508484
[1023,]	0.4508489	-0.7878229	0.4508484	1	2.274464e-07	0.4508484
[1024,]	0.4508496	0.4508482	0.4508484	1	1.024511e-07	0.4508484
[1025,]	0.4508492	1.6895191	0.4508484	1	2.168679e-07	0.4508484
[1026,]	0.4508477	0.4508481	0.4508484	1	2.781795e-07	0.4508484
[1027,]	0.4508494	0.4508475	0.4508484	1	8.895674e-07	0.4508484
[1028,]	0.4508484	-0.7878224	0.4508484	1	-2.413032e-07	0.4508484
[1029,]	0.4508485	0.4508481	0.4508484	1	3.013793e-07	0.4508484
[1030,]	0.4508481	1.6895191	0.4508484	1	2.168679e-07	0.4508484
[1031,]	0.4508483	1.6895192	0.4508484	1	1.594514e-07	0.4508484
[1032,]	0.4508485	1.6895191	0.4508484	1	2.891493e-07	0.4508484
[1033,]	0.4508489	-0.7878226	0.4508484	1	-6.944745e-08	0.4508484
[1034,]	0.4508481	0.4508485	0.4508484	1	-1.919739e-07	0.4508484
[1035,]	0.4508484	0.4508487	0.4508484	1	-3.600278e-07	0.4508484
[1036,]	0.4508475	1.6895187	0.4508484	1	6.442351e-07	0.4508484
[1037,]	0.4508480	1.6895198	0.4508484	1	-4.943975e-07	0.4508484
[1038,]	0.4508476	-0.7878223	0.4508484	1	-3.467191e-07	0.4508484
[1039,]	0.4508488	1.6895194	0.4508484	1	-3.360898e-08	0.4508484
[1040,]	0.4508488	0.4508477	0.4508484	1	6.836705e-07	0.4508484
[1041,]	0.4508483	-0.7878224	0.4508484	1	-1.860830e-07	0.4508484
[1042,]	0.4508481	0.4508488	0.4508484	1	-4.213844e-07	0.4508484
[1043,]	0.4508484	0.4508477	0.4508484	1	6.836705e-07	0.4508484
[1044,]	0.4508486	1.6895190	0.4508484	1	3.145364e-07	0.4508484
[1045,]	0.4508475	0.4508489	0.4508484	1	-5.293432e-07	0.4508484
[1046,]	0.4508483	0.4508476	0.4508484	1	7.615928e-07	0.4508484
[1047,]	0.4508487	0.4508484	0.4508484	1	-2.701106e-08	0.4508484
[1048,]	0.4508484	-0.7878233	0.4508484	1	6.802510e-07	0.4508484
[1049,]	0.4508487	0.4508483	0.4508484	1	3.014750e-08	0.4508484
[1050,]	0.4508487	0.4508484	0.4508484	1	-8.425965e-08	0.4508484
[1051,]	0.4508488	-0.7878233	0.4508484	1	6.802510e-07	0.4508484

[1052,]	0.4508482	-0.7878226	0.4508484	1	1.032980e-08	0.4508484
[1053,]	0.4508476	-0.7878221	0.4508484	1	-5.720719e-07	0.4508484
[1054,]	0.4508480	1.6895193	0.4508484	1	5.618112e-08	0.4508484
[1055,]	0.4508483	0.4508489	0.4508484	1	-5.077562e-07	0.4508484
[1056,]	0.4508481	0.4508489	0.4508484	1	-5.077562e-07	0.4508484
[1057,]	0.4508487	1.6895203	0.4508484	1	-9.216339e-07	0.4508484
[1058,]	0.4508484	-0.7878228	0.4508484	1	1.506598e-07	0.4508484
[1059,]	0.4508480	1.6895204	0.4508484	1	-1.020952e-06	0.4508484
[1060,]	0.4508487	1.6895203	0.4508484	1	-9.216339e-07	0.4508484
[1061,]	0.4508487	0.4508477	0.4508484	1	6.221631e-07	0.4508484
[1062,]	0.4508481	2.9281907	0.4508484	1	-3.677864e-07	0.4508484
[1063,]	0.4508477	0.4508487	0.4508484	1	-3.018101e-07	0.4508484
[1064,]	0.4508485	0.4508481	0.4508484	1	2.897498e-07	0.4508484
[1065,]	0.4508482	0.4508484	0.4508484	1	-8.542640e-08	0.4508484
[1066,]	0.4508489	0.4508490	0.4508484	1	-6.778769e-07	0.4508484
[1067,]	0.4508482	1.6895196	0.4508484	1	-2.216466e-07	0.4508484
[1068,]	0.4508478	1.6895191	0.4508484	1	1.982174e-07	0.4508484
[1069,]	0.4508488	1.6895191	0.4508484	1	1.982174e-07	0.4508484
[1070,]	0.4508488	-0.7878215	0.4508484	1	-1.127672e-06	0.4508484
[1071,]	0.4508484	1.6895193	0.4508484	1	2.200955e-08	0.4508484
[1072,]	0.4508485	-0.7878218	0.4508484	1	-7.907422e-07	0.4508484
[1073,]	0.4508484	0.4508479	0.4508484	1	4.130177e-07	0.4508484
[1074,]	0.4508490	0.4508495	0.4508484	1	-1.154839e-06	0.4508484
[1075,]	0.4508489	-0.7878218	0.4508484	1	-7.907422e-07	0.4508484
[1076,]	0.4508490	1.6895186	0.4508484	1	7.642684e-07	0.4508484
[1077,]	0.4508487	0.4508485	0.4508484	1	-1.103997e-07	0.4508484
[1078,]	0.4508478	-0.7878217	0.4508484	1	-9.484341e-07	0.4508484
[1079,]	0.4508473	-0.7878217	0.4508484	1	-9.484341e-07	0.4508484
[1080,]	0.4508480	1.6895193	0.4508484	1	9.557087e-08	0.4508484
[1081,]	0.4508481	0.4508476	0.4508484	1	7.208596e-07	0.4508484
[1082,]	0.4508474	1.6895192	0.4508484	1	1.759547e-07	0.4508484
[1083,]	0.4508481	0.4508483	0.4508484	1	8.827541e-08	0.4508484
[1084,]	0.4508484	0.4508483	0.4508484	1	1.937767e-08	0.4508484
[1085,]	0.4508487	0.4508483	0.4508484	1	8.827541e-08	0.4508484
[1086,]	0.4508487	-0.7878223	0.4508484	1	-3.110062e-07	0.4508484
[1087,]	0.4508468	1.6895191	0.4508484	1	2.778494e-07	0.4508484
[1088,]	0.4508491	0.4508485	0.4508484	1	-1.489525e-07	0.4508484
[1089,]	0.4508468	1.6895193	0.4508484	1	5.754726e-08	0.4508484
[1090,]	0.4508494	1.6895193	0.4508484	1	5.754726e-08	0.4508484
[1091,]	0.4508477	2.9281905	0.4508484	1	-1.178128e-07	0.4508484
[1092,]	0.4508480	0.4508484	0.4508484	1	-4.597807e-08	0.4508484
[1093,]	0.4508482	0.4508482	0.4508484	1	1.149578e-07	0.4508484
[1094,]	0.4508485	1.6895182	0.4508484	1	1.137239e-06	0.4508484
[1095,]	0.4508474	0.4508488	0.4508484	1	-4.639447e-07	0.4508484
[1096,]	0.4508491	-0.7878224	0.4508484	1	-2.287734e-07	0.4508484

[1097,]	0.4508489	0.4508488	0.4508484	1	-4.639447e-07	0.4508484
[1098,]	0.4508486	-0.7878220	0.4508484	1	-6.178060e-07	0.4508484
[1099,]	0.4508485	1.6895195	0.4508484	1	-1.823269e-07	0.4508484
[1100,]	0.4508477	-0.7878220	0.4508484	1	-6.178060e-07	0.4508484
[1101,]	0.4508477	0.4508489	0.4508484	1	-5.400306e-07	0.4508484
[1102,]	0.4508489	0.4508488	0.4508484	1	-4.037627e-07	0.4508484
[1103,]	0.4508484	0.4508484	0.4508484	1	-7.455009e-08	0.4508484
[1104,]	0.4508489	0.4508488	0.4508484	1	-4.037627e-07	0.4508484
[1105,]	0.4508489	0.4508490	0.4508484	1	-6.225430e-07	0.4508484
[1106,]	0.4508489	-0.7878221	0.4508484	1	-5.399180e-07	0.4508484
[1107,]	0.4508498	0.4508482	0.4508484	1	1.068889e-07	0.4508484
[1108,]	0.4508491	1.6895189	0.4508484	1	4.927267e-07	0.4508484
[1109,]	0.4508480	-0.7878222	0.4508484	1	-4.674534e-07	0.4508484
[1110,]	0.4508469	0.4508475	0.4508484	1	8.170254e-07	0.4508484
[1111,]	0.4508483	0.4508475	0.4508484	1	8.090755e-07	0.4508484
[1112,]	0.4508483	1.6895197	0.4508484	1	-3.305849e-07	0.4508484
[1113,]	0.4508488	0.4508486	0.4508484	1	-2.139164e-07	0.4508484
[1114,]	0.4508488	0.4508483	0.4508484	1	8.960367e-08	0.4508484
[1115,]	0.4508501	0.4508504	0.4508484	1	-2.061735e-06	0.4508484
[1116,]	0.4508487	0.4508488	0.4508484	1	-4.272915e-07	0.4508484
[1117,]	0.4508490	0.4508488	0.4508484	1	-4.272915e-07	0.4508484
[1118,]	0.4508487	0.4508488	0.4508484	1	-4.272915e-07	0.4508484
[1119,]	0.4508472	0.4508476	0.4508484	1	7.495489e-07	0.4508484
[1120,]	0.4508469	-0.7878221	0.4508484	1	-5.245116e-07	0.4508484
[1121,]	0.4508456	2.9281920	0.4508484	1	-1.670792e-06	0.4508484
[1122,]	0.4508482	0.4508478	0.4508484	1	5.844390e-07	0.4508484
[1123,]	0.4508479	0.4508479	0.4508484	1	4.120186e-07	0.4508484
[1124,]	0.4508481	0.4508473	0.4508484	1	1.092555e-06	0.4508484
[1125,]	0.4508490	-2.0264943	0.4508484	1	6.585692e-07	0.4508484
[1126,]	0.4508474	1.6895190	0.4508484	1	3.309290e-07	0.4508484
[1127,]	0.4508479	0.4508485	0.4508484	1	-1.062867e-07	0.4508484
[1128,]	0.4508491	0.4508489	0.4508484	1	-5.934922e-07	0.4508484
[1129,]	0.4508480	-0.7878235	0.4508484	1	8.242008e-07	0.4508484
[1130,]	0.4508480	0.4508474	0.4508484	1	9.025465e-07	0.4508484
[1131,]	0.4508490	0.4508476	0.4508484	1	7.226552e-07	0.4508484
[1132,]	0.4508493	-0.7878230	0.4508484	1	3.635808e-07	0.4508484
[1133,]	0.4508469	1.6895192	0.4508484	1	1.258506e-07	0.4508484
[1134,]	0.4508479	1.6895189	0.4508484	1	4.867135e-07	0.4508484
[1135,]	0.4508487	1.6895187	0.4508484	1	6.114266e-07	0.4508484
[1136,]	0.4508483	0.4508478	0.4508484	1	5.297222e-07	0.4508484
[1137,]	0.4508485	0.4508484	0.4508484	1	-4.996673e-08	0.4508484
[1138,]	0.4508485	0.4508484	0.4508484	1	-4.996673e-08	0.4508484
[1139,]	0.4508478	-0.7878233	0.4508484	1	6.398228e-07	0.4508484
[1140,]	0.4508483	0.4508479	0.4508484	1	4.835371e-07	0.4508484
[1141,]	0.4508493	0.4508483	0.4508484	1	8.213381e-08	0.4508484

[1142,]	0.4508485	0.4508481	0.4508484	1	2.905624e-07	0.4508484
[1143,]	0.4508482	0.4508485	0.4508484	1	-1.322851e-07	0.4508484
[1144,]	0.4508472	0.4508482	0.4508484	1	1.535812e-07	0.4508484
[1145,]	0.4508472	-0.7878234	0.4508484	1	7.610766e-07	0.4508484
[1146,]	0.4508493	0.4508483	0.4508484	1	7.385089e-08	0.4508484
[1147,]	0.4508482	0.4508478	0.4508484	1	5.411580e-07	0.4508484
[1148,]	0.4508469	1.6895187	0.4508484	1	6.223013e-07	0.4508484
[1149,]	0.4508483	0.4508486	0.4508484	1	-2.627653e-07	0.4508484
[1150,]	0.4508469	0.4508474	0.4508484	1	9.158828e-07	0.4508484
[1151,]	0.4508478	1.6895190	0.4508484	1	3.243700e-07	0.4508484
[1152,]	0.4508478	0.4508490	0.4508484	1	-6.643703e-07	0.4508484
[1153,]	0.4508481	-0.7878222	0.4508484	1	-4.253394e-07	0.4508484
[1154,]	0.4508490	0.4508476	0.4508484	1	7.339348e-07	0.4508484
[1155,]	0.4508484	0.4508482	0.4508484	1	1.459292e-07	0.4508484
[1156,]	0.4508489	-0.7878222	0.4508484	1	-4.253394e-07	0.4508484
[1157,]	0.4508484	1.6895191	0.4508484	1	2.925059e-07	0.4508484
[1158,]	0.4508489	1.6895198	0.4508484	1	-4.172634e-07	0.4508484
[1159,]	0.4508487	0.4508496	0.4508484	1	-1.267921e-06	0.4508484
[1160,]	0.4508491	-0.7878235	0.4508484	1	8.176619e-07	0.4508484
[1161,]	0.4508480	1.6895193	0.4508484	1	2.783634e-08	0.4508484
[1162,]	0.4508484	0.4508492	0.4508484	1	-8.191853e-07	0.4508484
[1163,]	0.4508487	1.6895200	0.4508484	1	-6.299713e-07	0.4508484
[1164,]	0.4508493	-0.7878223	0.4508484	1	-3.377820e-07	0.4508484
[1165,]	0.4508478	-0.7878223	0.4508484	1	-3.377820e-07	0.4508484
[1166,]	0.4508481	-0.7878226	0.4508484	1	3.112289e-09	0.4508484
[1167,]	0.4508485	-0.7878231	0.4508484	1	4.495796e-07	0.4508484
[1168,]	0.4508486	1.6895193	0.4508484	1	3.848769e-09	0.4508484
[1169,]	0.4508484	0.4508486	0.4508484	1	-2.077543e-07	0.4508484
[1170,]	0.4508485	0.4508489	0.4508484	1	-5.763322e-07	0.4508484
[1171,]	0.4508478	0.4508478	0.4508484	1	5.312340e-07	0.4508484
[1172,]	0.4508484	0.4508483	0.4508484	1	7.008139e-08	0.4508484
[1173,]	0.4508483	0.4508478	0.4508484	1	5.740035e-07	0.4508484
[1174,]	0.4508487	0.4508480	0.4508484	1	3.459807e-07	0.4508484
[1175,]	0.4508484	0.4508480	0.4508484	1	3.459807e-07	0.4508484
[1176,]	0.4508481	0.4508484	0.4508484	1	-5.073160e-08	0.4508484
[1177,]	0.4508481	-2.0264937	0.4508484	1	3.234985e-08	0.4508484
[1178,]	0.4508478	1.6895196	0.4508484	1	-2.787839e-07	0.4508484
[1179,]	0.4508482	-0.7878222	0.4508484	1	-4.011431e-07	0.4508484
[1180,]	0.4508474	0.4508480	0.4508484	1	3.646697e-07	0.4508484
[1181,]	0.4508483	0.4508480	0.4508484	1	3.646697e-07	0.4508484
[1182,]	0.4508483	-0.7878232	0.4508484	1	6.042155e-07	0.4508484
[1183,]	0.4508476	0.4508478	0.4508484	1	5.192993e-07	0.4508484
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[1185,]	0.4508489	-0.7878226	0.4508484	1	-1.206749e-08	0.4508484
[1186,]	0.4508483	0.4508485	0.4508484	1	-1.827138e-07	0.4508484

[1187,]	0.4508488	-0.7878231	0.4508484	1	4.249467e-07	0.4508484
[1188,]	0.4508487	0.4508485	0.4508484	1	-1.827138e-07	0.4508484
[1189,]	0.4508483	-0.7878226	0.4508484	1	-1.206749e-08	0.4508484
[1190,]	0.4508487	-2.0264940	0.4508484	1	3.831448e-07	0.4508484
[1191,]	0.4508483	0.4508483	0.4508484	1	8.970728e-08	0.4508484
[1192,]	0.4508483	-0.7878226	0.4508484	1	-1.060800e-08	0.4508484
[1193,]	0.4508492	1.6895192	0.4508484	1	1.698358e-07	0.4508484
[1194,]	0.4508484	-0.7878226	0.4508484	1	-6.021709e-08	0.4508484
[1195,]	0.4508485	0.4508489	0.4508484	1	-5.827945e-07	0.4508484
[1196,]	0.4508489	0.4508485	0.4508484	1	-1.032452e-07	0.4508484
[1197,]	0.4508481	0.4508487	0.4508484	1	-3.389460e-07	0.4508484
[1198,]	0.4508478	0.4508496	0.4508484	1	-1.205074e-06	0.4508484
[1199,]	0.4508492	0.4508476	0.4508484	1	7.146448e-07	0.4508484
[1200,]	0.4508480	0.4508487	0.4508484	1	-3.389460e-07	0.4508484
[1201,]	0.4508480	0.4508496	0.4508484	1	-1.205074e-06	0.4508484
[1202,]	0.4508480	1.6895198	0.4508484	1	-4.093884e-07	0.4508484
[1203,]	0.4508478	2.9281905	0.4508484	1	-1.319355e-07	0.4508484
[1204,]	0.4508479	-0.7878229	0.4508484	1	2.633595e-07	0.4508484
[1205,]	0.4508496	1.6895204	0.4508484	1	-1.046228e-06	0.4508484
[1206,]	0.4508482	1.6895204	0.4508484	1	-1.046228e-06	0.4508484
[1207,]	0.4508482	1.6895204	0.4508484	1	-1.046228e-06	0.4508484
[1208,]	0.4508480	-0.7878218	0.4508484	1	-8.546775e-07	0.4508484
[1209,]	0.4508496	1.6895204	0.4508484	1	-1.046228e-06	0.4508484
[1210,]	0.4508470	1.6895210	0.4508484	1	-1.650030e-06	0.4508484
[1211,]	0.4508478	0.4508489	0.4508484	1	-5.579688e-07	0.4508484
[1212,]	0.4508474	-0.7878227	0.4508484	1	8.113916e-08	0.4508484
[1213,]	0.4508483	0.4508489	0.4508484	1	-5.579688e-07	0.4508484
[1214,]	0.4508490	0.4508483	0.4508484	1	1.599145e-08	0.4508484
[1215,]	0.4508477	0.4508480	0.4508484	1	3.507031e-07	0.4508484
[1216,]	0.4508490	0.4508482	0.4508484	1	1.376480e-07	0.4508484
[1217,]	0.4508477	0.4508488	0.4508484	1	-4.682105e-07	0.4508484
[1218,]	0.4508477	0.4508484	0.4508484	1	-3.157276e-08	0.4508484
[1219,]	0.4508479	0.4508483	0.4508484	1	4.485866e-08	0.4508484
[1220,]	0.4508480	0.4508483	0.4508484	1	2.115355e-08	0.4508484
[1221,]	0.4508479	0.4508467	0.4508484	1	1.634022e-06	0.4508484
[1222,]	0.4508482	0.4508467	0.4508484	1	1.634022e-06	0.4508484
[1223,]	0.4508486	0.4508483	0.4508484	1	8.407738e-08	0.4508484
[1224,]	0.4508477	0.4508473	0.4508484	1	1.078324e-06	0.4508484
[1225,]	0.4508477	0.4508478	0.4508484	1	5.619977e-07	0.4508484
[1226,]	0.4508479	-0.7878232	0.4508484	1	5.596786e-07	0.4508484
[1227,]	0.4508477	-0.7878222	0.4508484	1	-4.812575e-07	0.4508484
[1228,]	0.4508484	-0.7878225	0.4508484	1	-1.544719e-07	0.4508484
[1229,]	0.4508476	1.6895184	0.4508484	1	9.607803e-07	0.4508484
[1230,]	0.4508484	-0.7878230	0.4508484	1	3.206599e-07	0.4508484
[1231,]	0.4508482	0.4508477	0.4508484	1	6.746912e-07	0.4508484

[1232,]	0.4508477	-0.7878230	0.4508484	1	3.372063e-07	0.4508484
[1233,]	0.4508487	-0.7878230	0.4508484	1	3.206599e-07	0.4508484
[1234,]	0.4508481	-2.0264954	0.4508484	1	1.698355e-06	0.4508484
[1235,]	0.4508482	0.4508485	0.4508484	1	-1.197632e-07	0.4508484
[1236,]	0.4508481	-2.0264952	0.4508484	1	1.537205e-06	0.4508484
[1237,]	0.4508481	0.4508479	0.4508484	1	4.208153e-07	0.4508484
[1238,]	0.4508487	0.4508485	0.4508484	1	-1.197632e-07	0.4508484
[1239,]	0.4508475	-2.0264940	0.4508484	1	3.414800e-07	0.4508484
[1240,]	0.4508466	-2.0264939	0.4508484	1	2.300359e-07	0.4508484
[1241,]	0.4508475	-0.7878215	0.4508484	1	-1.095867e-06	0.4508484
[1242,]	0.4508483	-0.7878231	0.4508484	1	4.508387e-07	0.4508484
[1243,]	0.4508484	0.4508481	0.4508484	1	2.640874e-07	0.4508484
[1244,]	0.4508479	-0.7878231	0.4508484	1	4.540503e-07	0.4508484
[1245,]	0.4508477	0.4508477	0.4508484	1	6.972165e-07	0.4508484
[1246,]	0.4508484	-0.7878227	0.4508484	1	1.130483e-07	0.4508484
[1247,]	0.4508476	-0.7878220	0.4508484	1	-5.970295e-07	0.4508484
[1248,]	0.4508473	-0.7878227	0.4508484	1	1.130483e-07	0.4508484
[1249,]	0.4508485	0.4508491	0.4508484	1	-7.488932e-07	0.4508484
[1250,]	0.4508477	0.4508484	0.4508484	1	-2.196911e-08	0.4508484
[1251,]	0.4508473	0.4508484	0.4508484	1	-2.196911e-08	0.4508484
[1252,]	0.4508477	-0.7878224	0.4508484	1	-1.900692e-07	0.4508484
[1253,]	0.4508473	-0.7878228	0.4508484	1	1.898388e-07	0.4508484
[1254,]	0.4508485	-0.7878232	0.4508484	1	5.737936e-07	0.4508484
[1255,]	0.4508483	-0.7878230	0.4508484	1	3.637465e-07	0.4508484
[1256,]	0.4508481	-0.7878221	0.4508484	1	-5.543179e-07	0.4508484
[1257,]	0.4508486	-0.7878213	0.4508484	1	-1.285338e-06	0.4508484
[1258,]	0.4508476	0.4508490	0.4508484	1	-6.358357e-07	0.4508484
[1259,]	0.4508493	0.4508482	0.4508484	1	1.629496e-07	0.4508484
[1260,]	0.4508516	0.4508482	0.4508484	1	1.629496e-07	0.4508484
[1261,]	0.4508490	-0.7878215	0.4508484	1	-1.116410e-06	0.4508484
[1262,]	0.4508491	-2.0264930	0.4508484	1	-6.533194e-07	0.4508484
[1263,]	0.4508493	-0.7878226	0.4508484	1	5.133072e-09	0.4508484
[1264,]	0.4508480	-2.0264941	0.4508484	1	4.710232e-07	0.4508484
[1265,]	0.4508482	0.4508477	0.4508484	1	7.012712e-07	0.4508484
[1266,]	0.4508482	0.4508484	0.4508484	1	1.551993e-10	0.4508484
[1267,]	0.4508485	0.4508484	0.4508484	1	1.551993e-10	0.4508484
[1268,]	0.4508481	0.4508485	0.4508484	1	-1.113490e-07	0.4508484
[1269,]	0.4508495	0.4508486	0.4508484	1	-2.808614e-07	0.4508484
[1270,]	0.4508472	2.9281902	0.4508484	1	1.817544e-07	0.4508484
[1271,]	0.4508485	0.4508477	0.4508484	1	6.843914e-07	0.4508484
[1272,]	0.4508484	0.4508477	0.4508484	1	6.029189e-07	0.4508484
[1273,]	0.4508481	-0.7878231	0.4508484	1	4.745572e-07	0.4508484
[1274,]	0.4508474	-0.7878214	0.4508484	1	-1.227499e-06	0.4508484
[1275,]	0.4508478	0.4508485	0.4508484	1	-1.436966e-07	0.4508484
[1276,]	0.4508476	0.4508487	0.4508484	1	-3.813422e-07	0.4508484

[1277,]	0.4508476	-2.0264942	0.4508484	1	5.396557e-07	0.4508484
[1278,]	0.4508481	0.4508486	0.4508484	1	-2.334313e-07	0.4508484
[1279,]	0.4508489	0.4508487	0.4508484	1	-3.813422e-07	0.4508484
[1280,]	0.4508479	1.6895187	0.4508484	1	6.528145e-07	0.4508484
[1281,]	0.4508474	0.4508484	0.4508484	1	-3.807330e-08	0.4508484
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[1284,]	0.4508484	0.4508488	0.4508484	1	-4.075629e-07	0.4508484
[1285,]	0.4508486	-0.7878230	0.4508484	1	3.330403e-07	0.4508484
[1286,]	0.4508493	-0.7878239	0.4508484	1	1.219227e-06	0.4508484
[1287,]	0.4508482	0.4508488	0.4508484	1	-4.235969e-07	0.4508484
[1288,]	0.4508473	-0.7878228	0.4508484	1	1.441188e-07	0.4508484
[1289,]	0.4508475	-0.7878215	0.4508484	1	-1.095769e-06	0.4508484
[1290,]	0.4508466	-0.7878215	0.4508484	1	-1.095769e-06	0.4508484
[1291,]	0.4508494	-0.7878230	0.4508484	1	3.171523e-07	0.4508484
[1292,]	0.4508494	0.4508481	0.4508484	1	2.942910e-07	0.4508484
[1293,]	0.4508481	0.4508481	0.4508484	1	2.923519e-07	0.4508484
[1294,]	0.4508478	-2.0264938	0.4508484	1	1.242152e-07	0.4508484
[1295,]	0.4508488	0.4508481	0.4508484	1	2.942910e-07	0.4508484
[1296,]	0.4508483	-0.7878220	0.4508484	1	-6.536757e-07	0.4508484
[1297,]	0.4508483	-0.7878220	0.4508484	1	-6.536757e-07	0.4508484
[1298,]	0.4508477	0.4508485	0.4508484	1	-1.162959e-07	0.4508484
[1299,]	0.4508485	0.4508489	0.4508484	1	-5.833538e-07	0.4508484
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[1301,]	0.4508485	0.4508486	0.4508484	1	-2.834453e-07	0.4508484
[1302,]	0.4508484	0.4508484	0.4508484	1	-2.610762e-08	0.4508484
[1303,]	0.4508485	0.4508476	0.4508484	1	7.657615e-07	0.4508484
[1304,]	0.4508473	-0.7878231	0.4508484	1	4.384472e-07	0.4508484
[1305,]	0.4508473	-0.7878215	0.4508484	1	-1.131167e-06	0.4508484
[1306,]	0.4508482	-0.7878223	0.4508484	1	-3.674982e-07	0.4508484
[1307,]	0.4508492	-0.7878227	0.4508484	1	9.285312e-08	0.4508484
[1308,]	0.4508482	-2.0264935	0.4508484	1	-1.796662e-07	0.4508484
[1309,]	0.4508477	-0.7878227	0.4508484	1	9.285312e-08	0.4508484
[1310,]	0.4508476	-0.7878225	0.4508484	1	-1.428387e-07	0.4508484
[1311,]	0.4508481	-0.7878223	0.4508484	1	-3.674982e-07	0.4508484
[1312,]	0.4508481	0.4508487	0.4508484	1	-3.706808e-07	0.4508484
[1313,]	0.4508499	-0.7878216	0.4508484	1	-1.035778e-06	0.4508484
[1314,]	0.4508487	0.4508479	0.4508484	1	5.010743e-07	0.4508484
[1315,]	0.4508479	0.4508479	0.4508484	1	4.186652e-07	0.4508484
[1316,]	0.4508484	0.4508490	0.4508484	1	-6.623351e-07	0.4508484
[1317,]	0.4508488	0.4508484	0.4508484	1	-2.340520e-08	0.4508484
[1318,]	0.4508483	0.4508478	0.4508484	1	5.302573e-07	0.4508484
[1319,]	0.4508482	0.4508490	0.4508484	1	-6.623351e-07	0.4508484
[1320,]	0.4508488	0.4508496	0.4508484	1	-1.285182e-06	0.4508484
[1321,]	0.4508476	-0.7878228	0.4508484	1	1.229206e-07	0.4508484

[1322,]	0.4508482	0.4508486	0.4508484	1	-2.185660e-07	0.4508484
[1323,]	0.4508478	-0.7878229	0.4508484	1	2.414081e-07	0.4508484
[1324,]	0.4508488	1.6895193	0.4508484	1	7.418629e-08	0.4508484
[1325,]	0.4508482	0.4508488	0.4508484	1	-4.858153e-07	0.4508484
[1326,]	0.4508490	0.4508488	0.4508484	1	-4.858153e-07	0.4508484
[1327,]	0.4508477	0.4508488	0.4508484	1	-4.858153e-07	0.4508484
[1328,]	0.4508481	0.4508488	0.4508484	1	-4.858153e-07	0.4508484
[1329,]	0.4508477	-0.7878226	0.4508484	1	-3.143379e-08	0.4508484
[1330,]	0.4508481	0.4508489	0.4508484	1	-5.092657e-07	0.4508484
[1331,]	0.4508490	0.4508489	0.4508484	1	-5.092657e-07	0.4508484
[1332,]	0.4508473	-0.7878215	0.4508484	1	-1.130528e-06	0.4508484
[1333,]	0.4508481	0.4508474	0.4508484	1	9.626078e-07	0.4508484
[1334,]	0.4508471	-0.7878225	0.4508484	1	-1.760705e-07	0.4508484
[1335,]	0.4508471	-0.7878228	0.4508484	1	2.083336e-07	0.4508484
[1336,]	0.4508481	0.4508483	0.4508484	1	9.400112e-08	0.4508484
[1337,]	0.4508476	-0.7878227	0.4508484	1	4.560946e-08	0.4508484
[1338,]	0.4508478	-0.7878227	0.4508484	1	4.560946e-08	0.4508484
[1339,]	0.4508479	-0.7878227	0.4508484	1	4.560946e-08	0.4508484
[1340,]	0.4508486	0.4508476	0.4508484	1	7.872472e-07	0.4508484
[1341,]	0.4508485	0.4508476	0.4508484	1	7.872472e-07	0.4508484
[1342,]	0.4508484	0.4508476	0.4508484	1	7.872472e-07	0.4508484
[1343,]	0.4508481	0.4508477	0.4508484	1	6.895773e-07	0.4508484
[1344,]	0.4508490	0.4508476	0.4508484	1	7.872472e-07	0.4508484
[1345,]	0.4508486	-0.7878233	0.4508484	1	6.641675e-07	0.4508484
[1346,]	0.4508482	0.4508481	0.4508484	1	2.311335e-07	0.4508484
[1347,]	0.4508485	-0.7878227	0.4508484	1	5.527366e-08	0.4508484
[1348,]	0.4508486	-0.7878226	0.4508484	1	-4.007757e-08	0.4508484
[1349,]	0.4508494	-0.7878226	0.4508484	1	-4.007757e-08	0.4508484
[1350,]	0.4508483	-0.7878229	0.4508484	1	2.696661e-07	0.4508484
[1351,]	0.4508489	-0.7878228	0.4508484	1	1.437681e-07	0.4508484
[1352,]	0.4508476	0.4508481	0.4508484	1	2.709266e-07	0.4508484
[1353,]	0.4508482	-0.7878234	0.4508484	1	8.082169e-07	0.4508484
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[1355,]	0.4508477	-0.7878228	0.4508484	1	2.150622e-07	0.4508484
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[1358,]	0.4508485	0.4508477	0.4508484	1	6.069364e-07	0.4508484
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[1360,]	0.4508486	0.4508475	0.4508484	1	8.786763e-07	0.4508484
[1361,]	0.4508477	-0.7878231	0.4508484	1	4.486157e-07	0.4508484
[1362,]	0.4508479	-0.7878227	0.4508484	1	2.240903e-08	0.4508484
[1363,]	0.4508478	0.4508475	0.4508484	1	8.786763e-07	0.4508484
[1364,]	0.4508484	-2.0264932	0.4508484	1	-4.988926e-07	0.4508484
[1365,]	0.4508483	0.4508476	0.4508484	1	7.087855e-07	0.4508484
[1366,]	0.4508483	-0.7878232	0.4508484	1	5.619566e-07	0.4508484

[1367,]	0.4508484	-0.7878224	0.4508484	1	-2.081424e-07	0.4508484
[1368,]	0.4508482	0.4508489	0.4508484	1	-5.334305e-07	0.4508484
[1369,]	0.4508488	0.4508494	0.4508484	1	-1.027482e-06	0.4508484
[1370,]	0.4508482	-2.0264934	0.4508484	1	-2.219671e-07	0.4508484
[1371,]	0.4508482	-0.7878223	0.4508484	1	-3.776996e-07	0.4508484
[1372,]	0.4508482	0.4508508	0.4508484	1	-2.451077e-06	0.4508484
[1373,]	0.4508482	-0.7878223	0.4508484	1	-3.776996e-07	0.4508484
[1374,]	0.4508484	-0.7878218	0.4508484	1	-8.665434e-07	0.4508484
[1375,]	0.4508478	-3.2651653	0.4508484	1	6.228533e-07	0.4508484
[1376,]	0.4508485	-0.7878225	0.4508484	1	-1.251088e-07	0.4508484
[1377,]	0.4508485	-0.7878216	0.4508484	1	-1.072179e-06	0.4508484
[1378,]	0.4508477	0.4508488	0.4508484	1	-4.398264e-07	0.4508484
[1379,]	0.4508478	0.4508482	0.4508484	1	1.879059e-07	0.4508484
[1380,]	0.4508478	0.4508480	0.4508484	1	3.713099e-07	0.4508484
[1381,]	0.4508484	0.4508480	0.4508484	1	3.713099e-07	0.4508484
[1382,]	0.4508483	-0.7878220	0.4508484	1	-6.162494e-07	0.4508484
[1383,]	1.6895197	-0.7878229	1.6895193	1	2.914637e-07	1.6895193
[1384,]	1.6895185	-0.7878229	1.6895193	1	2.914637e-07	1.6895193
[1385,]	1.6895185	-0.7878222	1.6895193	1	-4.158004e-07	1.6895193
[1386,]	1.6895193	-0.7878217	1.6895193	1	-9.558182e-07	1.6895193
[1387,]	1.6895188	-0.7878226	1.6895193	1	-3.648443e-08	1.6895193
[1388,]	1.6895194	-0.7878226	1.6895193	1	-3.648443e-08	1.6895193
[1389,]	1.6895186	-0.7878214	1.6895193	1	-1.251973e-06	1.6895193
[1390,]	1.6895185	-0.7878229	1.6895193	1	2.766323e-07	1.6895193
[1391,]	1.6895197	0.4508480	1.6895193	1	3.617456e-07	1.6895193
[1392,]	1.6895195	-0.7878227	1.6895193	1	5.943822e-08	1.6895193
[1393,]	1.6895190	-0.7878219	1.6895193	1	-7.700717e-07	1.6895193
[1394,]	1.6895193	-0.7878229	1.6895193	1	2.335957e-07	1.6895193
[1395,]	1.6895197	-0.7878222	1.6895193	1	-3.873489e-07	1.6895193
[1396,]	1.6895191	0.4508483	1.6895193	1	6.908931e-08	1.6895193
[1397,]	1.6895200	-0.7878229	1.6895193	1	2.753853e-07	1.6895193
[1398,]	1.6895196	-0.7878225	1.6895193	1	-1.729297e-07	1.6895193
[1399,]	1.6895188	1.6895198	1.6895193	1	-4.798998e-07	1.6895193
[1400,]	1.6895188	0.4508482	1.6895193	1	1.429401e-07	1.6895193
[1401,]	1.6895187	-0.7878228	1.6895193	1	1.560104e-07	1.6895193
[1402,]	1.6895191	-0.7878228	1.6895193	1	1.560104e-07	1.6895193
[1403,]	1.6895191	0.4508480	1.6895193	1	3.798417e-07	1.6895193
[1404,]	1.6895189	2.9281912	1.6895193	1	-8.253068e-07	1.6895193
[1405,]	1.6895192	0.4508491	1.6895193	1	-7.851939e-07	1.6895193
[1406,]	1.6895193	1.6895191	1.6895193	1	2.185248e-07	1.6895193
[1407,]	1.6895196	0.4508480	1.6895193	1	3.541262e-07	1.6895193
[1408,]	1.6895201	0.4508485	1.6895193	1	-1.795771e-07	1.6895193
[1409,]	1.6895187	1.6895191	1.6895193	1	2.335886e-07	1.6895193
[1410,]	1.6895190	0.4508485	1.6895193	1	-1.795771e-07	1.6895193
[1411,]	1.6895187	0.4508489	1.6895193	1	-5.011174e-07	1.6895193

[1412,]	1.6895193	0.4508499	1.6895193	1	-1.510630e-06	1.6895193
[1413,]	1.6895195	0.4508480	1.6895193	1	3.541262e-07	1.6895193
[1414,]	1.6895190	-0.7878234	1.6895193	1	7.907345e-07	1.6895193
[1415,]	1.6895185	-0.7878220	1.6895193	1	-6.184922e-07	1.6895193
[1416,]	1.6895200	-0.7878226	1.6895193	1	-1.299324e-08	1.6895193
[1417,]	1.6895190	-0.7878220	1.6895193	1	-6.184922e-07	1.6895193
[1418,]	1.6895186	1.6895195	1.6895193	1	-1.904043e-07	1.6895193
[1419,]	1.6895182	-0.7878230	1.6895193	1	3.721425e-07	1.6895193
[1420,]	1.6895201	-0.7878227	1.6895193	1	7.267897e-08	1.6895193
[1421,]	1.6895194	-0.7878230	1.6895193	1	3.721425e-07	1.6895193
[1422,]	1.6895193	-0.7878236	1.6895193	1	9.242055e-07	1.6895193
[1423,]	1.6895169	0.4508480	1.6895193	1	3.653934e-07	1.6895193
[1424,]	1.6895169	-2.0264941	1.6895193	1	4.384346e-07	1.6895193
[1425,]	1.6895191	0.4508482	1.6895193	1	1.638657e-07	1.6895193
[1426,]	1.6895186	0.4508482	1.6895193	1	1.638657e-07	1.6895193
[1427,]	1.6895193	0.4508473	1.6895193	1	1.062837e-06	1.6895193
[1428,]	1.6895193	-0.7878226	1.6895193	1	-3.392808e-08	1.6895193
[1429,]	1.6895189	-0.7878234	1.6895193	1	8.049042e-07	1.6895193
[1430,]	1.6895193	-0.7878232	1.6895193	1	5.557774e-07	1.6895193
[1431,]	1.6895182	-0.7878232	1.6895193	1	5.618689e-07	1.6895193
[1432,]	1.6895196	0.4508483	1.6895193	1	1.429990e-08	1.6895193
[1433,]	1.6895200	0.4508478	1.6895193	1	5.704778e-07	1.6895193
[1434,]	1.6895185	1.6895197	1.6895193	1	-3.208902e-07	1.6895193
[1435,]	1.6895207	0.4508487	1.6895193	1	-3.242585e-07	1.6895193
[1436,]	1.6895185	0.4508487	1.6895193	1	-3.242585e-07	1.6895193
[1437,]	1.6895186	-0.7878239	1.6895193	1	1.249095e-06	1.6895193
[1438,]	1.6895197	-0.7878213	1.6895193	1	-1.290837e-06	1.6895193
[1439,]	1.6895191	-0.7878230	1.6895193	1	4.089250e-07	1.6895193
[1440,]	1.6895191	0.4508479	1.6895193	1	4.162515e-07	1.6895193
[1441,]	1.6895194	1.6895201	1.6895193	1	-7.229659e-07	1.6895193
[1442,]	1.6895192	0.4508491	1.6895193	1	-7.040803e-07	1.6895193
[1443,]	1.6895191	-0.7878224	1.6895193	1	-2.220277e-07	1.6895193
[1444,]	1.6895199	-0.7878222	1.6895193	1	-4.567839e-07	1.6895193
[1445,]	1.6895196	0.4508479	1.6895193	1	4.280491e-07	1.6895193
[1446,]	1.6895191	0.4508491	1.6895193	1	-7.076129e-07	1.6895193
[1447,]	1.6895198	-0.7878224	1.6895193	1	-2.220277e-07	1.6895193
[1448,]	1.6895191	-0.7878224	1.6895193	1	-2.442512e-07	1.6895193
[1449,]	1.6895195	-0.7878225	1.6895193	1	-9.858000e-08	1.6895193
[1450,]	1.6895191	2.9281911	1.6895193	1	-7.522634e-07	1.6895193
[1451,]	1.6895194	1.6895201	1.6895193	1	-7.229659e-07	1.6895193
[1452,]	1.6895194	1.6895200	1.6895193	1	-6.223520e-07	1.6895193
[1453,]	1.6895192	1.6895199	1.6895193	1	-5.554425e-07	1.6895193
[1454,]	1.6895191	-0.7878226	1.6895193	1	-5.616939e-09	1.6895193
[1455,]	1.6895185	0.4508485	1.6895193	1	-1.040564e-07	1.6895193
[1456,]	1.6895185	0.4508489	1.6895193	1	-5.729586e-07	1.6895193

[1457,]	1.6895198	0.4508491	1.6895193	1	-7.182944e-07	1.6895193
[1458,]	1.6895198	-0.7878226	1.6895193	1	-5.616939e-09	1.6895193
[1459,]	1.6895198	-0.7878233	1.6895193	1	6.964899e-07	1.6895193
[1460,]	1.6895187	1.6895190	1.6895193	1	3.408279e-07	1.6895193
[1461,]	1.6895200	0.4508480	1.6895193	1	3.899844e-07	1.6895193
[1462,]	1.6895192	-2.0264933	1.6895193	1	-3.300997e-07	1.6895193
[1463,]	1.6895193	0.4508487	1.6895193	1	-3.946227e-07	1.6895193
[1464,]	1.6895195	0.4508484	1.6895193	1	-9.538285e-08	1.6895193
[1465,]	1.6895203	-0.7878223	1.6895193	1	-3.484607e-07	1.6895193
[1466,]	1.6895204	-0.7878223	1.6895193	1	-3.484607e-07	1.6895193
[1467,]	1.6895203	1.6895205	1.6895193	1	-1.115810e-06	1.6895193
[1468,]	1.6895202	-2.0264931	1.6895193	1	-5.935641e-07	1.6895193
[1469,]	1.6895193	1.6895205	1.6895193	1	-1.115810e-06	1.6895193
[1470,]	1.6895187	-3.2651643	1.6895193	1	-3.456355e-07	1.6895193
[1471,]	1.6895190	-0.7878229	1.6895193	1	2.899354e-07	1.6895193
[1472,]	1.6895194	-0.7878223	1.6895193	1	-2.995066e-07	1.6895193
[1473,]	1.6895188	0.4508495	1.6895193	1	-1.181187e-06	1.6895193
[1474,]	1.6895198	-0.7878222	1.6895193	1	-4.713000e-07	1.6895193
[1475,]	1.6895194	-0.7878220	1.6895193	1	-6.031303e-07	1.6895193
[1476,]	1.6895199	1.6895192	1.6895193	1	1.511963e-07	1.6895193
[1477,]	1.6895192	-0.7878220	1.6895193	1	-6.031303e-07	1.6895193
[1478,]	1.6895187	1.6895192	1.6895193	1	1.615284e-07	1.6895193
[1479,]	1.6895191	-3.2651643	1.6895193	1	-3.429919e-07	1.6895193
[1480,]	1.6895190	-0.7878220	1.6895193	1	-6.454168e-07	1.6895193
[1481,]	1.6895189	-2.0264931	1.6895193	1	-5.132729e-07	1.6895193
[1482,]	1.6895198	-0.7878220	1.6895193	1	-6.454168e-07	1.6895193
[1483,]	1.6895201	-2.0264916	1.6895193	1	-2.099473e-06	1.6895193
[1484,]	1.6895193	-0.7878228	1.6895193	1	1.204290e-07	1.6895193
[1485,]	1.6895187	-2.0264934	1.6895193	1	-3.068665e-07	1.6895193
[1486,]	1.6895195	-0.7878220	1.6895193	1	-5.964918e-07	1.6895193
[1487,]	1.6895186	-0.7878216	1.6895193	1	-1.012033e-06	1.6895193
[1488,]	1.6895204	-0.7878220	1.6895193	1	-6.591283e-07	1.6895193
[1489,]	1.6895196	-0.7878227	1.6895193	1	5.828077e-08	1.6895193
[1490,]	1.6895192	0.4508492	1.6895193	1	-8.716655e-07	1.6895193
[1491,]	1.6895185	0.4508486	1.6895193	1	-2.823018e-07	1.6895193
[1492,]	1.6895196	-0.7878227	1.6895193	1	5.828077e-08	1.6895193
[1493,]	1.6895187	-0.7878225	1.6895193	1	-9.238406e-08	1.6895193
[1494,]	1.6895179	-0.7878231	1.6895193	1	4.675318e-07	1.6895193
[1495,]	1.6895191	1.6895190	1.6895193	1	3.703304e-07	1.6895193
[1496,]	1.6895188	0.4508478	1.6895193	1	5.568051e-07	1.6895193
[1497,]	1.6895189	-0.7878231	1.6895193	1	4.675318e-07	1.6895193
[1498,]	1.6895192	0.4508485	1.6895193	1	-1.894494e-07	1.6895193
[1499,]	1.6895197	0.4508491	1.6895193	1	-7.013660e-07	1.6895193
[1500,]	1.6895189	0.4508485	1.6895193	1	-1.894494e-07	1.6895193
[1501,]	1.6895187	-0.7878223	1.6895193	1	-3.803955e-07	1.6895193

[1502,]	1.6895190	-0.7878212	1.6895193	1	-1.434814e-06	1.6895193
[1503,]	1.6895194	-0.7878224	1.6895193	1	-2.522660e-07	1.6895193
[1504,]	1.6895200	0.4508498	1.6895193	1	-1.497226e-06	1.6895193
[1505,]	1.6895176	0.4508493	1.6895193	1	-9.713323e-07	1.6895193
[1506,]	1.6895208	-3.2651646	1.6895193	1	-9.418402e-08	1.6895193
[1507,]	1.6895186	0.4508488	1.6895193	1	-4.886181e-07	1.6895193
[1508,]	1.6895208	0.4508493	1.6895193	1	-9.713323e-07	1.6895193
[1509,]	1.6895210	0.4508498	1.6895193	1	-1.426976e-06	1.6895193
[1510,]	1.6895190	-0.7878227	1.6895193	1	7.488540e-08	1.6895193
[1511,]	1.6895191	0.4508484	1.6895193	1	-6.256254e-08	1.6895193
[1512,]	1.6895202	-0.7878223	1.6895193	1	-2.880923e-07	1.6895193
[1513,]	1.6895200	0.4508491	1.6895193	1	-7.311858e-07	1.6895193
[1514,]	1.6895193	0.4508492	1.6895193	1	-8.388676e-07	1.6895193
[1515,]	1.6895202	0.4508497	1.6895193	1	-1.303996e-06	1.6895193
[1516,]	1.6895204	0.4508497	1.6895193	1	-1.305495e-06	1.6895193
[1517,]	1.6895193	-0.7878228	1.6895193	1	1.559870e-07	1.6895193
[1518,]	1.6895197	0.4508489	1.6895193	1	-5.004315e-07	1.6895193
[1519,]	1.6895183	-0.7878216	1.6895193	1	-1.040396e-06	1.6895193
[1520,]	1.6895193	-0.7878221	1.6895193	1	-5.259563e-07	1.6895193
[1521,]	1.6895197	0.4508489	1.6895193	1	-5.004315e-07	1.6895193
[1522,]	1.6895193	-2.0264938	1.6895193	1	1.072255e-07	1.6895193
[1523,]	1.6895204	-0.7878228	1.6895193	1	1.559870e-07	1.6895193
[1524,]	1.6895194	-0.7878222	1.6895193	1	-4.192431e-07	1.6895193
[1525,]	1.6895204	0.4508489	1.6895193	1	-5.834279e-07	1.6895193
[1526,]	1.6895193	-0.7878227	1.6895193	1	4.177357e-08	1.6895193
[1527,]	1.6895178	0.4508484	1.6895193	1	-8.511389e-08	1.6895193
[1528,]	1.6895187	0.4508484	1.6895193	1	-5.313719e-08	1.6895193
[1529,]	1.6895191	0.4508487	1.6895193	1	-3.847055e-07	1.6895193
[1530,]	1.6895198	0.4508489	1.6895193	1	-5.859985e-07	1.6895193
[1531,]	1.6895204	0.4508481	1.6895193	1	2.400077e-07	1.6895193
[1532,]	1.6895187	-0.7878218	1.6895193	1	-8.390634e-07	1.6895193
[1533,]	1.6895191	0.4508491	1.6895193	1	-7.442438e-07	1.6895193
[1534,]	1.6895198	-0.7878234	1.6895193	1	7.409319e-07	1.6895193
[1535,]	1.6895192	1.6895200	1.6895193	1	-6.487471e-07	1.6895193
[1536,]	1.6895190	0.4508488	1.6895193	1	-4.070379e-07	1.6895193
[1537,]	1.6895197	0.4508487	1.6895193	1	-3.453650e-07	1.6895193
[1538,]	1.6895182	0.4508495	1.6895193	1	-1.130834e-06	1.6895193
[1539,]	1.6895205	-0.7878224	1.6895193	1	-2.578513e-07	1.6895193
[1540,]	1.6895184	-0.7878225	1.6895193	1	-1.775526e-07	1.6895193
[1541,]	1.6895200	0.4508480	1.6895193	1	3.987994e-07	1.6895193
[1542,]	1.6895199	1.6895187	1.6895193	1	6.274405e-07	1.6895193
[1543,]	1.6895183	0.4508493	1.6895193	1	-9.464452e-07	1.6895193
[1544,]	1.6895199	0.4508476	1.6895193	1	7.890404e-07	1.6895193
[1545,]	1.6895193	1.6895202	1.6895193	1	-8.171982e-07	1.6895193
[1546,]	1.6895190	0.4508504	1.6895193	1	-2.037319e-06	1.6895193

[1547,]	1.6895195	-0.7878228	1.6895193	1	1.315339e-07	1.6895193
[1548,]	1.6895195	-0.7878226	1.6895193	1	-7.377693e-08	1.6895193
[1549,]	1.6895205	-0.7878235	1.6895193	1	8.632089e-07	1.6895193
[1550,]	1.6895198	2.9281910	1.6895193	1	-6.086512e-07	1.6895193
[1551,]	1.6895197	-0.7878225	1.6895193	1	-1.402887e-07	1.6895193
[1552,]	1.6895187	-0.7878225	1.6895193	1	-9.434880e-08	1.6895193
[1553,]	1.6895201	0.4508485	1.6895193	1	-1.553579e-07	1.6895193
[1554,]	1.6895185	-0.7878226	1.6895193	1	-8.257115e-08	1.6895193
[1555,]	1.6895194	0.4508488	1.6895193	1	-4.570908e-07	1.6895193
[1556,]	1.6895191	1.6895200	1.6895193	1	-6.738119e-07	1.6895193
[1557,]	1.6895192	-0.7878220	1.6895193	1	-6.160279e-07	1.6895193
[1558,]	1.6895194	0.4508488	1.6895193	1	-4.570908e-07	1.6895193
[1559,]	1.6895192	-0.7878216	1.6895193	1	-1.071048e-06	1.6895193
[1560,]	1.6895189	-0.7878226	1.6895193	1	-7.475399e-08	1.6895193
[1561,]	1.6895198	-0.7878226	1.6895193	1	-7.475399e-08	1.6895193
[1562,]	1.6895190	-0.7878226	1.6895193	1	-7.475399e-08	1.6895193
[1563,]	1.6895201	-0.7878219	1.6895193	1	-7.547170e-07	1.6895193
[1564,]	1.6895196	-0.7878219	1.6895193	1	-7.547170e-07	1.6895193
[1565,]	1.6895194	-0.7878219	1.6895193	1	-7.547170e-07	1.6895193
[1566,]	1.6895188	0.4508488	1.6895193	1	-4.515762e-07	1.6895193
[1567,]	1.6895198	0.4508497	1.6895193	1	-1.315931e-06	1.6895193
[1568,]	1.6895190	-0.7878219	1.6895193	1	-7.547170e-07	1.6895193
[1569,]	1.6895196	-0.7878225	1.6895193	1	-1.777035e-07	1.6895193
[1570,]	1.6895201	0.4508486	1.6895193	1	-2.050070e-07	1.6895193
[1571,]	1.6895196	0.4508493	1.6895193	1	-9.048964e-07	1.6895193
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Midterm WineQuality

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[1477, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1478, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1479, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1480, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1481, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1482, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1483, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1484, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1485, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1486, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1487, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1488, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1489, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1490, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1491, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1492, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1493, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1494, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1495, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1496, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1497, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1498, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1499, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1500, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1501, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1502, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1503, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1504, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1505, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1506, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1507, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1508, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1509, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1510, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1511, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1512, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1513, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1514, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1515, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1516, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1517, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1518, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1519, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1520, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1521, ]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418

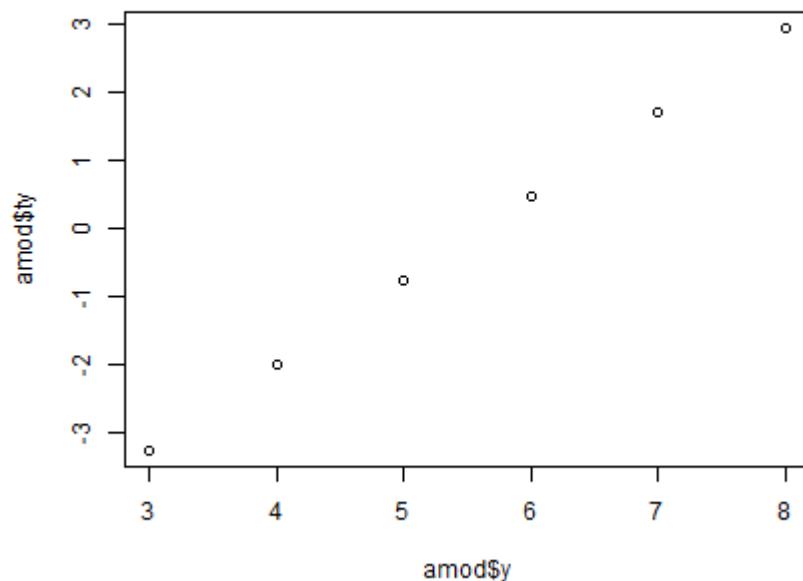
[1522,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1523,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1524,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1525,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1526,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1527,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1528,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1529,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1530,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1531,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1532,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1533,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1534,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1535,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1536,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1537,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1538,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1539,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1540,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1541,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1542,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1543,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1544,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1545,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1546,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1547,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1548,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1549,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1550,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1551,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1552,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1553,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1554,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1555,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1556,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1557,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1558,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1559,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1560,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1561,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1562,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1563,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1564,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1565,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1566,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418

[1567,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1568,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1569,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1570,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1571,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1572,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1573,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1574,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1575,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1576,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1577,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1578,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1579,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1580,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1581,]	0.4474274	1.6895193	1.6895193	1.6895194	4.968763e-07	0.4528418
[1582,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1583,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1584,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1585,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1586,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1587,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1588,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1589,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1590,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1591,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1592,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1593,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1594,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1595,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1596,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1597,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1598,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664
[1599,]	0.4363426	2.9281905	2.9281904	2.9281904	5.382971e-07	0.3973664

In [36]:

```
# Plots
# View the response transformation

R"plot(amod$y, amod$ty)"
```



```
Out[36]: RObject{NilSxp}  
NULL
```

```
In [37]: @rget amod
```

```
Out[37]: OrderedCollections.OrderedDict{Symbol, Any} with 14 entries:  
:p      => 12  
:n      => 1599  
:x      => [7.4 7.8 ... 5.9 6.0; 0.7 0.88 ... 0.645 0.31; ... ; 9.4 9.8 ... 10.2 11.0...  
:y      => [5.0, 5.0, 5.0, 6.0, 5.0, 5.0, 5.0, 7.0, 7.0, 5.0 ... 5.0, 6.0, 6....  
:w      => [1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0 ... 1.0, 1.0, 1....  
:l      => [1, 1, 1, 1, 1, 1, 1, 1, 1, 1]  
:delrsq => 0.01  
:ns      => 1  
:tx      => [5.26066e-7 6.7667e-7 ... 2.19415e-7 -0.787823; 3.33954e-7 9.81054e-...  
:ty      => [-0.787823, -0.787823, -0.787823, 0.450848, -0.787823, -0.787823, ...  
:rsq     => 1.0  
:ierr    => 0  
:m      => [46, 96, 822, 1271, 1322, 554, 589, 95, 1115, 1229 ... 496, 499, 1...  
:z      => [-3.26516 -0.787823 ... 5.94133e-7 0.497619; -3.26516 -0.787822 ... 5....
```

## R2 value

```
In [38]: amod[:rsq]
```

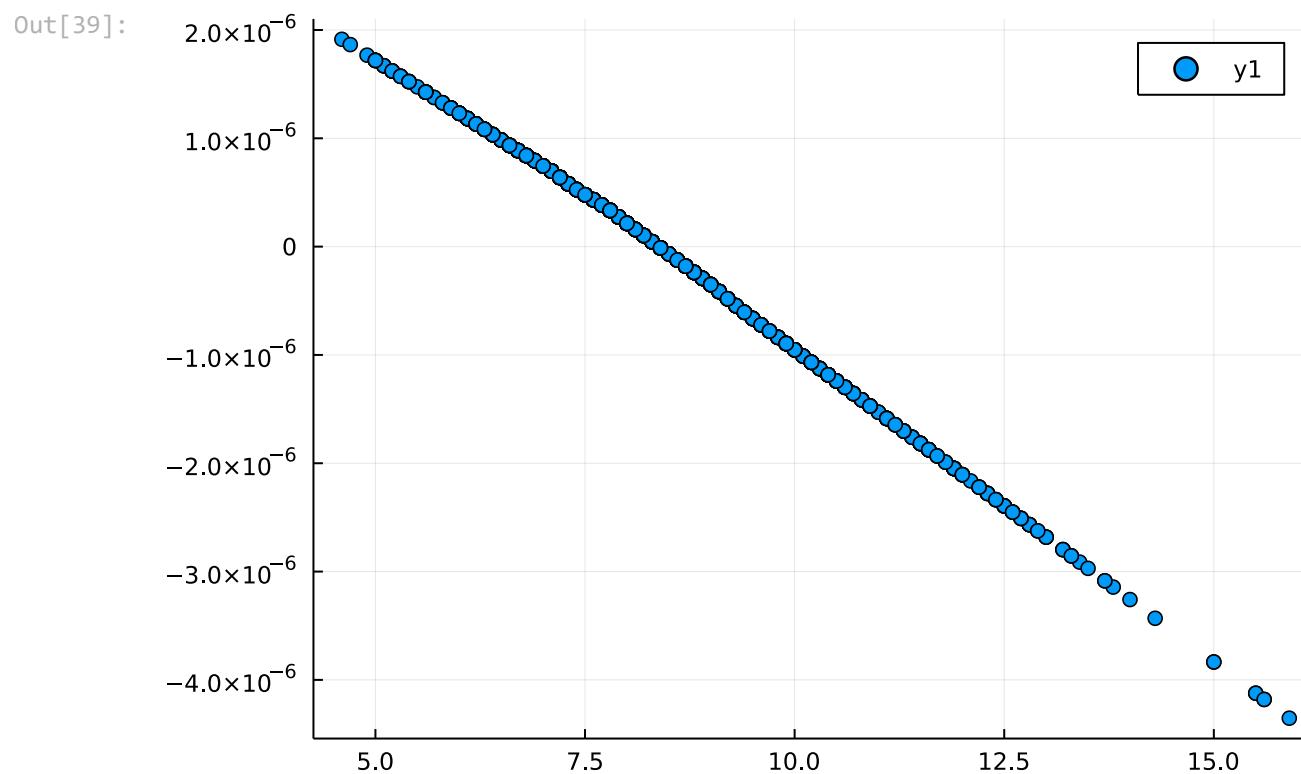
```
Out[38]: 0.9999999999996084
```

There observed the improvement of the R2 value

## Checking the Transformations

```
In [39]: # fixed_acidity
```

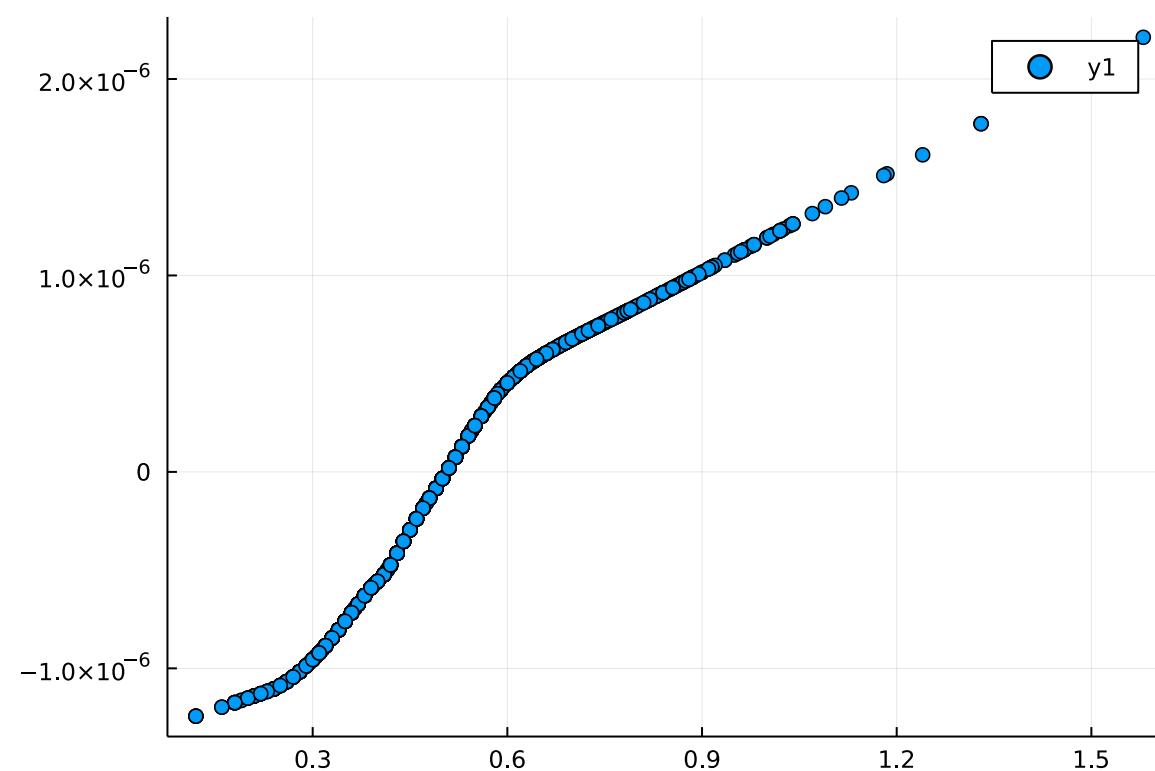
```
scatter(amod[:x][1,:], amod[:tx][:,1])
```



```
In [40]: # volatile_acidity
```

```
scatter(amod[:x][2,:], amod[:tx][:,2])
```

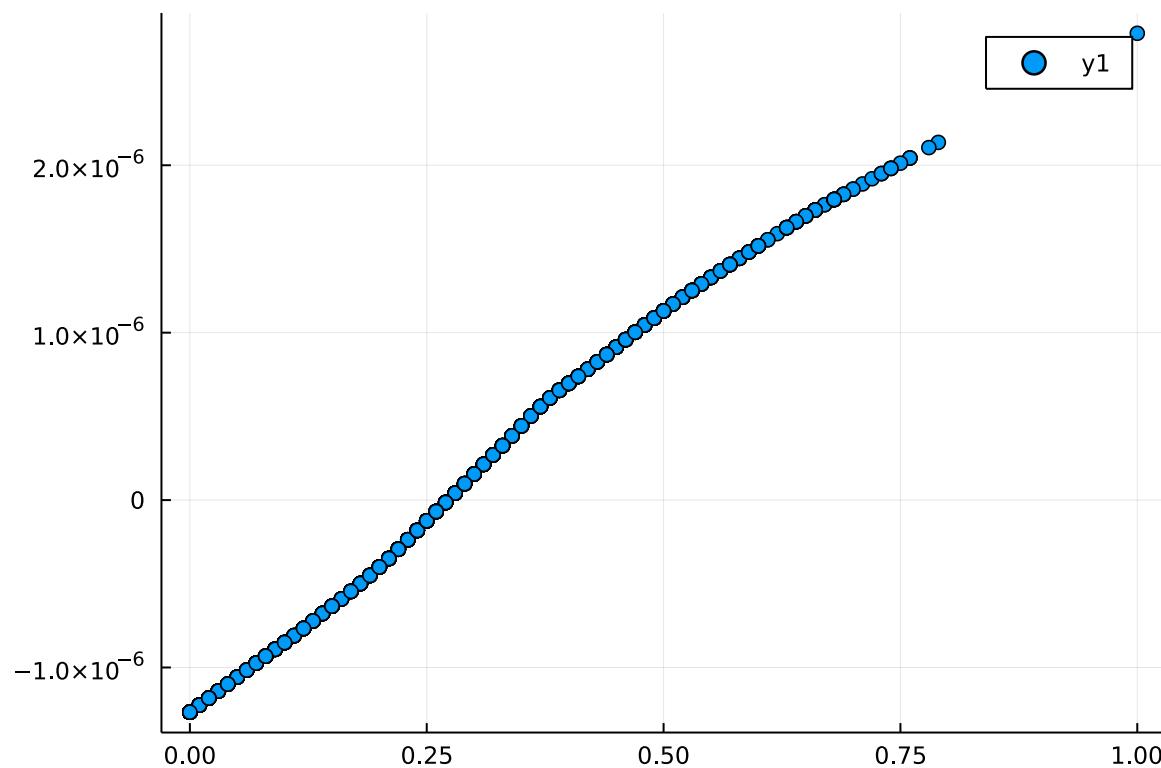
Out[40]:



In [41]:

```
# citric_acid  
scatter(amod[:x][3,:], amod[:tx][:,3])
```

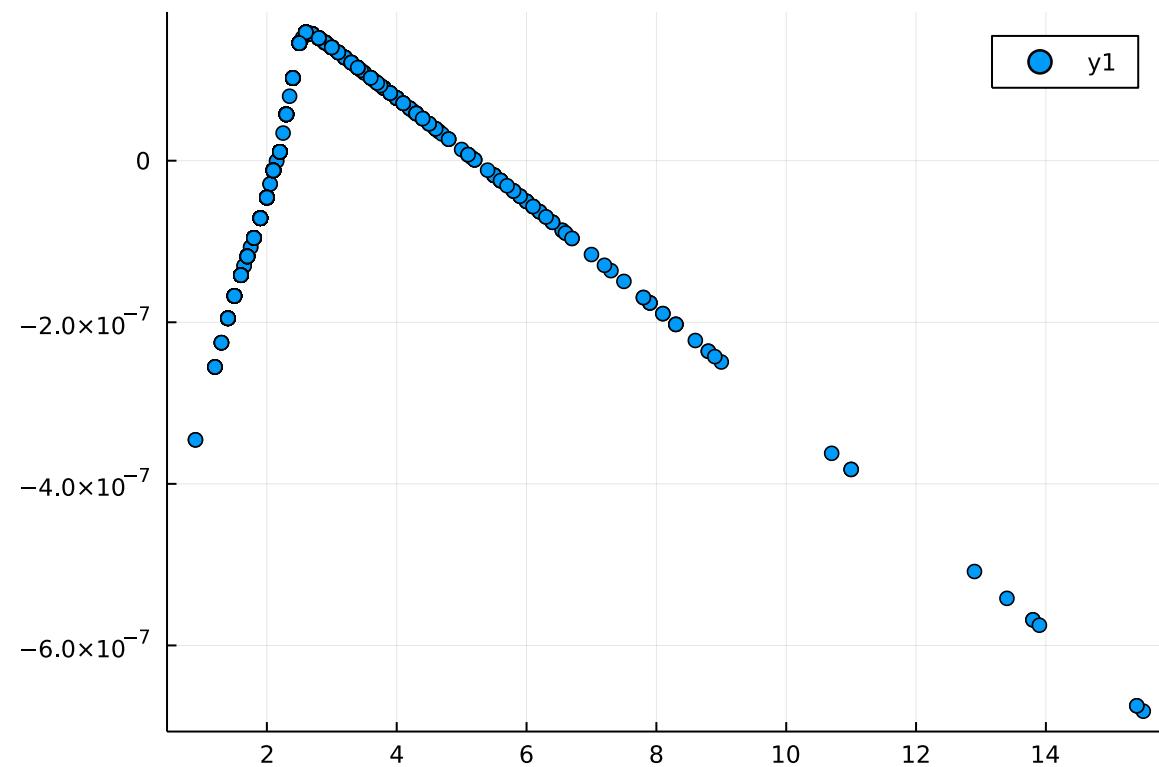
Out[41]:



In [42]:

```
# residual_sugar  
scatter(amod[:x][4,:], amod[:tx][:,4])
```

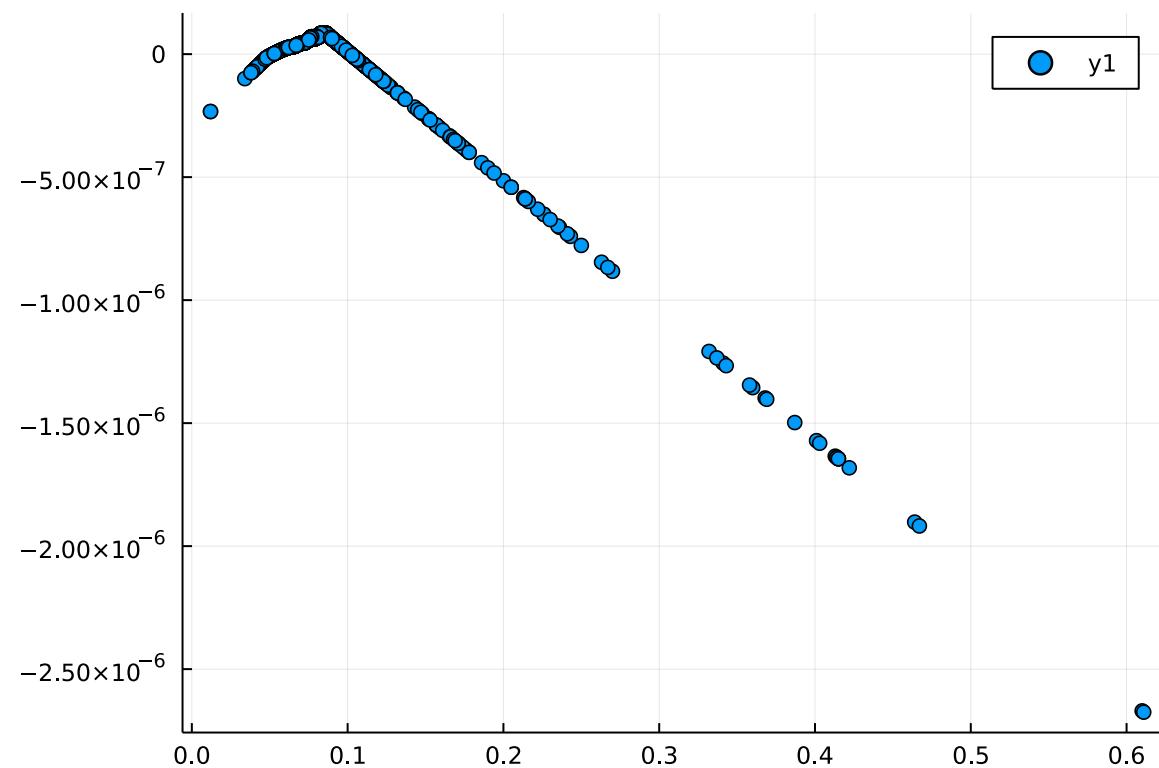
Out[42]:



In [43]:

```
# chlorides  
scatter(amod[:x][5,:], amod[:tx][:,5])
```

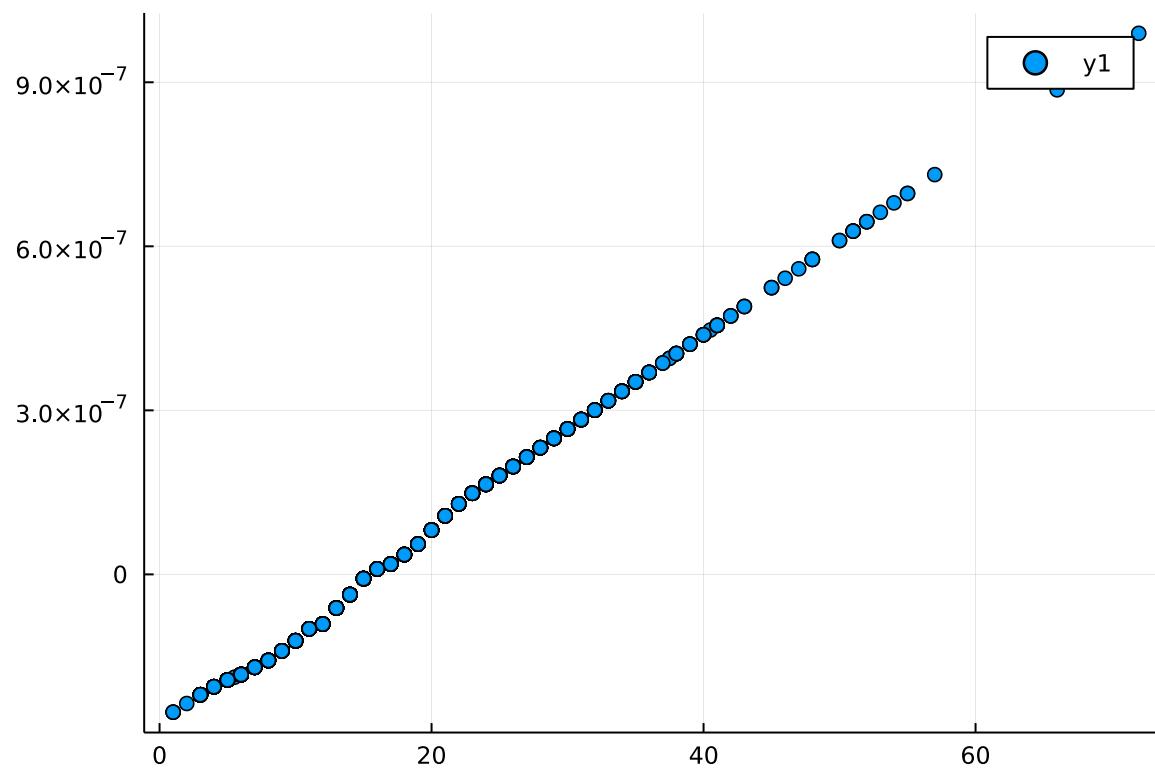
Out[43]:



In [44]:

```
# free_sulfur_dioxide  
scatter(amod[:x][6,:], amod[:tx][:,6])
```

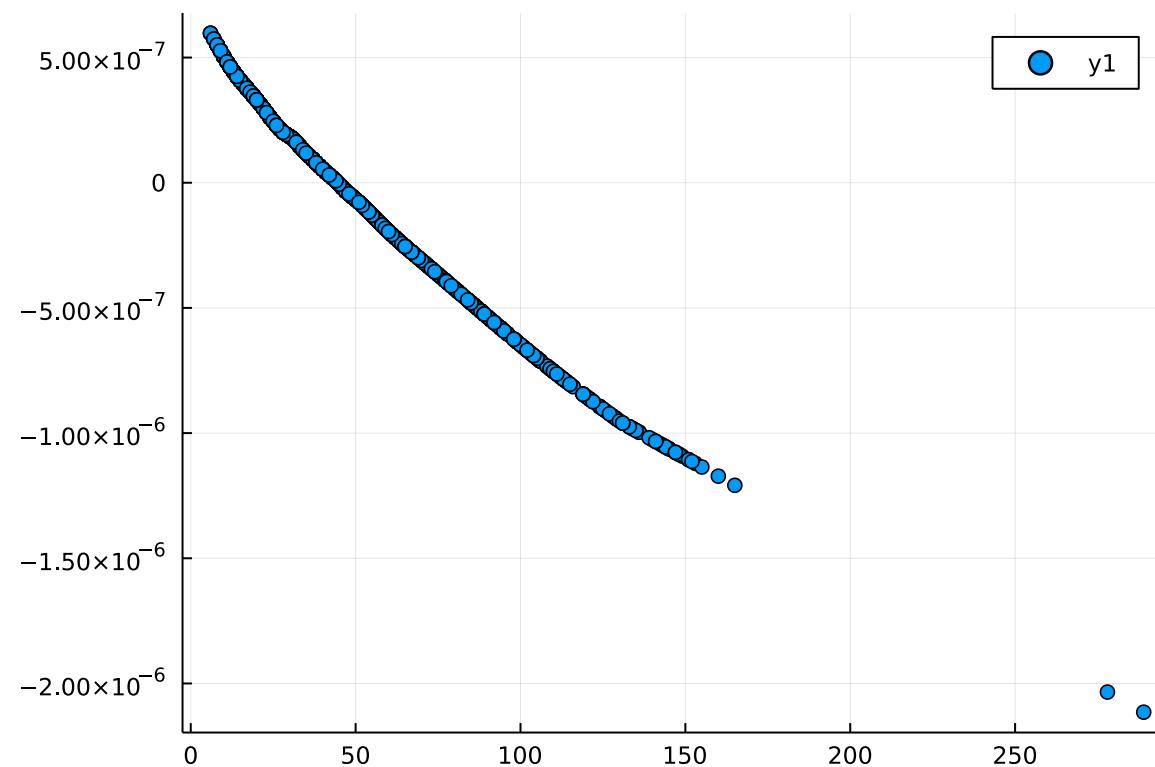
Out[44]:



In [45]:

```
# total_sulfur_dioxide  
scatter(amod[:x][7,:], amod[:tx][:,7])
```

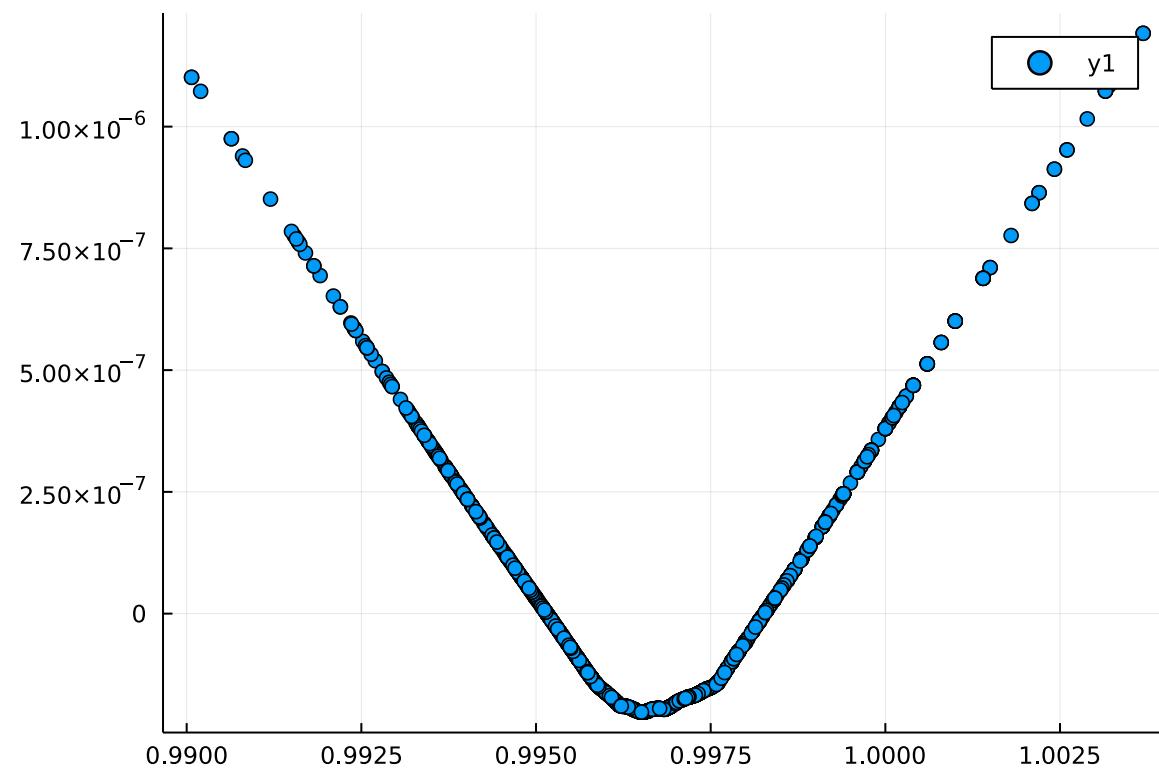
Out[45]:



In [46]:

```
# density  
scatter(amod[:x][8,:], amod[:tx][:,8])
```

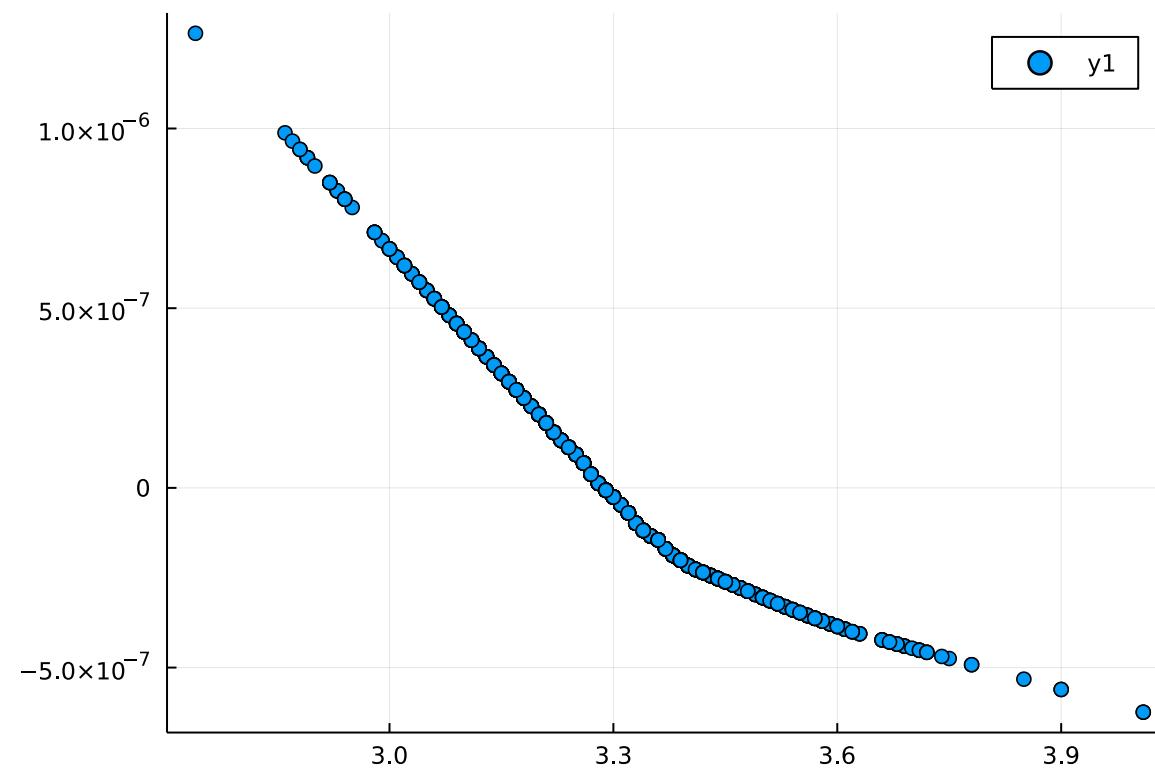
Out[46]:



In [47]:

```
# PH  
scatter(amod[:x][9,:], amod[:tx][:,9])
```

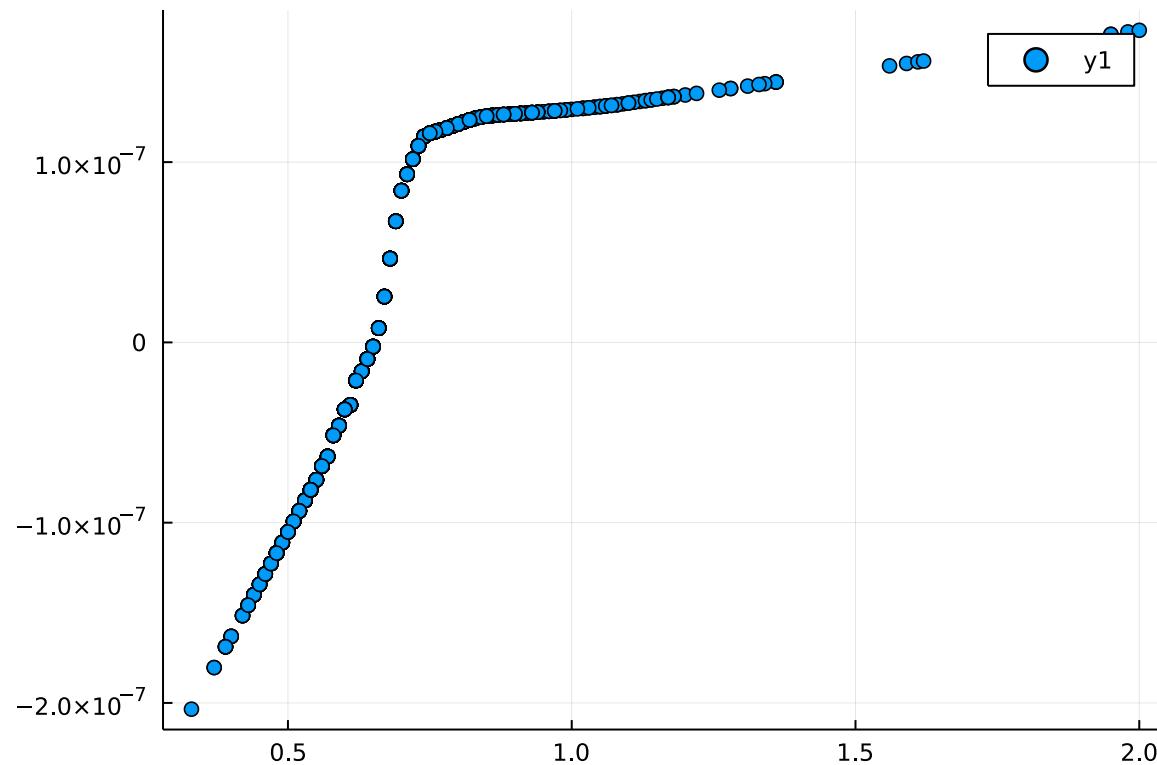
Out[47]:



In [48]:

```
# sulphates  
scatter(amod[:x][10,:], amod[:tx][:,10])
```

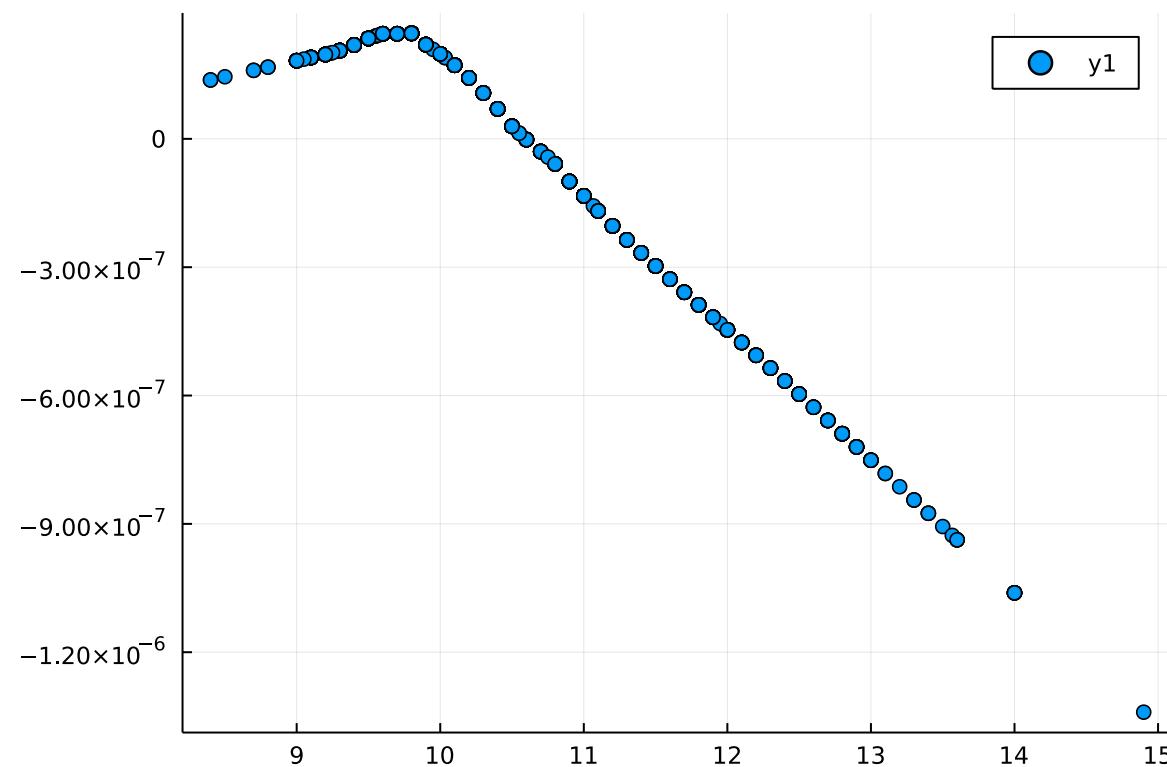
Out[48]:



In [49]:

```
# alcohol  
scatter(amod[:x][11,:], amod[:tx][:,11])
```

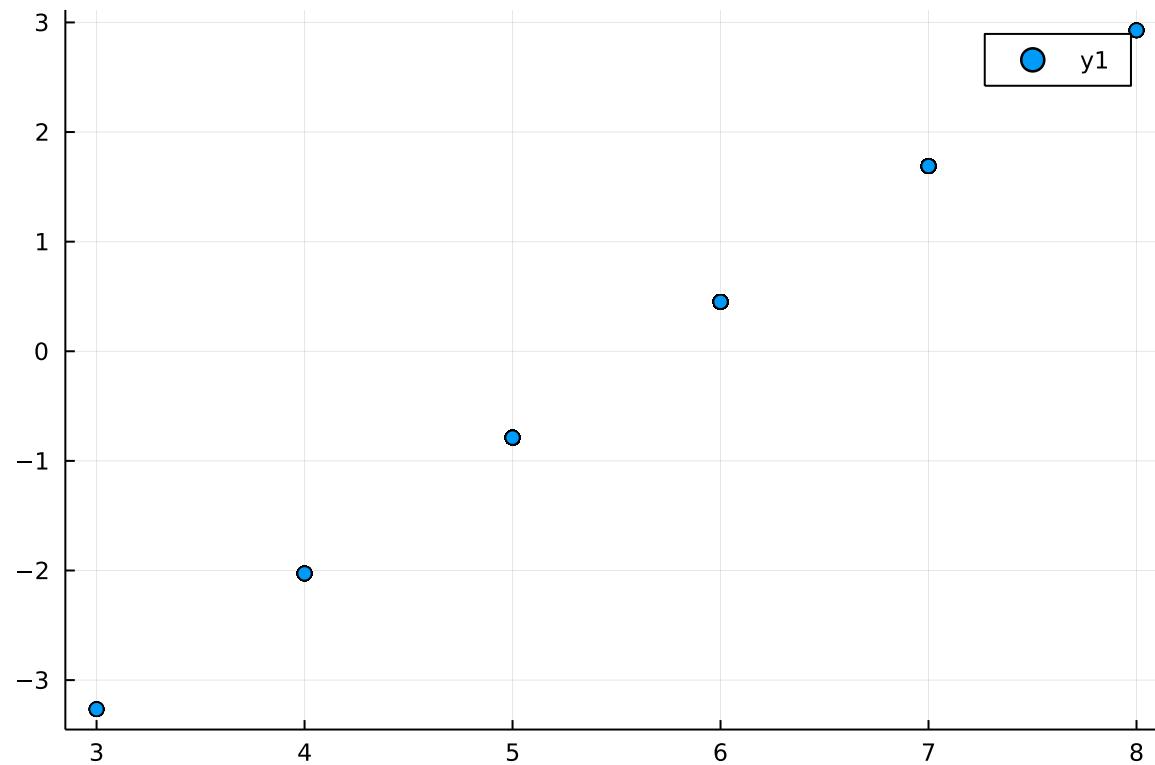
Out[49]:



In [50]:

```
# quality  
scatter(amod[:x][12,:], amod[:tx][:,12])
```

Out[50]:



In [ ]: