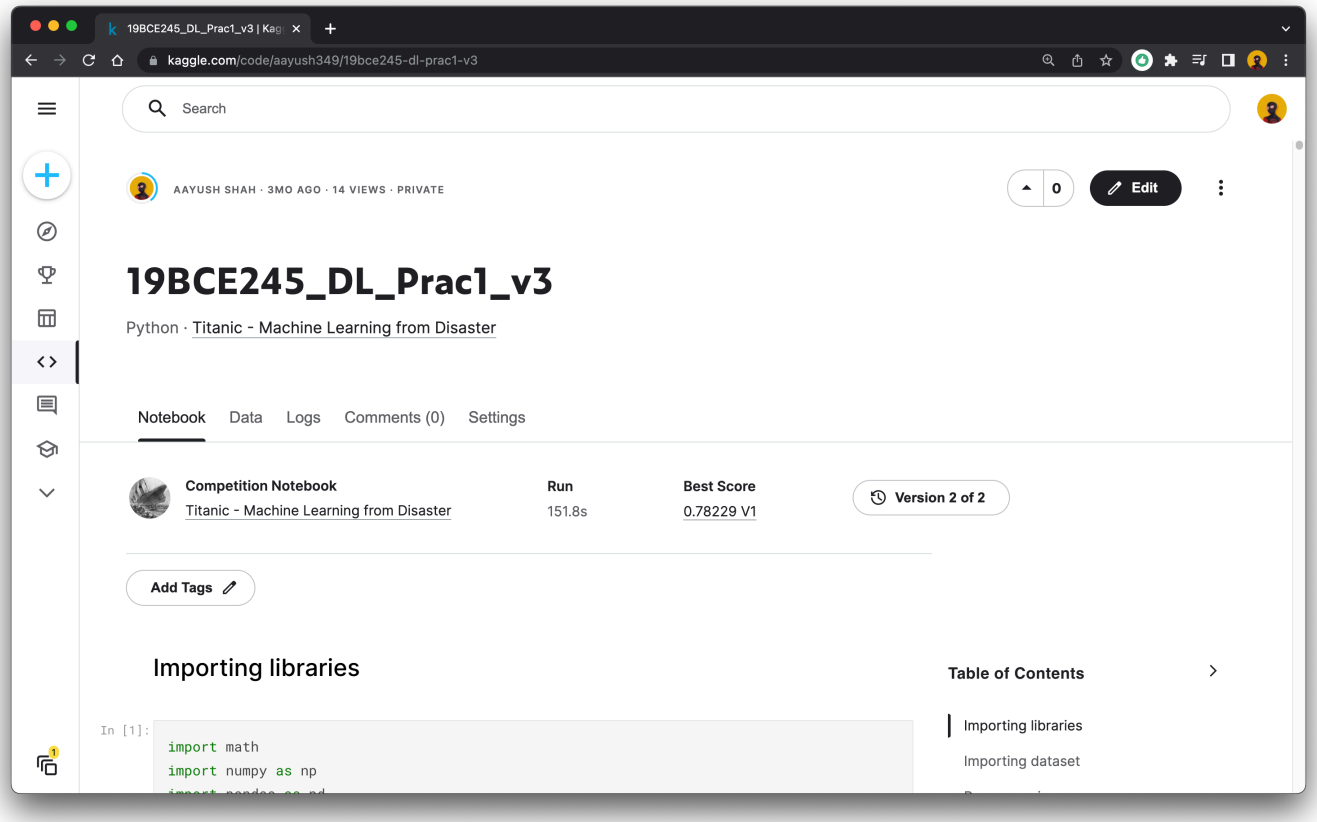
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Importing libraries
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Importing libraries
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In [1]:
import math
import numpy as np

Importing libraries

In [1]:

```
import math
import numpy as np
import pandas as pd
import seaborn as sns
import statistics as stats
import matplotlib.pyplot as plt
import tensorflow as tf
```

Importing dataset

In [2]:

```
train_dataset = pd.read_csv('../input/titanic/train.csv')
# train_dataset = pd.read_csv('train.csv')
# print('for TRAINING SET : \n',train_dataset)
train_dataset.head(10)
```

Out[2]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S
5	6	0	3	Moran, Mr. James	male	NaN	0	0	330877	8.4583	NaN	Q
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46	S
7	8	0	3	Palsson, Master. Gosta Leonard	male	2.0	3	1	349909	21.0750	NaN	S
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27.0	0	2	347742	11.1333	NaN	S
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14.0	1	0	237736	30.0708	NaN	C

In [3]:

```
# test_dataset = pd.read_csv('test.csv')
# test_dataset = pd.read_csv('../input/titanic/test.csv')
# print('for TESTING SET : \n',test_dataset)

# test_dataset = pd.concat(map(pd.read_csv, ['gender_submission.csv', 'test.csv']), ignore_index=True)

test_dataset_X = pd.read_csv('../input/titanic/test.csv')
test_dataset_y = pd.read_csv('../input/titanic/gender_submission.csv')
test_dataset = pd.merge(test_dataset_y,test_dataset_X, on='PassengerId', how='inner')
test_dataset.head(10)
```

```
# print(len(test_dataset.values))
```

Out[3]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	892	0	3	Kelly, Mr. James	male	34.5	0	0	330911	7.8292	NaN	Q
1	893	1	3	Wilkes, Mrs. James (Ellen Needs)	female	47.0	1	0	363272	7.0000	NaN	S
2	894	0	2	Myles, Mr. Thomas Francis	male	62.0	0	0	240276	9.6875	NaN	Q
3	895	0	3	Wirz, Mr. Albert	male	27.0	0	0	315154	8.6625	NaN	S
4	896	1	3	Hirvonen, Mrs. Alexander (Helga E Lindqvist)	female	22.0	1	1	3101298	12.2875	NaN	S
5	897	0	3	Svensson, Mr. Johan Cervin	male	14.0	0	0	7538	9.2250	NaN	S
6	898	1	3	Connolly, Miss. Kate	female	30.0	0	0	330972	7.6292	NaN	Q
7	899	0	2	Caldwell, Mr. Albert Francis	male	26.0	1	1	248738	29.0000	NaN	S
8	900	1	3	Abrahim, Mrs. Joseph (Sophie Halaut Easu)	female	18.0	0	0	2657	7.2292	NaN	C
9	901	0	3	Davies, Mr. John Samuel	male	21.0	2	0	A/4 48871	24.1500	NaN	S

Preprocessing

In [4]:

```
# # Checking `null` values in dataset ; finding null values in columns
print('for TRAINING SET : \n',train_dataset.isnull().sum())
print('\nfor TESTING SET : \n',test_dataset.isnull().sum())
```

```
for TRAINING SET :
 PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age            177
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          687
Embarked         2
dtype: int64

for TESTING SET :
 PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age             86
SibSp            0
Parch            0
Ticket           0
Fare             1
Cabin          327
Embarked         0
dtype: int64
```

> **Missing values found :**
>
> - **training set : age, embarked**
> - **testing set : age, cabin**

Filling missing values

- `Age` :

In [5]:

```
train_dataset['Age'].fillna(train_dataset['Age'].mean(), inplace=True)
print('for TRAINING SET : \n',train_dataset.isnull().sum())
test_dataset['Age'].fillna(train_dataset['Age'].mean(), inplace=True)
print('for TRAINING SET : \n',test_dataset.isnull().sum())
```

```
for TRAINING SET :
 PassengerId      0
Survived          0
Pclass            0
Name              0
Sex               0
Age               0
SibSp             0
Parch             0
Ticket            0
Fare              0
Cabin           687
Embarked          2
dtype: int64
for TRAINING SET :
 PassengerId      0
Survived          0
Pclass            0
Name              0
Sex               0
Age               0
SibSp             0
Parch             0
Ticket            0
Fare              1
Cabin           327
Embarked          0
dtype: int64
```

- `Embarked` :

In [6]:

```
train_dataset['Embarked'].fillna(train_dataset['Embarked'].mode()[0], inplace=True)
print('for TRAINING SET : \n',train_dataset.isnull().sum())
```

```
for TRAINING SET :
 PassengerId      0
Survived          0
Pclass            0
Name              0
Sex               0
Age               0
SibSp             0
Parch             0
Ticket            0
Fare              0
Cabin           687
Embarked          0
dtype: int64
```

- `Fare` :

In [7]:

```
test_dataset['Fare'].fillna(train_dataset['Fare'].mean(), inplace=True)
print('for TRAINING SET : \n',test_dataset.isnull().sum())
```

```
for TRAINING SET :
 PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age              0
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          327
Embarked         0
dtype: int64
```

> **considering only :** `PClass` , `Sex` , `Age` , `SibSp` , `Parch` , `Fare` , `Embarked`

In [8]:

```
X_train = train_dataset.iloc[:,[2,4,5,6,7,9,11]].values
# X_train = train_dataset.iloc[:,[2,4,5,6,7,9,11]]
X_test = test_dataset.iloc[:,[2,4,5,6,7,9,11]].values
# X_test = test_dataset.iloc[:,[1,3,4,5,6,8,10]]
y_train = train_dataset.iloc[:,1].values
# y = train_dataset.iloc[:,1]
y_test = test_dataset.iloc[:,1].values
```

In [9]:

```
X_train
```

Out[9]:

```
array([[3, 'male', 22.0, ..., 0, 7.25, 'S'],
       [1, 'female', 38.0, ..., 0, 71.2833, 'C'],
       [3, 'female', 26.0, ..., 0, 7.925, 'S'],
       ...,
       [3, 'female', 29.69911764705882, ..., 2, 23.45, 'S'],
       [1, 'male', 26.0, ..., 0, 30.0, 'C'],
       [3, 'male', 32.0, ..., 0, 7.75, 'Q']], dtype=object)
```

In [10]:

```
X_test
```

Out[10]:

```
array([[3, 'male', 34.5, ..., 0, 7.8292, 'Q'],
       [3, 'female', 47.0, ..., 0, 7.0, 'S'],
       [2, 'male', 62.0, ..., 0, 9.6875, 'Q'],
       ...,
       [3, 'male', 38.5, ..., 0, 7.25, 'S'],
       [3, 'male', 29.699117647058763, ..., 0, 8.05, 'S'],
       [3, 'male', 29.699117647058763, ..., 1, 22.3583, 'C']],
      dtype=object)
```

In [11]:

```
y_train
```

Out[11]:

```
array([0, 1, 1, 1, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1,
       1, 1, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1,
       1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 1,
       1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 1, 1, 0, 1, 1, 0, 0,
       1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1,
       0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0,
       0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0,
       0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0,
       1, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1, 1, 0, 1, 0,
       1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 1,
       0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0,
       0, 0, 0, 1, 1, 1, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0,
       1, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 1, 1,
       0, 1, 1, 1, 0, 0, 0, 1, 1, 0, 1, 1, 0, 0, 1, 1, 0, 1, 0, 1, 1, 1,
       1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0,
       0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 0,
       0, 1, 1, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0,
       0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1,
       0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 1, 1, 1, 0, 0, 1, 0, 1, 0, 0,
       1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0, 1,
       0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0,
       0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 1, 0,
       1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 0, 0, 1,
       0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0,
       0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0,
       0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 0, 1,
       0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 1,
       1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 1, 0, 0, 1, 1, 0, 0, 0, 1,
       1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0])
```

In [12]:

```
y_test
```

Out[12]:

```
array([0, 1, 0, 0, 1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 0, 1, 1, 0, 0,
       1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1,
       1, 0, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1,
       1, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1,
       1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0,
       0, 1, 1, 1, 1, 0, 0, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0,
       1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1,
       0, 0, 1, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1,
       1, 0, 1, 1, 0, 0, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1,
       0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0,
       1, 0, 1, 0, 1, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1,
       0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1,
       0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 1, 1, 0,
       0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
       0, 1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0,
       1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0,
       0, 0, 1, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 1, 1, 0, 0, 1, 0, 0,
       1, 1, 1, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
       0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0, 0])
```

In [13]:

```
# before encoding :
```

```
print(X_train[0])
print(y_train[0])
print(X_test[0])
print(y_test[0])
```

```
[3 'male' 22.0 1 0 7.25 'S']
0
[3 'male' 34.5 0 0 7.8292 'Q']
0
```

Encoding categorical data

- **encoding** `gender` **:**

In [14]:

```
from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
X_train[:, 1] = le.fit_transform(X_train[:, 1])
X_test[:, 1] = le.fit_transform(X_test[:, 1])
```

In [15]:

```
# after encoding gender :
print(X_train[0])
print(y_train[0])
print(X_test[0])
print(y_test[0])
```

```
[3 1 22.0 1 0 7.25 'S']
0
[3 1 34.5 0 0 7.8292 'Q']
0
```

- **encoding** `Embarked`

In [16]:

```
from sklearn.preprocessing import OneHotEncoder
from sklearn.compose import ColumnTransformer

ct = ColumnTransformer(transformers=[('encoder', OneHotEncoder(), [6])], remainder='pass
through')
X_train = np.array(ct.fit_transform(X_train))
X_test = np.array(ct.fit_transform(X_test))
```

In [17]:

```
# after encoding embarked :
print(X_train[0])
print(y_train[0])
print(X_test[0])
print(y_test[0])
```

```
[0.0 0.0 1.0 3 1 22.0 1 0 7.25]
0
[0.0 1.0 0.0 3 1 34.5 0 0 7.8292]
0
```

Feature Scaling

In [18]:

```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
```

```
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)    # only transforming to avoid Information Leakage
```

Building the ANN

1. Initializing ANN

In [19]:

```
ann = tf.keras.models.Sequential()
```

```
User settings:

   KMP_AFFINITY=granularity=fine,noverbose,compact,1,0
   KMP_BLOCKTIME=0
   KMP_DUPLICATE_LIB_OK=True
   KMP_INIT_AT_FORK=FALSE
   KMP_SETTINGS=1
   KMP_WARNINGS=0

Effective settings:

   KMP_ABORT_DELAY=0
   KMP_ADAPTIVE_LOCK_PROPS='1,1024'
   KMP_ALIGN_ALLOC=64
   KMP_ALL_THREADPRIVATE=128
   KMP_ATOMIC_MODE=2
   KMP_BLOCKTIME=0
   KMP_CPUINFO_FILE: value is not defined
   KMP_DETERMINISTIC_REDUCTION=false
   KMP_DEVICE_THREAD_LIMIT=2147483647
   KMP_DISP_NUM_BUFFERS=7
   KMP_DUPLICATE_LIB_OK=true
   KMP_ENABLE_TASK_THROTTLING=true
   KMP_FORCE_REDUCTION: value is not defined
   KMP_FOREIGN_THREADS_THREADPRIVATE=true
   KMP_FORKJOIN_BARRIER='2,2'
   KMP_FORKJOIN_BARRIER_PATTERN='hyper,hyper'
   KMP_GTID_MODE=3
   KMP_HANDLE_SIGNALS=false
   KMP_HOT_TEAMS_MAX_LEVEL=1
   KMP_HOT_TEAMS_MODE=0
   KMP_INIT_AT_FORK=true
   KMP_LIBRARY=throughput
   KMP_LOCK_KIND=queuing
   KMP_MALLOC_POOL_INCR=1M
   KMP_NUM_LOCKS_IN_BLOCK=1
   KMP_PLAIN_BARRIER='2,2'
   KMP_PLAIN_BARRIER_PATTERN='hyper,hyper'
   KMP_REDUCTION_BARRIER='1,1'
   KMP_REDUCTION_BARRIER_PATTERN='hyper,hyper'
   KMP_SCHEDULE='static,balanced;guided,iterative'
   KMP_SETTINGS=true
   KMP_SPIN_BACKOFF_PARAMS='4096,100'
   KMP_STACKOFFSET=64
   KMP_STACKPAD=0
   KMP_STACKSIZE=8M
   KMP_STORAGE_MAP=false
   KMP_TASKING=2
   KMP_TASKLOOP_MIN_TASKS=0
   KMP_TASK_STEALING_CONSTRAINT=1
   KMP_TEAMS_THREAD_LIMIT=4
   KMP_TOPOLOGY_METHOD=all
   KMP_USE_YIELD=1
   KMP_VERSION=false
   KMP_WARNINGS=false
   OMP_AFFINITY_FORMAT='OMP: pid %P tid %i thread %n bound to OS proc set {%A}'
   OMP_ALLOCATOR=omp_default_mem_alloc
   OMP_CANCELLATION=false
```

```
   OMP_CANCELLATION=false
   OMP_DEFAULT_DEVICE=0
   OMP_DISPLAY_AFFINITY=false
   OMP_DISPLAY_ENV=false
   OMP_DYNAMIC=false
   OMP_MAX_ACTIVE_LEVELS=1
   OMP_MAX_TASK_PRIORITY=0
   OMP_NESTED: deprecated; max-active-levels-var=1
   OMP_NUM_THREADS: value is not defined
   OMP_PLACES: value is not defined
   OMP_PROC_BIND='intel'
   OMP_SCHEDULE='static'
   OMP_STACKSIZE=8M
   OMP_TARGET_OFFLOAD=DEFAULT
   OMP_THREAD_LIMIT=2147483647
   OMP_WAIT_POLICY=PASSIVE
   KMP_AFFINITY='noverbose,warnings,respect,granularity=fine,compact,1,0'

2022-02-02 19:07:04.901587: I tensorflow/core/common_runtime/process_util.cc:146] Creatin
g new thread pool with default inter op setting: 2. Tune using inter_op_parallelism_threa
ds for best performance.
```

2. Adding theinputlayer and the first hidden layer

- `units` **: number of neurons in the layer**
- `relu` **: rectifier linear unit**

In [20]:

```
ann.add(tf.keras.layers.Dense(units=6, activation='relu'))
```

3. Adding the second hidden layer

In [21]:

```
ann.add(tf.keras.layers.Dense(units=6, activation='relu'))
```

4. Adding the output layer

- **as dimension of the output is 1** ***(whether person is survived or not)***
- **choosing sigmoid activation as we have binary classification**

In [22]:

```
ann.add(tf.keras.layers.Dense(units=1, activation='sigmoid'))
```

Training the ANN

1. compiling the ANN

- **here we are Updating weights and reducing cost.**
- `optimizer` **: gradient descent method. Here we are choosing adam as one of the method.**
- `loss` **: as we are doing binary classification, we'll use binary_crossentropy which will apply CROSS ENTROPY eq. For non-binary classification use categorical_crossentropy as loss function and softmax as activation function above.**
- `metrics` **: choosing accuracy. although we can also choose multiple metrices.**

In [23]:

```
ann.compile(optimizer='adam', loss='binary_crossentropy', metrics=['accuracy'])
```

2. Training the ANN on the training set

In [24]:

```
ann.fit(X_train, y_train, batch_size=32, epochs=100)
```

```
2022-02-02 19:07:07.086352: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:185] None of the MLIR Optimization Passes are enabled (registered 2)
```

```
Epoch 1/100
28/28 [==============================] - 1s 3ms/step - loss: 0.6826 - accuracy: 0.6274
Epoch 2/100
28/28 [==============================] - 0s 3ms/step - loss: 0.6625 - accuracy: 0.6633
Epoch 3/100
28/28 [==============================] - 0s 3ms/step - loss: 0.6416 - accuracy: 0.6745
Epoch 4/100
28/28 [==============================] - 0s 3ms/step - loss: 0.6187 - accuracy: 0.6813
Epoch 5/100
28/28 [==============================] - 0s 3ms/step - loss: 0.5976 - accuracy: 0.6970
Epoch 6/100
28/28 [==============================] - 0s 3ms/step - loss: 0.5768 - accuracy: 0.7048
Epoch 7/100
28/28 [==============================] - 0s 3ms/step - loss: 0.5567 - accuracy: 0.7172
Epoch 8/100
28/28 [==============================] - 0s 3ms/step - loss: 0.5378 - accuracy: 0.7441
Epoch 9/100
28/28 [==============================] - 0s 3ms/step - loss: 0.5200 - accuracy: 0.7609
Epoch 10/100
28/28 [==============================] - 0s 2ms/step - loss: 0.5054 - accuracy: 0.7677
Epoch 11/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4915 - accuracy: 0.7755
Epoch 12/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4812 - accuracy: 0.7823
Epoch 13/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4719 - accuracy: 0.7823
Epoch 14/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4643 - accuracy: 0.7890
Epoch 15/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4578 - accuracy: 0.7924
Epoch 16/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4521 - accuracy: 0.8013
Epoch 17/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4476 - accuracy: 0.8025
Epoch 18/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4440 - accuracy: 0.8025
Epoch 19/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4412 - accuracy: 0.8013
Epoch 20/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4387 - accuracy: 0.8025
Epoch 21/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4369 - accuracy: 0.8013
Epoch 22/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4353 - accuracy: 0.7991
Epoch 23/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4338 - accuracy: 0.8047
Epoch 24/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4319 - accuracy: 0.8058
Epoch 25/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4305 - accuracy: 0.8002
Epoch 26/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4292 - accuracy: 0.8013
Epoch 27/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4280 - accuracy: 0.8025
Epoch 28/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4274 - accuracy: 0.8013
Epoch 29/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4258 - accuracy: 0.8036
Epoch 30/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4251 - accuracy: 0.8070
Epoch 31/100
```

```
Epoch 31/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4238 - accuracy: 0.8081
Epoch 32/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4230 - accuracy: 0.8092
Epoch 33/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4221 - accuracy: 0.8092
Epoch 34/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4213 - accuracy: 0.8081
Epoch 35/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4209 - accuracy: 0.8103
Epoch 36/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4198 - accuracy: 0.8114
Epoch 37/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4194 - accuracy: 0.8092
Epoch 38/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4186 - accuracy: 0.8092
Epoch 39/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4180 - accuracy: 0.8126
Epoch 40/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4172 - accuracy: 0.8114
Epoch 41/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4171 - accuracy: 0.8126
Epoch 42/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4161 - accuracy: 0.8114
Epoch 43/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4155 - accuracy: 0.8148
Epoch 44/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4154 - accuracy: 0.8126
Epoch 45/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4145 - accuracy: 0.8148
Epoch 46/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4143 - accuracy: 0.8137
Epoch 47/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4137 - accuracy: 0.8171
Epoch 48/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4133 - accuracy: 0.8159
Epoch 49/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4130 - accuracy: 0.8182
Epoch 50/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4130 - accuracy: 0.8182
Epoch 51/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4123 - accuracy: 0.8193
Epoch 52/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4119 - accuracy: 0.8171
Epoch 53/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4114 - accuracy: 0.8193
Epoch 54/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4111 - accuracy: 0.8182
Epoch 55/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4104 - accuracy: 0.8171
Epoch 56/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4099 - accuracy: 0.8171
Epoch 57/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4095 - accuracy: 0.8171
Epoch 58/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4093 - accuracy: 0.8204
Epoch 59/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4083 - accuracy: 0.8204
Epoch 60/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4083 - accuracy: 0.8204
Epoch 61/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4078 - accuracy: 0.8227
Epoch 62/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4080 - accuracy: 0.8204
Epoch 63/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4072 - accuracy: 0.8260
Epoch 64/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4064 - accuracy: 0.8249
Epoch 65/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4059 - accuracy: 0.8215
Epoch 66/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4062 - accuracy: 0.8260
Epoch 67/100
```

```
Epoch 67/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4052 - accuracy: 0.8238
Epoch 68/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4049 - accuracy: 0.8227
Epoch 69/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4047 - accuracy: 0.8238
Epoch 70/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4047 - accuracy: 0.8272
Epoch 71/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4037 - accuracy: 0.8283
Epoch 72/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4037 - accuracy: 0.8215
Epoch 73/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4037 - accuracy: 0.8249
Epoch 74/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4041 - accuracy: 0.8316
Epoch 75/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4033 - accuracy: 0.8316
Epoch 76/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4026 - accuracy: 0.8316
Epoch 77/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4020 - accuracy: 0.8305
Epoch 78/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4017 - accuracy: 0.8305
Epoch 79/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4013 - accuracy: 0.8328
Epoch 80/100
28/28 [==============================] - 0s 2ms/step - loss: 0.4010 - accuracy: 0.8350
Epoch 81/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4007 - accuracy: 0.8328
Epoch 82/100
28/28 [==============================] - 0s 5ms/step - loss: 0.4010 - accuracy: 0.8339
Epoch 83/100
28/28 [==============================] - 0s 3ms/step - loss: 0.4000 - accuracy: 0.8305
Epoch 84/100
28/28 [==============================] - 0s 2ms/step - loss: 0.3998 - accuracy: 0.8339
Epoch 85/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3999 - accuracy: 0.8328
Epoch 86/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3997 - accuracy: 0.8339
Epoch 87/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3994 - accuracy: 0.8350
Epoch 88/100
28/28 [==============================] - 0s 2ms/step - loss: 0.3992 - accuracy: 0.8350
Epoch 89/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3995 - accuracy: 0.8361
Epoch 90/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3991 - accuracy: 0.8350
Epoch 91/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3985 - accuracy: 0.8316
Epoch 92/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3987 - accuracy: 0.8339
Epoch 93/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3986 - accuracy: 0.8350
Epoch 94/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3980 - accuracy: 0.8339
Epoch 95/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3982 - accuracy: 0.8395
Epoch 96/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3981 - accuracy: 0.8384
Epoch 97/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3976 - accuracy: 0.8373
Epoch 98/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3974 - accuracy: 0.8384
Epoch 99/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3973 - accuracy: 0.8328
Epoch 100/100
28/28 [==============================] - 0s 3ms/step - loss: 0.3973 - accuracy: 0.8361
```

Out[24]:

```
<keras.callbacks.History at 0x7f70345766d0>
```

Making prediction and Model evaluation

- **Prediction**

In [25]:

```
y_pred = (ann.predict(X_test)>0.5)
```

- **Evaluation through metrices**

In [26]:

```
from sklearn.metrics import confusion_matrix, accuracy_score
print('Confusion Matrix :\n', confusion_matrix(y_test, y_pred))
print('Accuracy Score :', accuracy_score(y_test, y_pred))
```

```
Confusion Matrix :
 [[250  16]
 [ 27 125]]
Accuracy Score : 0.8971291866028708
```

- **Making csv file for submission**

In [27]:

```
test_dataset.PassengerId
```

Out[27]:

```
0       892
1       893
2       894
3       895
4       896
       ...
413    1305
414    1306
415    1307
416    1308
417    1309
Name: PassengerId, Length: 418, dtype: int64
```

In [28]:

```
predictions = []
for i in y_pred:
  if i[0]:
    predictions.append(1)
  else:
    predictions.append(0)
# predictions
```

In [29]:

```
# output = pd.DataFrame({"PassengerId": test_dataset.PassengerId, "Survived": predictions
})
# print(output)
# output.to_csv('19BCE245_DL_Prac1.csv', index=False)
```

Extra models:

1. XGBoost

In [30]:

```
from xgboost import XGBClassifier   # Similarly for regression, there is a class named as `XGRegressor`
classifier = XGBClassifier()
classifier.fit(X_train, y_train)
from sklearn.metrics import confusion_matrix, accuracy_score
y_pred = classifier.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
print(cm)
accuracy_score(y_test, y_pred)
```

```
/opt/conda/lib/python3.7/site-packages/xgboost/sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use_label_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num_class - 1].
  warnings.warn(label_encoder_deprecation_msg, UserWarning)
```

```
[19:07:23] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[[230  36]
 [ 38 114]]
```

Out[30]:

```
0.8229665071770335
```

In [31]:

```
from sklearn.model_selection import cross_val_score
accuracies = cross_val_score(estimator = classifier, X = X_train, y = y_train, cv = 10)
print(f"Accuracy: {accuracies.mean()*100:.2f} %")
print(f"Standard Deviation: {accuracies.std()*100:.2f} %")
```

```
/opt/conda/lib/python3.7/site-packages/xgboost/sklearn.py:1224: UserWarning: The use of label encoder in XGBClassifier is deprecated and will be removed in a future release. To remove this warning, do the following: 1) Pass option use_label_encoder=False when constructing XGBClassifier object; and 2) Encode your labels (y) as integers starting with 0, i.e. 0, 1, 2, ..., [num_class - 1].
  warnings.warn(label_encoder_deprecation_msg, UserWarning)
```

```
[19:07:24] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:25] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:26] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:27] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:27] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:28] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:28] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:29] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:30] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
[19:07:30] WARNING: ../src/learner.cc:1115: Starting in XGBoost 1.3.0, the default evaluation metric used with the objective 'binary:logistic' was changed from 'error' to 'logloss'. Explicitly set eval_metric if you'd like to restore the old behavior.
Accuracy: 80.92 %
```

Accuracy: 86.92 %
Standard Deviation: 3.88 %

2. CatBoost

In [32]:

```
!pip install catboost
```

```
Requirement already satisfied: catboost in /opt/conda/lib/python3.7/site-packages (1.0.4)
Requirement already satisfied: plotly in /opt/conda/lib/python3.7/site-packages (from cat
boost) (5.5.0)
Requirement already satisfied: scipy in /opt/conda/lib/python3.7/site-packages (from catb
oost) (1.7.3)
Requirement already satisfied: numpy>=1.16.0 in /opt/conda/lib/python3.7/site-packages (f
rom catboost) (1.20.3)
Requirement already satisfied: matplotlib in /opt/conda/lib/python3.7/site-packages (from
catboost) (3.5.1)
Requirement already satisfied: six in /opt/conda/lib/python3.7/site-packages (from catboo
st) (1.16.0)
Requirement already satisfied: graphviz in /opt/conda/lib/python3.7/site-packages (from c
atboost) (0.8.4)
Requirement already satisfied: pandas>=0.24.0 in /opt/conda/lib/python3.7/site-packages (
from catboost) (1.3.5)
Requirement already satisfied: python-dateutil>=2.7.3 in /opt/conda/lib/python3.7/site-pa
ckages (from pandas>=0.24.0->catboost) (2.8.0)
Requirement already satisfied: pytz>=2017.3 in /opt/conda/lib/python3.7/site-packages (fr
om pandas>=0.24.0->catboost) (2021.3)
Requirement already satisfied: fonttools>=4.22.0 in /opt/conda/lib/python3.7/site-package
s (from matplotlib->catboost) (4.28.4)
Requirement already satisfied: pillow>=6.2.0 in /opt/conda/lib/python3.7/site-packages (f
rom matplotlib->catboost) (8.2.0)
Requirement already satisfied: packaging>=20.0 in /opt/conda/lib/python3.7/site-packages
(from matplotlib->catboost) (21.3)
Requirement already satisfied: pyparsing>=2.2.1 in /opt/conda/lib/python3.7/site-packages
(from matplotlib->catboost) (3.0.6)
Requirement already satisfied: cycler>=0.10 in /opt/conda/lib/python3.7/site-packages (fr
om matplotlib->catboost) (0.11.0)
Requirement already satisfied: kiwisolver>=1.0.1 in /opt/conda/lib/python3.7/site-package
s (from matplotlib->catboost) (1.3.2)
Requirement already satisfied: tenacity>=6.2.0 in /opt/conda/lib/python3.7/site-packages
(from plotly->catboost) (8.0.1)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting
behaviour with the system package manager. It is recommended to use a virtual environment
instead: https://pip.pypa.io/warnings/venv
```

In [33]:

```
from catboost import CatBoostClassifier   # The same CatBoostRegressor is available for R
egression.
 classifier = CatBoostClassifier()
 classifier.fit(X_train, y_train)
```

```
Learning rate set to 0.009807
0: learn: 0.6865383 total: 53.8ms remaining: 53.8s
1: learn: 0.6806346 total: 55.2ms remaining: 27.6s
2: learn: 0.6767701 total: 56.2ms remaining: 18.7s
3: learn: 0.6709615 total: 57.7ms remaining: 14.4s
4: learn: 0.6650482 total: 59.3ms remaining: 11.8s
5: learn: 0.6590147 total: 60.9ms remaining: 10.1s
6: learn: 0.6533568 total: 62.3ms remaining: 8.84s
7: learn: 0.6478691 total: 63.9ms remaining: 7.93s
8: learn: 0.6428664 total: 65ms remaining: 7.16s
9: learn: 0.6370185 total: 66.5ms remaining: 6.58s
10: learn: 0.6325716 total: 68.2ms remaining: 6.13s
11: learn: 0.6281765 total: 69.3ms remaining: 5.7s
12: learn: 0.6232064 total: 70.8ms remaining: 5.37s
13: learn: 0.6187835 total: 72.3ms remaining: 5.09s
14: learn: 0.6137314 total: 73.7ms remaining: 4.84s
15: learn: 0.6092345 total: 74.9ms remaining: 4.61s
16: learn: 0.6056495 total: 75.8ms remaining: 4.38s
```

```
17: learn: 0.6004947 total: 77ms remaining: 4.2s
18: learn: 0.5964621 total: 78.5ms remaining: 4.05s
19: learn: 0.5916184 total: 79.8ms remaining: 3.91s
20: learn: 0.5873530 total: 81.1ms remaining: 3.78s
21: learn: 0.5831094 total: 82.6ms remaining: 3.67s
22: learn: 0.5782799 total: 84ms remaining: 3.57s
23: learn: 0.5751086 total: 84.8ms remaining: 3.45s
24: learn: 0.5711793 total: 86ms remaining: 3.35s
25: learn: 0.5675715 total: 87.8ms remaining: 3.29s
26: learn: 0.5638419 total: 89.1ms remaining: 3.21s
27: learn: 0.5607229 total: 90.6ms remaining: 3.14s
28: learn: 0.5565209 total: 92.3ms remaining: 3.09s
29: learn: 0.5530420 total: 93.5ms remaining: 3.02s
30: learn: 0.5496087 total: 94.9ms remaining: 2.97s
31: learn: 0.5462138 total: 96.3ms remaining: 2.91s
32: learn: 0.5432557 total: 97.8ms remaining: 2.87s
33: learn: 0.5403630 total: 99.2ms remaining: 2.82s
34: learn: 0.5380133 total: 100ms remaining: 2.77s
35: learn: 0.5354989 total: 101ms remaining: 2.71s
36: learn: 0.5324779 total: 103ms remaining: 2.67s
37: learn: 0.5289940 total: 104ms remaining: 2.64s
38: learn: 0.5257857 total: 107ms remaining: 2.63s
39: learn: 0.5231938 total: 108ms remaining: 2.6s
40: learn: 0.5201852 total: 109ms remaining: 2.56s
41: learn: 0.5187639 total: 110ms remaining: 2.52s
42: learn: 0.5162989 total: 112ms remaining: 2.49s
43: learn: 0.5139735 total: 113ms remaining: 2.45s
44: learn: 0.5125846 total: 113ms remaining: 2.41s
45: learn: 0.5098413 total: 115ms remaining: 2.38s
46: learn: 0.5078147 total: 116ms remaining: 2.34s
47: learn: 0.5054384 total: 118ms remaining: 2.34s
48: learn: 0.5029917 total: 119ms remaining: 2.31s
49: learn: 0.5012713 total: 120ms remaining: 2.27s
50: learn: 0.4987124 total: 121ms remaining: 2.25s
51: learn: 0.4962170 total: 122ms remaining: 2.23s
52: learn: 0.4946236 total: 123ms remaining: 2.2s
53: learn: 0.4925200 total: 125ms remaining: 2.18s
54: learn: 0.4906034 total: 126ms remaining: 2.16s
55: learn: 0.4880191 total: 128ms remaining: 2.16s
56: learn: 0.4862472 total: 131ms remaining: 2.16s
57: learn: 0.4841907 total: 132ms remaining: 2.15s
58: learn: 0.4826407 total: 134ms remaining: 2.13s
59: learn: 0.4809542 total: 135ms remaining: 2.12s
60: learn: 0.4788393 total: 137ms remaining: 2.11s
61: learn: 0.4773068 total: 138ms remaining: 2.09s
62: learn: 0.4754550 total: 139ms remaining: 2.07s
63: learn: 0.4741418 total: 140ms remaining: 2.05s
64: learn: 0.4723455 total: 142ms remaining: 2.05s
65: learn: 0.4703930 total: 144ms remaining: 2.03s
66: learn: 0.4686302 total: 145ms remaining: 2.02s
67: learn: 0.4667206 total: 146ms remaining: 2s
68: learn: 0.4652062 total: 148ms remaining: 2s
69: learn: 0.4634119 total: 149ms remaining: 1.98s
70: learn: 0.4616053 total: 151ms remaining: 1.97s
71: learn: 0.4601936 total: 152ms remaining: 1.96s
72: learn: 0.4585553 total: 154ms remaining: 1.95s
73: learn: 0.4568180 total: 155ms remaining: 1.94s
74: learn: 0.4562312 total: 156ms remaining: 1.92s
75: learn: 0.4544744 total: 157ms remaining: 1.91s
76: learn: 0.4528753 total: 159ms remaining: 1.9s
77: learn: 0.4515149 total: 160ms remaining: 1.89s
78: learn: 0.4500691 total: 163ms remaining: 1.9s
79: learn: 0.4489836 total: 165ms remaining: 1.89s
80: learn: 0.4478693 total: 166ms remaining: 1.88s
81: learn: 0.4465592 total: 167ms remaining: 1.87s
82: learn: 0.4453949 total: 168ms remaining: 1.86s
83: learn: 0.4442990 total: 170ms remaining: 1.85s
84: learn: 0.4430477 total: 171ms remaining: 1.84s
85: learn: 0.4416480 total: 173ms remaining: 1.83s
86: learn: 0.4403624 total: 175ms remaining: 1.83s
87: learn: 0.4393912 total: 176ms remaining: 1.82s
88: learn: 0.4382571 total: 178ms remaining: 1.82s
```

```
89: learn: 0.4374060 total: 180ms remaining: 1.81s
90: learn: 0.4363711 total: 184ms remaining: 1.84s
91: learn: 0.4354909 total: 186ms remaining: 1.84s
92: learn: 0.4348646 total: 187ms remaining: 1.83s
93: learn: 0.4338476 total: 189ms remaining: 1.82s
94: learn: 0.4329489 total: 190ms remaining: 1.81s
95: learn: 0.4317058 total: 191ms remaining: 1.8s
96: learn: 0.4306043 total: 193ms remaining: 1.8s
97: learn: 0.4293694 total: 194ms remaining: 1.79s
98: learn: 0.4283844 total: 196ms remaining: 1.78s
99: learn: 0.4272231 total: 197ms remaining: 1.77s
100: learn: 0.4267159 total: 198ms remaining: 1.76s
101: learn: 0.4259438 total: 200ms remaining: 1.76s
102: learn: 0.4247985 total: 201ms remaining: 1.75s
103: learn: 0.4238730 total: 202ms remaining: 1.74s
104: learn: 0.4229757 total: 204ms remaining: 1.74s
105: learn: 0.4219207 total: 205ms remaining: 1.73s
106: learn: 0.4209959 total: 206ms remaining: 1.72s
107: learn: 0.4201490 total: 208ms remaining: 1.72s
108: learn: 0.4192642 total: 209ms remaining: 1.71s
109: learn: 0.4184107 total: 211ms remaining: 1.7s
110: learn: 0.4180146 total: 211ms remaining: 1.69s
111: learn: 0.4174109 total: 212ms remaining: 1.68s
112: learn: 0.4165768 total: 214ms remaining: 1.68s
113: learn: 0.4159091 total: 215ms remaining: 1.67s
114: learn: 0.4156797 total: 215ms remaining: 1.66s
115: learn: 0.4147523 total: 216ms remaining: 1.65s
116: learn: 0.4139606 total: 218ms remaining: 1.65s
117: learn: 0.4135056 total: 219ms remaining: 1.64s
118: learn: 0.4129001 total: 220ms remaining: 1.63s
119: learn: 0.4121343 total: 222ms remaining: 1.63s
120: learn: 0.4115358 total: 223ms remaining: 1.62s
121: learn: 0.4108015 total: 225ms remaining: 1.62s
122: learn: 0.4106099 total: 225ms remaining: 1.61s
123: learn: 0.4102966 total: 227ms remaining: 1.6s
124: learn: 0.4098188 total: 228ms remaining: 1.59s
125: learn: 0.4090476 total: 229ms remaining: 1.59s
126: learn: 0.4083565 total: 231ms remaining: 1.59s
127: learn: 0.4078597 total: 232ms remaining: 1.58s
128: learn: 0.4070448 total: 234ms remaining: 1.58s
129: learn: 0.4064946 total: 235ms remaining: 1.57s
130: learn: 0.4059819 total: 236ms remaining: 1.57s
131: learn: 0.4053958 total: 238ms remaining: 1.56s
132: learn: 0.4047684 total: 239ms remaining: 1.56s
133: learn: 0.4043123 total: 241ms remaining: 1.55s
134: learn: 0.4038141 total: 242ms remaining: 1.55s
135: learn: 0.4032261 total: 244ms remaining: 1.55s
136: learn: 0.4025482 total: 245ms remaining: 1.54s
137: learn: 0.4023851 total: 246ms remaining: 1.54s
138: learn: 0.4017487 total: 248ms remaining: 1.53s
139: learn: 0.4013009 total: 249ms remaining: 1.53s
140: learn: 0.4010205 total: 250ms remaining: 1.52s
141: learn: 0.4005530 total: 251ms remaining: 1.52s
142: learn: 0.4002699 total: 252ms remaining: 1.51s
143: learn: 0.3997681 total: 253ms remaining: 1.51s
144: learn: 0.3994226 total: 255ms remaining: 1.5s
145: learn: 0.3988791 total: 256ms remaining: 1.5s
146: learn: 0.3984385 total: 257ms remaining: 1.49s
147: learn: 0.3979471 total: 258ms remaining: 1.49s
148: learn: 0.3973311 total: 260ms remaining: 1.48s
149: learn: 0.3970197 total: 261ms remaining: 1.48s
150: learn: 0.3966482 total: 262ms remaining: 1.47s
151: learn: 0.3963284 total: 263ms remaining: 1.47s
152: learn: 0.3957758 total: 265ms remaining: 1.46s
153: learn: 0.3952566 total: 266ms remaining: 1.46s
154: learn: 0.3951190 total: 267ms remaining: 1.46s
155: learn: 0.3945095 total: 268ms remaining: 1.45s
156: learn: 0.3941398 total: 269ms remaining: 1.45s
157: learn: 0.3938628 total: 271ms remaining: 1.44s
158: learn: 0.3931681 total: 272ms remaining: 1.44s
159: learn: 0.3928375 total: 273ms remaining: 1.43s
160: learn: 0.3924432 total: 274ms remaining: 1.43s
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161: learn: 0.3921184 total: 275ms remaining: 1.42s
162: learn: 0.3917074 total: 277ms remaining: 1.42s
163: learn: 0.3912105 total: 278ms remaining: 1.42s
164: learn: 0.3907866 total: 279ms remaining: 1.41s
165: learn: 0.3903981 total: 281ms remaining: 1.41s
166: learn: 0.3902223 total: 283ms remaining: 1.41s
167: learn: 0.3901766 total: 284ms remaining: 1.4s
168: learn: 0.3897581 total: 285ms remaining: 1.4s
169: learn: 0.3896368 total: 286ms remaining: 1.4s
170: learn: 0.3893034 total: 288ms remaining: 1.4s
171: learn: 0.3889292 total: 290ms remaining: 1.39s
172: learn: 0.3885710 total: 291ms remaining: 1.39s
173: learn: 0.3882253 total: 293ms remaining: 1.39s
174: learn: 0.3879176 total: 295ms remaining: 1.39s
175: learn: 0.3878142 total: 297ms remaining: 1.39s
176: learn: 0.3873953 total: 298ms remaining: 1.38s
177: learn: 0.3870532 total: 299ms remaining: 1.38s
178: learn: 0.3866247 total: 300ms remaining: 1.38s
179: learn: 0.3863751 total: 301ms remaining: 1.37s
180: learn: 0.3860832 total: 303ms remaining: 1.37s
181: learn: 0.3857160 total: 305ms remaining: 1.37s
182: learn: 0.3855449 total: 306ms remaining: 1.36s
183: learn: 0.3852382 total: 307ms remaining: 1.36s
184: learn: 0.3851851 total: 308ms remaining: 1.36s
185: learn: 0.3848126 total: 309ms remaining: 1.35s
186: learn: 0.3844975 total: 311ms remaining: 1.35s
187: learn: 0.3842662 total: 312ms remaining: 1.35s
188: learn: 0.3840235 total: 314ms remaining: 1.35s
189: learn: 0.3837106 total: 316ms remaining: 1.34s
190: learn: 0.3833765 total: 317ms remaining: 1.34s
191: learn: 0.3831723 total: 319ms remaining: 1.34s
192: learn: 0.3828482 total: 320ms remaining: 1.34s
193: learn: 0.3826702 total: 322ms remaining: 1.34s
194: learn: 0.3823433 total: 324ms remaining: 1.34s
195: learn: 0.3820583 total: 325ms remaining: 1.33s
196: learn: 0.3816611 total: 326ms remaining: 1.33s
197: learn: 0.3814329 total: 328ms remaining: 1.33s
198: learn: 0.3811269 total: 329ms remaining: 1.32s
199: learn: 0.3809442 total: 330ms remaining: 1.32s
200: learn: 0.3805586 total: 331ms remaining: 1.32s
201: learn: 0.3800322 total: 333ms remaining: 1.31s
202: learn: 0.3799010 total: 333ms remaining: 1.31s
203: learn: 0.3796455 total: 334ms remaining: 1.3s
204: learn: 0.3793422 total: 335ms remaining: 1.3s
205: learn: 0.3791803 total: 336ms remaining: 1.29s
206: learn: 0.3788598 total: 337ms remaining: 1.29s
207: learn: 0.3787407 total: 338ms remaining: 1.29s
208: learn: 0.3782902 total: 340ms remaining: 1.28s
209: learn: 0.3778104 total: 341ms remaining: 1.28s
210: learn: 0.3775038 total: 342ms remaining: 1.28s
211: learn: 0.3772927 total: 343ms remaining: 1.28s
212: learn: 0.3771133 total: 345ms remaining: 1.27s
213: learn: 0.3770292 total: 346ms remaining: 1.27s
214: learn: 0.3768949 total: 347ms remaining: 1.27s
215: learn: 0.3766235 total: 349ms remaining: 1.27s
216: learn: 0.3763073 total: 351ms remaining: 1.26s
217: learn: 0.3762418 total: 352ms remaining: 1.26s
218: learn: 0.3758937 total: 353ms remaining: 1.26s
219: learn: 0.3756171 total: 355ms remaining: 1.26s
220: learn: 0.3754589 total: 357ms remaining: 1.26s
221: learn: 0.3753099 total: 359ms remaining: 1.26s
222: learn: 0.3751688 total: 362ms remaining: 1.26s
223: learn: 0.3749083 total: 364ms remaining: 1.26s
224: learn: 0.3745904 total: 367ms remaining: 1.26s
225: learn: 0.3743620 total: 368ms remaining: 1.26s
226: learn: 0.3741535 total: 370ms remaining: 1.26s
227: learn: 0.3738928 total: 371ms remaining: 1.26s
228: learn: 0.3734991 total: 373ms remaining: 1.25s
229: learn: 0.3731571 total: 374ms remaining: 1.25s
230: learn: 0.3729852 total: 376ms remaining: 1.25s
231: learn: 0.3726327 total: 377ms remaining: 1.25s
232: learn: 0.3724426 total: 378ms remaining: 1.25s
```

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233: learn: 0.3722162 total: 380ms remaining: 1.24s
234: learn: 0.3717592 total: 382ms remaining: 1.24s
235: learn: 0.3715632 total: 384ms remaining: 1.24s
236: learn: 0.3713506 total: 386ms remaining: 1.24s
237: learn: 0.3711460 total: 388ms remaining: 1.24s
238: learn: 0.3709525 total: 390ms remaining: 1.24s
239: learn: 0.3707092 total: 391ms remaining: 1.24s
240: learn: 0.3704627 total: 393ms remaining: 1.24s
241: learn: 0.3703187 total: 395ms remaining: 1.24s
242: learn: 0.3700643 total: 396ms remaining: 1.23s
243: learn: 0.3698618 total: 398ms remaining: 1.23s
244: learn: 0.3696666 total: 400ms remaining: 1.23s
245: learn: 0.3693423 total: 401ms remaining: 1.23s
246: learn: 0.3691536 total: 403ms remaining: 1.23s
247: learn: 0.3690461 total: 405ms remaining: 1.23s
248: learn: 0.3687642 total: 408ms remaining: 1.23s
249: learn: 0.3686204 total: 411ms remaining: 1.23s
250: learn: 0.3682637 total: 413ms remaining: 1.23s
251: learn: 0.3681066 total: 414ms remaining: 1.23s
252: learn: 0.3678238 total: 416ms remaining: 1.23s
253: learn: 0.3677782 total: 417ms remaining: 1.22s
254: learn: 0.3675345 total: 418ms remaining: 1.22s
255: learn: 0.3673683 total: 420ms remaining: 1.22s
256: learn: 0.3671238 total: 421ms remaining: 1.22s
257: learn: 0.3668998 total: 422ms remaining: 1.21s
258: learn: 0.3668496 total: 424ms remaining: 1.21s
259: learn: 0.3667713 total: 425ms remaining: 1.21s
260: learn: 0.3666247 total: 427ms remaining: 1.21s
261: learn: 0.3664054 total: 428ms remaining: 1.21s
262: learn: 0.3661919 total: 429ms remaining: 1.2s
263: learn: 0.3660365 total: 431ms remaining: 1.2s
264: learn: 0.3659154 total: 432ms remaining: 1.2s
265: learn: 0.3656880 total: 434ms remaining: 1.2s
266: learn: 0.3654946 total: 435ms remaining: 1.19s
267: learn: 0.3653486 total: 436ms remaining: 1.19s
268: learn: 0.3650680 total: 438ms remaining: 1.19s
269: learn: 0.3647728 total: 440ms remaining: 1.19s
270: learn: 0.3645089 total: 441ms remaining: 1.19s
271: learn: 0.3640465 total: 443ms remaining: 1.18s
272: learn: 0.3638224 total: 444ms remaining: 1.18s
273: learn: 0.3636143 total: 447ms remaining: 1.18s
274: learn: 0.3634719 total: 449ms remaining: 1.18s
275: learn: 0.3632070 total: 451ms remaining: 1.18s
276: learn: 0.3629469 total: 455ms remaining: 1.19s
277: learn: 0.3627036 total: 457ms remaining: 1.19s
278: learn: 0.3624039 total: 459ms remaining: 1.19s
279: learn: 0.3620831 total: 460ms remaining: 1.18s
280: learn: 0.3618973 total: 462ms remaining: 1.18s
281: learn: 0.3617355 total: 464ms remaining: 1.18s
282: learn: 0.3615669 total: 465ms remaining: 1.18s
283: learn: 0.3613120 total: 467ms remaining: 1.18s
284: learn: 0.3611410 total: 468ms remaining: 1.18s
285: learn: 0.3610520 total: 470ms remaining: 1.17s
286: learn: 0.3608222 total: 472ms remaining: 1.17s
287: learn: 0.3605637 total: 474ms remaining: 1.17s
288: learn: 0.3604171 total: 475ms remaining: 1.17s
289: learn: 0.3602092 total: 478ms remaining: 1.17s
290: learn: 0.3600485 total: 479ms remaining: 1.17s
291: learn: 0.3598819 total: 481ms remaining: 1.17s
292: learn: 0.3598159 total: 483ms remaining: 1.16s
293: learn: 0.3596802 total: 484ms remaining: 1.16s
294: learn: 0.3594727 total: 486ms remaining: 1.16s
295: learn: 0.3592863 total: 487ms remaining: 1.16s
296: learn: 0.3592277 total: 491ms remaining: 1.16s
297: learn: 0.3591519 total: 492ms remaining: 1.16s
298: learn: 0.3590736 total: 494ms remaining: 1.16s
299: learn: 0.3589690 total: 497ms remaining: 1.16s
300: learn: 0.3586836 total: 498ms remaining: 1.16s
301: learn: 0.3585649 total: 500ms remaining: 1.15s
302: learn: 0.3584248 total: 501ms remaining: 1.15s
303: learn: 0.3581595 total: 503ms remaining: 1.15s
304: learn: 0.3579121 total: 505ms remaining: 1.15s
```

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305: learn: 0.3577502 total: 507ms remaining: 1.15s
306: learn: 0.3576458 total: 508ms remaining: 1.15s
307: learn: 0.3574136 total: 510ms remaining: 1.15s
308: learn: 0.3572111 total: 512ms remaining: 1.14s
309: learn: 0.3570230 total: 514ms remaining: 1.14s
310: learn: 0.3569057 total: 516ms remaining: 1.14s
311: learn: 0.3568062 total: 519ms remaining: 1.14s
312: learn: 0.3565493 total: 521ms remaining: 1.14s
313: learn: 0.3564345 total: 523ms remaining: 1.14s
314: learn: 0.3563090 total: 526ms remaining: 1.14s
315: learn: 0.3560559 total: 528ms remaining: 1.14s
316: learn: 0.3559553 total: 530ms remaining: 1.14s
317: learn: 0.3557902 total: 535ms remaining: 1.15s
318: learn: 0.3556356 total: 538ms remaining: 1.15s
319: learn: 0.3555882 total: 540ms remaining: 1.15s
320: learn: 0.3553893 total: 542ms remaining: 1.15s
321: learn: 0.3552915 total: 543ms remaining: 1.14s
322: learn: 0.3549861 total: 544ms remaining: 1.14s
323: learn: 0.3549407 total: 546ms remaining: 1.14s
324: learn: 0.3549013 total: 547ms remaining: 1.14s
325: learn: 0.3546235 total: 549ms remaining: 1.14s
326: learn: 0.3543340 total: 553ms remaining: 1.14s
327: learn: 0.3540782 total: 555ms remaining: 1.14s
328: learn: 0.3540111 total: 558ms remaining: 1.14s
329: learn: 0.3539670 total: 559ms remaining: 1.13s
330: learn: 0.3536962 total: 560ms remaining: 1.13s
331: learn: 0.3534947 total: 562ms remaining: 1.13s
332: learn: 0.3532770 total: 564ms remaining: 1.13s
333: learn: 0.3530419 total: 566ms remaining: 1.13s
334: learn: 0.3529357 total: 568ms remaining: 1.13s
335: learn: 0.3528536 total: 569ms remaining: 1.13s
336: learn: 0.3527341 total: 570ms remaining: 1.12s
337: learn: 0.3526063 total: 575ms remaining: 1.13s
338: learn: 0.3524179 total: 577ms remaining: 1.13s
339: learn: 0.3521557 total: 582ms remaining: 1.13s
340: learn: 0.3521002 total: 584ms remaining: 1.13s
341: learn: 0.3519678 total: 587ms remaining: 1.13s
342: learn: 0.3518903 total: 590ms remaining: 1.13s
343: learn: 0.3517509 total: 592ms remaining: 1.13s
344: learn: 0.3516656 total: 597ms remaining: 1.13s
345: learn: 0.3515631 total: 599ms remaining: 1.13s
346: learn: 0.3514546 total: 600ms remaining: 1.13s
347: learn: 0.3513582 total: 602ms remaining: 1.13s
348: learn: 0.3512181 total: 604ms remaining: 1.13s
349: learn: 0.3510831 total: 606ms remaining: 1.12s
350: learn: 0.3508896 total: 607ms remaining: 1.12s
351: learn: 0.3507718 total: 609ms remaining: 1.12s
352: learn: 0.3506540 total: 611ms remaining: 1.12s
353: learn: 0.3505739 total: 613ms remaining: 1.12s
354: learn: 0.3503850 total: 614ms remaining: 1.11s
355: learn: 0.3503055 total: 617ms remaining: 1.11s
356: learn: 0.3502053 total: 618ms remaining: 1.11s
357: learn: 0.3500132 total: 622ms remaining: 1.12s
358: learn: 0.3499681 total: 624ms remaining: 1.11s
359: learn: 0.3499251 total: 625ms remaining: 1.11s
360: learn: 0.3498193 total: 627ms remaining: 1.11s
361: learn: 0.3496653 total: 630ms remaining: 1.11s
362: learn: 0.3496369 total: 632ms remaining: 1.11s
363: learn: 0.3495309 total: 637ms remaining: 1.11s
364: learn: 0.3494410 total: 640ms remaining: 1.11s
365: learn: 0.3491161 total: 643ms remaining: 1.11s
366: learn: 0.3490990 total: 644ms remaining: 1.11s
367: learn: 0.3490873 total: 645ms remaining: 1.11s
368: learn: 0.3489880 total: 649ms remaining: 1.11s
369: learn: 0.3486508 total: 651ms remaining: 1.11s
370: learn: 0.3485258 total: 654ms remaining: 1.11s
371: learn: 0.3483598 total: 656ms remaining: 1.11s
372: learn: 0.3481800 total: 660ms remaining: 1.11s
373: learn: 0.3481523 total: 662ms remaining: 1.11s
374: learn: 0.3480927 total: 664ms remaining: 1.11s
375: learn: 0.3478314 total: 667ms remaining: 1.11s
376: learn: 0.3477309 total: 669ms remaining: 1.1s
```

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377: learn: 0.3475877 total: 672ms remaining: 1.1s
378: learn: 0.3475479 total: 674ms remaining: 1.1s
379: learn: 0.3474440 total: 678ms remaining: 1.11s
380: learn: 0.3472396 total: 682ms remaining: 1.11s
381: learn: 0.3471269 total: 684ms remaining: 1.11s
382: learn: 0.3469359 total: 687ms remaining: 1.11s
383: learn: 0.3467796 total: 689ms remaining: 1.1s
384: learn: 0.3466850 total: 691ms remaining: 1.1s
385: learn: 0.3466294 total: 694ms remaining: 1.1s
386: learn: 0.3464251 total: 696ms remaining: 1.1s
387: learn: 0.3463060 total: 698ms remaining: 1.1s
388: learn: 0.3462268 total: 702ms remaining: 1.1s
389: learn: 0.3460770 total: 705ms remaining: 1.1s
390: learn: 0.3459389 total: 707ms remaining: 1.1s
391: learn: 0.3458957 total: 709ms remaining: 1.1s
392: learn: 0.3457980 total: 712ms remaining: 1.1s
393: learn: 0.3457635 total: 715ms remaining: 1.1s
394: learn: 0.3455678 total: 717ms remaining: 1.1s
395: learn: 0.3454422 total: 719ms remaining: 1.1s
396: learn: 0.3451515 total: 726ms remaining: 1.1s
397: learn: 0.3450602 total: 729ms remaining: 1.1s
398: learn: 0.3449942 total: 731ms remaining: 1.1s
399: learn: 0.3448581 total: 732ms remaining: 1.1s
400: learn: 0.3446772 total: 733ms remaining: 1.09s
401: learn: 0.3446028 total: 734ms remaining: 1.09s
402: learn: 0.3445120 total: 736ms remaining: 1.09s
403: learn: 0.3443324 total: 738ms remaining: 1.09s
404: learn: 0.3442000 total: 740ms remaining: 1.09s
405: learn: 0.3439765 total: 741ms remaining: 1.08s
406: learn: 0.3438343 total: 743ms remaining: 1.08s
407: learn: 0.3437724 total: 744ms remaining: 1.08s
408: learn: 0.3435785 total: 746ms remaining: 1.08s
409: learn: 0.3435280 total: 747ms remaining: 1.07s
410: learn: 0.3432855 total: 748ms remaining: 1.07s
411: learn: 0.3431629 total: 750ms remaining: 1.07s
412: learn: 0.3430066 total: 752ms remaining: 1.07s
413: learn: 0.3427844 total: 754ms remaining: 1.07s
414: learn: 0.3426802 total: 758ms remaining: 1.07s
415: learn: 0.3425059 total: 760ms remaining: 1.07s
416: learn: 0.3423659 total: 763ms remaining: 1.07s
417: learn: 0.3422160 total: 765ms remaining: 1.06s
418: learn: 0.3420803 total: 766ms remaining: 1.06s
419: learn: 0.3419993 total: 768ms remaining: 1.06s
420: learn: 0.3419029 total: 769ms remaining: 1.06s
421: learn: 0.3418046 total: 771ms remaining: 1.06s
422: learn: 0.3417969 total: 772ms remaining: 1.05s
423: learn: 0.3416581 total: 774ms remaining: 1.05s
424: learn: 0.3414220 total: 776ms remaining: 1.05s
425: learn: 0.3412690 total: 778ms remaining: 1.05s
426: learn: 0.3411438 total: 781ms remaining: 1.05s
427: learn: 0.3410305 total: 785ms remaining: 1.05s
428: learn: 0.3409242 total: 787ms remaining: 1.05s
429: learn: 0.3407426 total: 791ms remaining: 1.05s
430: learn: 0.3404514 total: 795ms remaining: 1.05s
431: learn: 0.3402711 total: 796ms remaining: 1.05s
432: learn: 0.3400299 total: 799ms remaining: 1.04s
433: learn: 0.3399553 total: 802ms remaining: 1.04s
434: learn: 0.3398649 total: 803ms remaining: 1.04s
435: learn: 0.3396693 total: 805ms remaining: 1.04s
436: learn: 0.3393835 total: 806ms remaining: 1.04s
437: learn: 0.3392683 total: 808ms remaining: 1.04s
438: learn: 0.3391512 total: 811ms remaining: 1.04s
439: learn: 0.3390787 total: 813ms remaining: 1.03s
440: learn: 0.3390219 total: 816ms remaining: 1.03s
441: learn: 0.3389026 total: 818ms remaining: 1.03s
442: learn: 0.3387269 total: 822ms remaining: 1.03s
443: learn: 0.3386362 total: 824ms remaining: 1.03s
444: learn: 0.3386142 total: 826ms remaining: 1.03s
445: learn: 0.3384830 total: 827ms remaining: 1.03s
446: learn: 0.3384172 total: 829ms remaining: 1.02s
447: learn: 0.3382357 total: 831ms remaining: 1.02s
448: learn: 0.3380844 total: 833ms remaining: 1.02s
```

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449: learn: 0.3380459 total: 834ms remaining: 1.02s
450: learn: 0.3378721 total: 837ms remaining: 1.02s
451: learn: 0.3377177 total: 839ms remaining: 1.02s
452: learn: 0.3375924 total: 842ms remaining: 1.02s
453: learn: 0.3375381 total: 844ms remaining: 1.01s
454: learn: 0.3374388 total: 845ms remaining: 1.01s
455: learn: 0.3372863 total: 847ms remaining: 1.01s
456: learn: 0.3371957 total: 849ms remaining: 1.01s
457: learn: 0.3370836 total: 851ms remaining: 1.01s
458: learn: 0.3370472 total: 852ms remaining: 1s
459: learn: 0.3369680 total: 854ms remaining: 1s
460: learn: 0.3368219 total: 855ms remaining: 1s
461: learn: 0.3368100 total: 857ms remaining: 998ms
462: learn: 0.3367361 total: 858ms remaining: 995ms
463: learn: 0.3366642 total: 860ms remaining: 993ms
464: learn: 0.3364758 total: 861ms remaining: 991ms
465: learn: 0.3362795 total: 863ms remaining: 989ms
466: learn: 0.3362252 total: 864ms remaining: 986ms
467: learn: 0.3361760 total: 866ms remaining: 984ms
468: learn: 0.3360965 total: 867ms remaining: 982ms
469: learn: 0.3360243 total: 868ms remaining: 979ms
470: learn: 0.3358716 total: 872ms remaining: 980ms
471: learn: 0.3357994 total: 874ms remaining: 978ms
472: learn: 0.3355945 total: 877ms remaining: 977ms
473: learn: 0.3354244 total: 882ms remaining: 978ms
474: learn: 0.3353298 total: 884ms remaining: 977ms
475: learn: 0.3353047 total: 886ms remaining: 976ms
476: learn: 0.3352547 total: 888ms remaining: 974ms
477: learn: 0.3351099 total: 890ms remaining: 971ms
478: learn: 0.3350389 total: 891ms remaining: 969ms
479: learn: 0.3349431 total: 893ms remaining: 967ms
480: learn: 0.3348062 total: 895ms remaining: 966ms
481: learn: 0.3346852 total: 896ms remaining: 963ms
482: learn: 0.3343779 total: 898ms remaining: 961ms
483: learn: 0.3342275 total: 901ms remaining: 961ms
484: learn: 0.3341624 total: 903ms remaining: 959ms
485: learn: 0.3339110 total: 906ms remaining: 958ms
486: learn: 0.3338377 total: 908ms remaining: 957ms
487: learn: 0.3336404 total: 911ms remaining: 955ms
488: learn: 0.3335167 total: 913ms remaining: 954ms
489: learn: 0.3334720 total: 914ms remaining: 952ms
490: learn: 0.3333374 total: 916ms remaining: 950ms
491: learn: 0.3332387 total: 919ms remaining: 949ms
492: learn: 0.3330928 total: 920ms remaining: 947ms
493: learn: 0.3329811 total: 922ms remaining: 944ms
494: learn: 0.3328719 total: 924ms remaining: 943ms
495: learn: 0.3327879 total: 926ms remaining: 941ms
496: learn: 0.3326249 total: 929ms remaining: 940ms
497: learn: 0.3325253 total: 931ms remaining: 938ms
498: learn: 0.3324646 total: 933ms remaining: 936ms
499: learn: 0.3322957 total: 935ms remaining: 935ms
500: learn: 0.3322296 total: 936ms remaining: 932ms
501: learn: 0.3321934 total: 937ms remaining: 930ms
502: learn: 0.3320217 total: 939ms remaining: 928ms
503: learn: 0.3319599 total: 941ms remaining: 926ms
504: learn: 0.3319133 total: 944ms remaining: 925ms
505: learn: 0.3318552 total: 945ms remaining: 923ms
506: learn: 0.3317791 total: 947ms remaining: 921ms
507: learn: 0.3316517 total: 950ms remaining: 920ms
508: learn: 0.3315958 total: 952ms remaining: 919ms
509: learn: 0.3314486 total: 956ms remaining: 918ms
510: learn: 0.3313747 total: 957ms remaining: 916ms
511: learn: 0.3312151 total: 961ms remaining: 916ms
512: learn: 0.3309990 total: 964ms remaining: 915ms
513: learn: 0.3309439 total: 967ms remaining: 914ms
514: learn: 0.3306297 total: 969ms remaining: 913ms
515: learn: 0.3306136 total: 972ms remaining: 912ms
516: learn: 0.3305037 total: 975ms remaining: 911ms
517: learn: 0.3303814 total: 980ms remaining: 911ms
518: learn: 0.3302647 total: 983ms remaining: 911ms
519: learn: 0.3301129 total: 984ms remaining: 909ms
520: learn: 0.3300615 total: 990ms remaining: 910ms
```

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521: learn: 0.3299658 total: 991ms remaining: 908ms
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523: learn: 0.3296575 total: 996ms remaining: 905ms
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525: learn: 0.3295064 total: 1s remaining: 905ms
526: learn: 0.3293103 total: 1.01s remaining: 904ms
527: learn: 0.3291750 total: 1.01s remaining: 903ms
528: learn: 0.3291397 total: 1.01s remaining: 902ms
529: learn: 0.3289958 total: 1.01s remaining: 901ms
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531: learn: 0.3289069 total: 1.02s remaining: 898ms
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534: learn: 0.3286498 total: 1.02s remaining: 892ms
535: learn: 0.3286396 total: 1.03s remaining: 889ms
536: learn: 0.3285265 total: 1.03s remaining: 887ms
537: learn: 0.3283293 total: 1.03s remaining: 885ms
538: learn: 0.3282699 total: 1.03s remaining: 883ms
539: learn: 0.3282013 total: 1.03s remaining: 881ms
540: learn: 0.3280743 total: 1.03s remaining: 878ms
541: learn: 0.3279502 total: 1.04s remaining: 876ms
542: learn: 0.3278280 total: 1.04s remaining: 874ms
543: learn: 0.3277828 total: 1.04s remaining: 871ms
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545: learn: 0.3274997 total: 1.04s remaining: 866ms
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547: learn: 0.3273757 total: 1.04s remaining: 862ms
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550: learn: 0.3269635 total: 1.05s remaining: 856ms
551: learn: 0.3268828 total: 1.05s remaining: 854ms
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553: learn: 0.3266768 total: 1.06s remaining: 851ms
554: learn: 0.3265263 total: 1.06s remaining: 849ms
555: learn: 0.3264190 total: 1.06s remaining: 847ms
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558: learn: 0.3262689 total: 1.06s remaining: 840ms
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566: learn: 0.3253277 total: 1.08s remaining: 828ms
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569: learn: 0.3250869 total: 1.09s remaining: 822ms
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574: learn: 0.3246306 total: 1.1s remaining: 813ms
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576: learn: 0.3244593 total: 1.1s remaining: 809ms
577: learn: 0.3243497 total: 1.1s remaining: 807ms
578: learn: 0.3242144 total: 1.11s remaining: 805ms
579: learn: 0.3241780 total: 1.11s remaining: 803ms
580: learn: 0.3241649 total: 1.11s remaining: 800ms
581: learn: 0.3241125 total: 1.11s remaining: 799ms
582: learn: 0.3240451 total: 1.11s remaining: 798ms
583: learn: 0.3239791 total: 1.12s remaining: 796ms
584: learn: 0.3239787 total: 1.12s remaining: 793ms
585: learn: 0.3239009 total: 1.12s remaining: 791ms
586: learn: 0.3237443 total: 1.12s remaining: 789ms
587: learn: 0.3237427 total: 1.12s remaining: 787ms
588: learn: 0.3236262 total: 1.13s remaining: 785ms
589: learn: 0.3236004 total: 1.13s remaining: 783ms
590: learn: 0.3233587 total: 1.13s remaining: 782ms
591: learn: 0.3232687 total: 1.14s remaining: 783ms
592: learn: 0.3230624 total: 1.14s remaining: 782ms
```

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593: learn: 0.3229166 total: 1.14s remaining: 780ms
594: learn: 0.3229072 total: 1.14s remaining: 777ms
595: learn: 0.3227935 total: 1.14s remaining: 775ms
596: learn: 0.3226368 total: 1.15s remaining: 773ms
597: learn: 0.3225367 total: 1.15s remaining: 772ms
598: learn: 0.3224127 total: 1.15s remaining: 770ms
599: learn: 0.3223174 total: 1.15s remaining: 768ms
600: learn: 0.3221358 total: 1.15s remaining: 766ms
601: learn: 0.3220532 total: 1.16s remaining: 764ms
602: learn: 0.3217599 total: 1.16s remaining: 762ms
603: learn: 0.3217237 total: 1.16s remaining: 760ms
604: learn: 0.3216444 total: 1.16s remaining: 757ms
605: learn: 0.3215668 total: 1.16s remaining: 755ms
606: learn: 0.3215262 total: 1.16s remaining: 753ms
607: learn: 0.3213918 total: 1.17s remaining: 752ms
608: learn: 0.3213529 total: 1.17s remaining: 749ms
609: learn: 0.3211989 total: 1.17s remaining: 748ms
610: learn: 0.3211372 total: 1.17s remaining: 747ms
611: learn: 0.3210788 total: 1.17s remaining: 745ms
612: learn: 0.3210327 total: 1.18s remaining: 743ms
613: learn: 0.3209603 total: 1.18s remaining: 741ms
614: learn: 0.3209206 total: 1.18s remaining: 739ms
615: learn: 0.3207530 total: 1.18s remaining: 738ms
616: learn: 0.3206086 total: 1.19s remaining: 736ms
617: learn: 0.3204250 total: 1.19s remaining: 734ms
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621: learn: 0.3201484 total: 1.2s remaining: 728ms
622: learn: 0.3200640 total: 1.2s remaining: 725ms
623: learn: 0.3200088 total: 1.2s remaining: 723ms
624: learn: 0.3199671 total: 1.2s remaining: 722ms
625: learn: 0.3198274 total: 1.2s remaining: 720ms
626: learn: 0.3195650 total: 1.21s remaining: 718ms
627: learn: 0.3195356 total: 1.21s remaining: 716ms
628: learn: 0.3193842 total: 1.21s remaining: 714ms
629: learn: 0.3192979 total: 1.21s remaining: 712ms
630: learn: 0.3192056 total: 1.22s remaining: 711ms
631: learn: 0.3191033 total: 1.22s remaining: 709ms
632: learn: 0.3190247 total: 1.22s remaining: 708ms
633: learn: 0.3189199 total: 1.22s remaining: 706ms
634: learn: 0.3188687 total: 1.22s remaining: 704ms
635: learn: 0.3188398 total: 1.23s remaining: 703ms
636: learn: 0.3188323 total: 1.23s remaining: 702ms
637: learn: 0.3187476 total: 1.23s remaining: 700ms
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648: learn: 0.3176311 total: 1.25s remaining: 678ms
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652: learn: 0.3173272 total: 1.26s remaining: 669ms
653: learn: 0.3173207 total: 1.26s remaining: 667ms
654: learn: 0.3172030 total: 1.26s remaining: 665ms
655: learn: 0.3171169 total: 1.26s remaining: 663ms
656: learn: 0.3170773 total: 1.26s remaining: 661ms
657: learn: 0.3168173 total: 1.27s remaining: 659ms
658: learn: 0.3167726 total: 1.27s remaining: 656ms
659: learn: 0.3167646 total: 1.27s remaining: 654ms
660: learn: 0.3165916 total: 1.27s remaining: 652ms
661: learn: 0.3165893 total: 1.27s remaining: 650ms
662: learn: 0.3165059 total: 1.27s remaining: 648ms
663: learn: 0.3163539 total: 1.28s remaining: 646ms
664: learn: 0.3162496 total: 1.28s remaining: 644ms
```

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665: learn: 0.3160237 total: 1.28s remaining: 642ms
666: learn: 0.3159485 total: 1.28s remaining: 640ms
667: learn: 0.3158230 total: 1.28s remaining: 638ms
668: learn: 0.3157520 total: 1.28s remaining: 636ms
669: learn: 0.3156811 total: 1.29s remaining: 634ms
670: learn: 0.3154506 total: 1.29s remaining: 632ms
671: learn: 0.3153471 total: 1.29s remaining: 630ms
672: learn: 0.3152074 total: 1.29s remaining: 628ms
673: learn: 0.3150496 total: 1.29s remaining: 626ms
674: learn: 0.3148175 total: 1.29s remaining: 624ms
675: learn: 0.3147592 total: 1.3s remaining: 622ms
676: learn: 0.3146747 total: 1.3s remaining: 620ms
677: learn: 0.3145933 total: 1.3s remaining: 617ms
678: learn: 0.3144049 total: 1.3s remaining: 615ms
679: learn: 0.3142546 total: 1.3s remaining: 613ms
680: learn: 0.3142053 total: 1.3s remaining: 611ms
681: learn: 0.3140859 total: 1.31s remaining: 609ms
682: learn: 0.3140203 total: 1.31s remaining: 607ms
683: learn: 0.3139799 total: 1.31s remaining: 605ms
684: learn: 0.3138785 total: 1.31s remaining: 603ms
685: learn: 0.3138022 total: 1.31s remaining: 601ms
686: learn: 0.3136834 total: 1.31s remaining: 599ms
687: learn: 0.3134907 total: 1.32s remaining: 597ms
688: learn: 0.3134194 total: 1.32s remaining: 595ms
689: learn: 0.3132390 total: 1.32s remaining: 593ms
690: learn: 0.3131636 total: 1.32s remaining: 591ms
691: learn: 0.3129625 total: 1.32s remaining: 589ms
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694: learn: 0.3125270 total: 1.33s remaining: 583ms
695: learn: 0.3124279 total: 1.33s remaining: 580ms
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697: learn: 0.3121980 total: 1.33s remaining: 576ms
698: learn: 0.3121152 total: 1.33s remaining: 574ms
699: learn: 0.3120072 total: 1.33s remaining: 572ms
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701: learn: 0.3118530 total: 1.34s remaining: 568ms
702: learn: 0.3117399 total: 1.34s remaining: 566ms
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705: learn: 0.3116253 total: 1.34s remaining: 559ms
706: learn: 0.3115164 total: 1.34s remaining: 557ms
707: learn: 0.3114295 total: 1.35s remaining: 555ms
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709: learn: 0.3113297 total: 1.35s remaining: 551ms
710: learn: 0.3112564 total: 1.35s remaining: 549ms
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718: learn: 0.3103577 total: 1.36s remaining: 532ms
719: learn: 0.3102467 total: 1.36s remaining: 530ms
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721: learn: 0.3100537 total: 1.36s remaining: 526ms
722: learn: 0.3099320 total: 1.37s remaining: 524ms
723: learn: 0.3098830 total: 1.37s remaining: 522ms
724: learn: 0.3095906 total: 1.37s remaining: 520ms
725: learn: 0.3095087 total: 1.37s remaining: 518ms
726: learn: 0.3094062 total: 1.37s remaining: 516ms
727: learn: 0.3093059 total: 1.38s remaining: 514ms
728: learn: 0.3092300 total: 1.38s remaining: 512ms
729: learn: 0.3092047 total: 1.38s remaining: 510ms
730: learn: 0.3091858 total: 1.38s remaining: 508ms
731: learn: 0.3091144 total: 1.38s remaining: 506ms
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733: learn: 0.3086781 total: 1.38s remaining: 502ms
734: learn: 0.3086326 total: 1.39s remaining: 500ms
735: learn: 0.3085422 total: 1.39s remaining: 498ms
736: learn: 0.3084817 total: 1.39s remaining: 496ms
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737: learn: 0.3082591 total: 1.39s remaining: 494ms
738: learn: 0.3082563 total: 1.39s remaining: 491ms
739: learn: 0.3082271 total: 1.39s remaining: 489ms
740: learn: 0.3081235 total: 1.39s remaining: 487ms
741: learn: 0.3080508 total: 1.4s remaining: 485ms
742: learn: 0.3079073 total: 1.4s remaining: 484ms
743: learn: 0.3077208 total: 1.4s remaining: 482ms
744: learn: 0.3074979 total: 1.4s remaining: 480ms
745: learn: 0.3074225 total: 1.4s remaining: 478ms
746: learn: 0.3073579 total: 1.4s remaining: 476ms
747: learn: 0.3072127 total: 1.41s remaining: 474ms
748: learn: 0.3070734 total: 1.41s remaining: 473ms
749: learn: 0.3070230 total: 1.41s remaining: 470ms
750: learn: 0.3069602 total: 1.41s remaining: 469ms
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752: learn: 0.3066708 total: 1.42s remaining: 465ms
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766: learn: 0.3051259 total: 1.44s remaining: 437ms
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769: learn: 0.3049131 total: 1.45s remaining: 432ms
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772: learn: 0.3044281 total: 1.45s remaining: 426ms
773: learn: 0.3042420 total: 1.45s remaining: 424ms
774: learn: 0.3041967 total: 1.45s remaining: 422ms
775: learn: 0.3041593 total: 1.45s remaining: 420ms
776: learn: 0.3040126 total: 1.46s remaining: 418ms
777: learn: 0.3039772 total: 1.46s remaining: 416ms
778: learn: 0.3039179 total: 1.46s remaining: 414ms
779: learn: 0.3038542 total: 1.46s remaining: 412ms
780: learn: 0.3037216 total: 1.46s remaining: 410ms
781: learn: 0.3036516 total: 1.46s remaining: 408ms
782: learn: 0.3035423 total: 1.47s remaining: 406ms
783: learn: 0.3034702 total: 1.47s remaining: 404ms
784: learn: 0.3032681 total: 1.47s remaining: 402ms
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786: learn: 0.3030693 total: 1.47s remaining: 399ms
787: learn: 0.3028731 total: 1.47s remaining: 397ms
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789: learn: 0.3026514 total: 1.48s remaining: 393ms
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791: learn: 0.3024540 total: 1.48s remaining: 389ms
792: learn: 0.3023181 total: 1.48s remaining: 387ms
793: learn: 0.3022240 total: 1.48s remaining: 385ms
794: learn: 0.3021937 total: 1.49s remaining: 383ms
795: learn: 0.3020745 total: 1.49s remaining: 381ms
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797: learn: 0.3019147 total: 1.49s remaining: 378ms
798: learn: 0.3017721 total: 1.49s remaining: 376ms
799: learn: 0.3016191 total: 1.5s remaining: 374ms
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802: learn: 0.3013709 total: 1.5s remaining: 368ms
803: learn: 0.3012858 total: 1.5s remaining: 366ms
804: learn: 0.3011880 total: 1.5s remaining: 364ms
805: learn: 0.3010563 total: 1.5s remaining: 362ms
806: learn: 0.3010468 total: 1.5s remaining: 360ms
807: learn: 0.3009539 total: 1.5s remaining: 358ms
808: learn: 0.3007778 total: 1.51s remaining: 356ms
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809: learn: 0.3006519 total: 1.51s remaining: 354ms
810: learn: 0.3005321 total: 1.51s remaining: 352ms
811: learn: 0.3003811 total: 1.51s remaining: 350ms
812: learn: 0.3003423 total: 1.51s remaining: 348ms
813: learn: 0.3002455 total: 1.51s remaining: 346ms
814: learn: 0.3001416 total: 1.51s remaining: 344ms
815: learn: 0.2999471 total: 1.52s remaining: 342ms
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817: learn: 0.2996196 total: 1.52s remaining: 338ms
818: learn: 0.2995383 total: 1.52s remaining: 336ms
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821: learn: 0.2993254 total: 1.52s remaining: 330ms
822: learn: 0.2992501 total: 1.52s remaining: 328ms
823: learn: 0.2990912 total: 1.52s remaining: 326ms
824: learn: 0.2990560 total: 1.53s remaining: 324ms
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828: learn: 0.2986010 total: 1.53s remaining: 316ms
829: learn: 0.2985017 total: 1.53s remaining: 314ms
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831: learn: 0.2983430 total: 1.54s remaining: 310ms
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833: learn: 0.2980562 total: 1.54s remaining: 306ms
834: learn: 0.2979838 total: 1.54s remaining: 305ms
835: learn: 0.2977779 total: 1.54s remaining: 303ms
836: learn: 0.2976553 total: 1.54s remaining: 301ms
837: learn: 0.2975352 total: 1.55s remaining: 299ms
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844: learn: 0.2968495 total: 1.56s remaining: 286ms
845: learn: 0.2967462 total: 1.56s remaining: 284ms
846: learn: 0.2966814 total: 1.56s remaining: 282ms
847: learn: 0.2965312 total: 1.56s remaining: 280ms
848: learn: 0.2964524 total: 1.56s remaining: 278ms
849: learn: 0.2963922 total: 1.56s remaining: 276ms
850: learn: 0.2963561 total: 1.56s remaining: 274ms
851: learn: 0.2962299 total: 1.56s remaining: 272ms
852: learn: 0.2961641 total: 1.57s remaining: 270ms
853: learn: 0.2960298 total: 1.57s remaining: 268ms
854: learn: 0.2959475 total: 1.57s remaining: 266ms
855: learn: 0.2958681 total: 1.57s remaining: 264ms
856: learn: 0.2957700 total: 1.57s remaining: 262ms
857: learn: 0.2955894 total: 1.57s remaining: 261ms
858: learn: 0.2955153 total: 1.57s remaining: 259ms
859: learn: 0.2954150 total: 1.58s remaining: 257ms
860: learn: 0.2953358 total: 1.58s remaining: 255ms
861: learn: 0.2953057 total: 1.58s remaining: 253ms
862: learn: 0.2950345 total: 1.58s remaining: 251ms
863: learn: 0.2949664 total: 1.58s remaining: 250ms
864: learn: 0.2948592 total: 1.59s remaining: 248ms
865: learn: 0.2947965 total: 1.59s remaining: 246ms
866: learn: 0.2947271 total: 1.59s remaining: 244ms
867: learn: 0.2946599 total: 1.59s remaining: 242ms
868: learn: 0.2944422 total: 1.59s remaining: 240ms
869: learn: 0.2943760 total: 1.59s remaining: 238ms
870: learn: 0.2943345 total: 1.59s remaining: 236ms
871: learn: 0.2941506 total: 1.6s remaining: 234ms
872: learn: 0.2940714 total: 1.6s remaining: 233ms
873: learn: 0.2940029 total: 1.6s remaining: 231ms
874: learn: 0.2939510 total: 1.6s remaining: 229ms
875: learn: 0.2939137 total: 1.6s remaining: 227ms
876: learn: 0.2937939 total: 1.6s remaining: 225ms
877: learn: 0.2936731 total: 1.61s remaining: 223ms
878: learn: 0.2936534 total: 1.61s remaining: 221ms
879: learn: 0.2935863 total: 1.61s remaining: 219ms
880: learn: 0.2935174 total: 1.61s remaining: 217ms
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881: learn: 0.2933392 total: 1.61s remaining: 216ms
882: learn: 0.2932721 total: 1.61s remaining: 214ms
883: learn: 0.2932013 total: 1.61s remaining: 212ms
884: learn: 0.2931583 total: 1.61s remaining: 210ms
885: learn: 0.2931113 total: 1.62s remaining: 208ms
886: learn: 0.2929548 total: 1.62s remaining: 206ms
887: learn: 0.2928591 total: 1.62s remaining: 204ms
888: learn: 0.2927611 total: 1.62s remaining: 202ms
889: learn: 0.2926722 total: 1.62s remaining: 200ms
890: learn: 0.2926166 total: 1.62s remaining: 199ms
891: learn: 0.2924617 total: 1.62s remaining: 197ms
892: learn: 0.2923945 total: 1.63s remaining: 195ms
893: learn: 0.2922313 total: 1.63s remaining: 193ms
894: learn: 0.2921683 total: 1.63s remaining: 191ms
895: learn: 0.2920355 total: 1.63s remaining: 189ms
896: learn: 0.2919873 total: 1.63s remaining: 187ms
897: learn: 0.2919498 total: 1.63s remaining: 186ms
898: learn: 0.2918992 total: 1.63s remaining: 184ms
899: learn: 0.2917453 total: 1.64s remaining: 182ms
900: learn: 0.2916279 total: 1.64s remaining: 180ms
901: learn: 0.2915342 total: 1.64s remaining: 178ms
902: learn: 0.2914526 total: 1.64s remaining: 176ms
903: learn: 0.2914039 total: 1.64s remaining: 174ms
904: learn: 0.2913072 total: 1.64s remaining: 173ms
905: learn: 0.2912691 total: 1.65s remaining: 171ms
906: learn: 0.2911306 total: 1.65s remaining: 169ms
907: learn: 0.2910639 total: 1.65s remaining: 167ms
908: learn: 0.2910040 total: 1.65s remaining: 165ms
909: learn: 0.2909422 total: 1.65s remaining: 163ms
910: learn: 0.2908553 total: 1.65s remaining: 161ms
911: learn: 0.2906955 total: 1.65s remaining: 160ms
912: learn: 0.2906428 total: 1.66s remaining: 158ms
913: learn: 0.2905681 total: 1.66s remaining: 156ms
914: learn: 0.2905027 total: 1.66s remaining: 154ms
915: learn: 0.2904373 total: 1.66s remaining: 152ms
916: learn: 0.2902294 total: 1.66s remaining: 150ms
917: learn: 0.2901991 total: 1.66s remaining: 149ms
918: learn: 0.2901425 total: 1.67s remaining: 147ms
919: learn: 0.2900903 total: 1.67s remaining: 145ms
920: learn: 0.2899985 total: 1.67s remaining: 143ms
921: learn: 0.2898531 total: 1.67s remaining: 141ms
922: learn: 0.2897966 total: 1.67s remaining: 139ms
923: learn: 0.2896399 total: 1.67s remaining: 138ms
924: learn: 0.2895836 total: 1.68s remaining: 136ms
925: learn: 0.2894693 total: 1.68s remaining: 134ms
926: learn: 0.2893584 total: 1.68s remaining: 132ms
927: learn: 0.2893108 total: 1.68s remaining: 130ms
928: learn: 0.2892607 total: 1.68s remaining: 128ms
929: learn: 0.2892009 total: 1.68s remaining: 127ms
930: learn: 0.2890329 total: 1.68s remaining: 125ms
931: learn: 0.2888686 total: 1.69s remaining: 123ms
932: learn: 0.2888301 total: 1.69s remaining: 121ms
933: learn: 0.2887367 total: 1.69s remaining: 119ms
934: learn: 0.2886862 total: 1.69s remaining: 118ms
935: learn: 0.2885696 total: 1.69s remaining: 116ms
936: learn: 0.2883853 total: 1.69s remaining: 114ms
937: learn: 0.2882182 total: 1.7s remaining: 112ms
938: learn: 0.2881587 total: 1.7s remaining: 110ms
939: learn: 0.2879424 total: 1.7s remaining: 108ms
940: learn: 0.2878307 total: 1.7s remaining: 107ms
941: learn: 0.2876648 total: 1.7s remaining: 105ms
942: learn: 0.2875931 total: 1.7s remaining: 103ms
943: learn: 0.2875435 total: 1.7s remaining: 101ms
944: learn: 0.2875103 total: 1.71s remaining: 99.3ms
945: learn: 0.2874394 total: 1.71s remaining: 97.5ms
946: learn: 0.2872882 total: 1.71s remaining: 95.6ms
947: learn: 0.2872233 total: 1.71s remaining: 93.8ms
948: learn: 0.2870986 total: 1.71s remaining: 92ms
949: learn: 0.2870594 total: 1.71s remaining: 90.2ms
950: learn: 0.2869984 total: 1.72s remaining: 88.4ms
951: learn: 0.2869421 total: 1.72s remaining: 86.6ms
952: learn: 0.2868698 total: 1.72s remaining: 84.8ms
```

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953: learn: 0.2868062 total: 1.72s remaining: 82.9ms
954: learn: 0.2867559 total: 1.72s remaining: 81.1ms
955: learn: 0.2866766 total: 1.72s remaining: 79.3ms
956: learn: 0.2865483 total: 1.72s remaining: 77.5ms
957: learn: 0.2864884 total: 1.73s remaining: 75.7ms
958: learn: 0.2864267 total: 1.73s remaining: 73.9ms
959: learn: 0.2863735 total: 1.73s remaining: 72ms
960: learn: 0.2863098 total: 1.73s remaining: 70.2ms
961: learn: 0.2862036 total: 1.73s remaining: 68.4ms
962: learn: 0.2861043 total: 1.73s remaining: 66.6ms
963: learn: 0.2860358 total: 1.73s remaining: 64.8ms
964: learn: 0.2859759 total: 1.74s remaining: 63ms
965: learn: 0.2859279 total: 1.74s remaining: 61.2ms
966: learn: 0.2858955 total: 1.74s remaining: 59.4ms
967: learn: 0.2857737 total: 1.74s remaining: 57.5ms
968: learn: 0.2857152 total: 1.74s remaining: 55.7ms
969: learn: 0.2855650 total: 1.74s remaining: 53.9ms
970: learn: 0.2854894 total: 1.74s remaining: 52.1ms
971: learn: 0.2854424 total: 1.75s remaining: 50.3ms
972: learn: 0.2852592 total: 1.75s remaining: 48.5ms
973: learn: 0.2851799 total: 1.75s remaining: 46.7ms
974: learn: 0.2849984 total: 1.75s remaining: 44.9ms
975: learn: 0.2849321 total: 1.75s remaining: 43.1ms
976: learn: 0.2849136 total: 1.75s remaining: 41.3ms
977: learn: 0.2847643 total: 1.76s remaining: 39.5ms
978: learn: 0.2846474 total: 1.76s remaining: 37.7ms
979: learn: 0.2845011 total: 1.76s remaining: 35.9ms
980: learn: 0.2843430 total: 1.76s remaining: 34.1ms
981: learn: 0.2842028 total: 1.76s remaining: 32.3ms
982: learn: 0.2841577 total: 1.77s remaining: 30.5ms
983: learn: 0.2840650 total: 1.77s remaining: 28.7ms
984: learn: 0.2840147 total: 1.77s remaining: 27ms
985: learn: 0.2839225 total: 1.77s remaining: 25.1ms
986: learn: 0.2838433 total: 1.77s remaining: 23.3ms
987: learn: 0.2838127 total: 1.77s remaining: 21.6ms
988: learn: 0.2837646 total: 1.78s remaining: 19.8ms
989: learn: 0.2837450 total: 1.78s remaining: 18ms
990: learn: 0.2836436 total: 1.78s remaining: 16.2ms
991: learn: 0.2834878 total: 1.78s remaining: 14.4ms
992: learn: 0.2834355 total: 1.78s remaining: 12.6ms
993: learn: 0.2833390 total: 1.78s remaining: 10.8ms
994: learn: 0.2832964 total: 1.78s remaining: 8.96ms
995: learn: 0.2832752 total: 1.78s remaining: 7.17ms
996: learn: 0.2832541 total: 1.78s remaining: 5.37ms
997: learn: 0.2831142 total: 1.79s remaining: 3.58ms
998: learn: 0.2830096 total: 1.79s remaining: 1.79ms
999: learn: 0.2828315 total: 1.79s remaining: 0us
```

Out[33]:

```
<catboost.core.CatBoostClassifier at 0x7f7030221110>
```

In [34]:

```
from sklearn.metrics import confusion_matrix, accuracy_score
y_pred = classifier.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
print(cm)
accuracy_score(y_test, y_pred)
```

```
[[246  20]
 [ 33 119]]
```

Out[34]:

```
0.8732057416267942
```

In [35]:

```
from sklearn.model_selection import cross_val_score
accuracies = cross_val_score(estimator = classifier, X = X_train, y = y_train, cv = 10)
print(f"Accuracy: {accuracies.mean()*100:.2f} %")
```

```
print(f"Standard Deviation: {accuracies.std()*100:.2f} %")
```

```
Learning rate set to 0.009371
0: learn: 0.6866322 total: 1.2ms remaining: 1.2s
1: learn: 0.6803065 total: 4.21ms remaining: 2.1s
2: learn: 0.6739883 total: 5.67ms remaining: 1.89s
3: learn: 0.6684859 total: 6.69ms remaining: 1.67s
4: learn: 0.6638792 total: 7.84ms remaining: 1.56s
5: learn: 0.6582615 total: 8.84ms remaining: 1.46s
6: learn: 0.6519204 total: 10.6ms remaining: 1.5s
7: learn: 0.6472030 total: 11.7ms remaining: 1.44s
8: learn: 0.6417917 total: 12.7ms remaining: 1.4s
9: learn: 0.6366876 total: 13.7ms remaining: 1.36s
10: learn: 0.6310864 total: 14.9ms remaining: 1.34s
11: learn: 0.6264440 total: 16.2ms remaining: 1.33s
12: learn: 0.6206705 total: 17.8ms remaining: 1.35s
13: learn: 0.6162711 total: 19.4ms remaining: 1.36s
14: learn: 0.6117522 total: 20.5ms remaining: 1.35s
15: learn: 0.6066985 total: 21.8ms remaining: 1.34s
16: learn: 0.6021443 total: 23.4ms remaining: 1.35s
17: learn: 0.5978724 total: 25.4ms remaining: 1.38s
18: learn: 0.5936013 total: 27ms remaining: 1.39s
19: learn: 0.5899146 total: 28.4ms remaining: 1.39s
20: learn: 0.5855852 total: 29.9ms remaining: 1.39s
21: learn: 0.5812729 total: 31.3ms remaining: 1.39s
22: learn: 0.5770898 total: 32.3ms remaining: 1.37s
23: learn: 0.5725943 total: 33.5ms remaining: 1.36s
24: learn: 0.5697810 total: 34.4ms remaining: 1.34s
25: learn: 0.5660255 total: 35.4ms remaining: 1.32s
26: learn: 0.5626572 total: 36.2ms remaining: 1.3s
27: learn: 0.5591110 total: 37.3ms remaining: 1.29s
28: learn: 0.5557371 total: 38.3ms remaining: 1.28s
29: learn: 0.5521325 total: 39.7ms remaining: 1.28s
30: learn: 0.5492923 total: 40.3ms remaining: 1.26s
31: learn: 0.5459209 total: 41.2ms remaining: 1.24s
32: learn: 0.5427880 total: 42.4ms remaining: 1.24s
33: learn: 0.5399703 total: 43.6ms remaining: 1.24s
34: learn: 0.5370432 total: 44.9ms remaining: 1.24s
35: learn: 0.5336640 total: 46.3ms remaining: 1.24s
36: learn: 0.5304668 total: 47.6ms remaining: 1.24s
37: learn: 0.5278045 total: 49.1ms remaining: 1.24s
38: learn: 0.5245767 total: 50.9ms remaining: 1.25s
39: learn: 0.5215203 total: 52.1ms remaining: 1.25s
40: learn: 0.5186470 total: 53.8ms remaining: 1.26s
41: learn: 0.5155543 total: 55ms remaining: 1.25s
42: learn: 0.5126405 total: 56.4ms remaining: 1.25s
43: learn: 0.5095484 total: 57.5ms remaining: 1.25s
44: learn: 0.5068655 total: 59.1ms remaining: 1.25s
45: learn: 0.5041593 total: 60.4ms remaining: 1.25s
46: learn: 0.5019132 total: 61.6ms remaining: 1.25s
47: learn: 0.4995020 total: 63.1ms remaining: 1.25s
48: learn: 0.4972458 total: 64.5ms remaining: 1.25s
49: learn: 0.4947412 total: 65.4ms remaining: 1.24s
50: learn: 0.4928500 total: 66.3ms remaining: 1.23s
51: learn: 0.4907150 total: 67.5ms remaining: 1.23s
52: learn: 0.4888831 total: 69ms remaining: 1.23s
53: learn: 0.4866955 total: 70.4ms remaining: 1.23s
54: learn: 0.4846002 total: 71.6ms remaining: 1.23s
55: learn: 0.4827038 total: 73.1ms remaining: 1.23s
56: learn: 0.4807241 total: 74.7ms remaining: 1.24s
57: learn: 0.4786525 total: 76ms remaining: 1.24s
58: learn: 0.4765340 total: 77ms remaining: 1.23s
59: learn: 0.4747017 total: 78.1ms remaining: 1.22s
60: learn: 0.4732239 total: 79ms remaining: 1.22s
61: learn: 0.4716235 total: 80.2ms remaining: 1.21s
62: learn: 0.4702161 total: 81.4ms remaining: 1.21s
63: learn: 0.4681717 total: 82.9ms remaining: 1.21s
64: learn: 0.4667153 total: 84.2ms remaining: 1.21s
65: learn: 0.4650247 total: 85.2ms remaining: 1.21s
66: learn: 0.4633834 total: 86.2ms remaining: 1.2s
67: learn: 0.4614962 total: 87.6ms remaining: 1.2s
68: learn: 0.4596889 total: 89.1ms remaining: 1.2s
```

```
69: learn: 0.4579380 total: 90.3ms remaining: 1.2s
70: learn: 0.4562501 total: 91.5ms remaining: 1.2s
71: learn: 0.4546345 total: 92.6ms remaining: 1.19s
72: learn: 0.4528250 total: 93.9ms remaining: 1.19s
73: learn: 0.4513628 total: 95.5ms remaining: 1.19s
74: learn: 0.4496463 total: 96.7ms remaining: 1.19s
75: learn: 0.4487228 total: 97.5ms remaining: 1.19s
76: learn: 0.4475722 total: 98.7ms remaining: 1.18s
77: learn: 0.4461173 total: 99.9ms remaining: 1.18s
78: learn: 0.4450912 total: 101ms remaining: 1.18s
79: learn: 0.4439088 total: 102ms remaining: 1.18s
80: learn: 0.4426865 total: 103ms remaining: 1.17s
81: learn: 0.4416419 total: 105ms remaining: 1.17s
82: learn: 0.4403391 total: 106ms remaining: 1.17s
83: learn: 0.4392147 total: 107ms remaining: 1.17s
84: learn: 0.4377740 total: 109ms remaining: 1.17s
85: learn: 0.4366312 total: 110ms remaining: 1.17s
86: learn: 0.4353123 total: 111ms remaining: 1.17s
87: learn: 0.4344027 total: 112ms remaining: 1.16s
88: learn: 0.4332683 total: 113ms remaining: 1.16s
89: learn: 0.4323823 total: 114ms remaining: 1.16s
90: learn: 0.4313516 total: 116ms remaining: 1.16s
91: learn: 0.4302779 total: 118ms remaining: 1.17s
92: learn: 0.4292259 total: 120ms remaining: 1.17s
93: learn: 0.4281792 total: 121ms remaining: 1.16s
94: learn: 0.4273854 total: 122ms remaining: 1.16s
95: learn: 0.4269012 total: 123ms remaining: 1.16s
96: learn: 0.4258710 total: 124ms remaining: 1.16s
97: learn: 0.4247411 total: 125ms remaining: 1.15s
98: learn: 0.4235443 total: 127ms remaining: 1.15s
99: learn: 0.4230128 total: 128ms remaining: 1.15s
100: learn: 0.4222130 total: 129ms remaining: 1.15s
101: learn: 0.4215332 total: 130ms remaining: 1.14s
102: learn: 0.4204836 total: 131ms remaining: 1.14s
103: learn: 0.4196412 total: 132ms remaining: 1.13s
104: learn: 0.4187888 total: 133ms remaining: 1.13s
105: learn: 0.4177136 total: 134ms remaining: 1.13s
106: learn: 0.4166967 total: 135ms remaining: 1.13s
107: learn: 0.4158070 total: 136ms remaining: 1.13s
108: learn: 0.4147695 total: 138ms remaining: 1.13s
109: learn: 0.4137975 total: 139ms remaining: 1.13s
110: learn: 0.4135282 total: 140ms remaining: 1.12s
111: learn: 0.4127461 total: 142ms remaining: 1.13s
112: learn: 0.4118141 total: 144ms remaining: 1.13s
113: learn: 0.4111177 total: 145ms remaining: 1.13s
114: learn: 0.4104468 total: 147ms remaining: 1.13s
115: learn: 0.4095775 total: 148ms remaining: 1.13s
116: learn: 0.4089821 total: 149ms remaining: 1.13s
117: learn: 0.4083892 total: 151ms remaining: 1.13s
118: learn: 0.4077234 total: 152ms remaining: 1.13s
119: learn: 0.4069807 total: 154ms remaining: 1.13s
120: learn: 0.4063136 total: 156ms remaining: 1.14s
121: learn: 0.4060685 total: 157ms remaining: 1.13s
122: learn: 0.4058672 total: 158ms remaining: 1.13s
123: learn: 0.4052797 total: 159ms remaining: 1.12s
124: learn: 0.4043669 total: 160ms remaining: 1.12s
125: learn: 0.4037907 total: 162ms remaining: 1.12s
126: learn: 0.4033940 total: 163ms remaining: 1.12s
127: learn: 0.4025375 total: 164ms remaining: 1.12s
128: learn: 0.4019050 total: 166ms remaining: 1.12s
129: learn: 0.4014882 total: 168ms remaining: 1.12s
130: learn: 0.4009411 total: 170ms remaining: 1.12s
131: learn: 0.4007408 total: 170ms remaining: 1.12s
132: learn: 0.4001575 total: 171ms remaining: 1.12s
133: learn: 0.3996032 total: 173ms remaining: 1.11s
134: learn: 0.3992553 total: 175ms remaining: 1.12s
135: learn: 0.3988050 total: 177ms remaining: 1.12s
136: learn: 0.3983379 total: 178ms remaining: 1.12s
137: learn: 0.3976958 total: 180ms remaining: 1.13s
138: learn: 0.3975119 total: 182ms remaining: 1.12s
139: learn: 0.3969703 total: 184ms remaining: 1.13s
140: learn: 0.3964502 total: 188ms remaining: 1.15s
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141: learn: 0.3961132 total: 190ms remaining: 1.15s
142: learn: 0.3955602 total: 191ms remaining: 1.15s
143: learn: 0.3949307 total: 192ms remaining: 1.14s
144: learn: 0.3943661 total: 194ms remaining: 1.14s
145: learn: 0.3939388 total: 195ms remaining: 1.14s
146: learn: 0.3936405 total: 197ms remaining: 1.14s
147: learn: 0.3932092 total: 199ms remaining: 1.14s
148: learn: 0.3926266 total: 200ms remaining: 1.14s
149: learn: 0.3921897 total: 202ms remaining: 1.14s
150: learn: 0.3917564 total: 204ms remaining: 1.15s
151: learn: 0.3913236 total: 206ms remaining: 1.15s
152: learn: 0.3908584 total: 208ms remaining: 1.15s
153: learn: 0.3903747 total: 210ms remaining: 1.15s
154: learn: 0.3899929 total: 211ms remaining: 1.15s
155: learn: 0.3896747 total: 213ms remaining: 1.15s
156: learn: 0.3893785 total: 215ms remaining: 1.15s
157: learn: 0.3887815 total: 216ms remaining: 1.15s
158: learn: 0.3882554 total: 218ms remaining: 1.16s
159: learn: 0.3879066 total: 220ms remaining: 1.16s
160: learn: 0.3875822 total: 223ms remaining: 1.16s
161: learn: 0.3869696 total: 224ms remaining: 1.16s
162: learn: 0.3866313 total: 226ms remaining: 1.16s
163: learn: 0.3863481 total: 228ms remaining: 1.16s
164: learn: 0.3861564 total: 230ms remaining: 1.16s
165: learn: 0.3858392 total: 231ms remaining: 1.16s
166: learn: 0.3853665 total: 233ms remaining: 1.16s
167: learn: 0.3851750 total: 236ms remaining: 1.17s
168: learn: 0.3848141 total: 238ms remaining: 1.17s
169: learn: 0.3844109 total: 240ms remaining: 1.17s
170: learn: 0.3840028 total: 242ms remaining: 1.18s
171: learn: 0.3837175 total: 245ms remaining: 1.18s
172: learn: 0.3832148 total: 247ms remaining: 1.18s
173: learn: 0.3826484 total: 250ms remaining: 1.19s
174: learn: 0.3822705 total: 252ms remaining: 1.19s
175: learn: 0.3818100 total: 254ms remaining: 1.19s
176: learn: 0.3813446 total: 256ms remaining: 1.19s
177: learn: 0.3810717 total: 258ms remaining: 1.19s
178: learn: 0.3808430 total: 260ms remaining: 1.19s
179: learn: 0.3803467 total: 261ms remaining: 1.19s
180: learn: 0.3802742 total: 263ms remaining: 1.19s
181: learn: 0.3800433 total: 264ms remaining: 1.19s
182: learn: 0.3797597 total: 265ms remaining: 1.18s
183: learn: 0.3795312 total: 267ms remaining: 1.18s
184: learn: 0.3792701 total: 268ms remaining: 1.18s
185: learn: 0.3788085 total: 271ms remaining: 1.19s
186: learn: 0.3784719 total: 272ms remaining: 1.18s
187: learn: 0.3783212 total: 274ms remaining: 1.18s
188: learn: 0.3780417 total: 275ms remaining: 1.18s
189: learn: 0.3778619 total: 277ms remaining: 1.18s
190: learn: 0.3775157 total: 278ms remaining: 1.18s
191: learn: 0.3771838 total: 281ms remaining: 1.18s
192: learn: 0.3769274 total: 283ms remaining: 1.18s
193: learn: 0.3766188 total: 284ms remaining: 1.18s
194: learn: 0.3764193 total: 287ms remaining: 1.19s
195: learn: 0.3763317 total: 289ms remaining: 1.19s
196: learn: 0.3761650 total: 292ms remaining: 1.19s
197: learn: 0.3756757 total: 295ms remaining: 1.2s
198: learn: 0.3753414 total: 297ms remaining: 1.19s
199: learn: 0.3749921 total: 298ms remaining: 1.19s
200: learn: 0.3746942 total: 300ms remaining: 1.19s
201: learn: 0.3743830 total: 302ms remaining: 1.19s
202: learn: 0.3742207 total: 304ms remaining: 1.19s
203: learn: 0.3737661 total: 306ms remaining: 1.19s
204: learn: 0.3735647 total: 308ms remaining: 1.2s
205: learn: 0.3731977 total: 310ms remaining: 1.19s
206: learn: 0.3730039 total: 311ms remaining: 1.19s
207: learn: 0.3727289 total: 314ms remaining: 1.2s
208: learn: 0.3724378 total: 316ms remaining: 1.19s
209: learn: 0.3721981 total: 317ms remaining: 1.19s
210: learn: 0.3719212 total: 320ms remaining: 1.2s
211: learn: 0.3717674 total: 321ms remaining: 1.19s
212: learn: 0.3716722 total: 323ms remaining: 1.19s
```

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213: learn: 0.3713092 total: 327ms remaining: 1.2s
214: learn: 0.3709834 total: 328ms remaining: 1.2s
215: learn: 0.3706737 total: 330ms remaining: 1.2s
216: learn: 0.3705502 total: 331ms remaining: 1.19s
217: learn: 0.3703124 total: 333ms remaining: 1.19s
218: learn: 0.3700832 total: 334ms remaining: 1.19s
219: learn: 0.3697619 total: 336ms remaining: 1.19s
220: learn: 0.3693968 total: 338ms remaining: 1.19s
221: learn: 0.3690281 total: 339ms remaining: 1.19s
222: learn: 0.3687856 total: 341ms remaining: 1.19s
223: learn: 0.3685008 total: 345ms remaining: 1.19s
224: learn: 0.3682537 total: 347ms remaining: 1.19s
225: learn: 0.3680167 total: 349ms remaining: 1.19s
226: learn: 0.3675853 total: 351ms remaining: 1.19s
227: learn: 0.3672898 total: 353ms remaining: 1.19s
228: learn: 0.3670515 total: 354ms remaining: 1.19s
229: learn: 0.3669265 total: 357ms remaining: 1.19s
230: learn: 0.3668634 total: 359ms remaining: 1.2s
231: learn: 0.3664694 total: 361ms remaining: 1.2s
232: learn: 0.3662497 total: 363ms remaining: 1.2s
233: learn: 0.3661310 total: 365ms remaining: 1.2s
234: learn: 0.3658097 total: 367ms remaining: 1.19s
235: learn: 0.3657539 total: 368ms remaining: 1.19s
236: learn: 0.3654582 total: 370ms remaining: 1.19s
237: learn: 0.3651339 total: 371ms remaining: 1.19s
238: learn: 0.3648937 total: 373ms remaining: 1.19s
239: learn: 0.3645583 total: 375ms remaining: 1.19s
240: learn: 0.3643508 total: 377ms remaining: 1.19s
241: learn: 0.3640816 total: 380ms remaining: 1.19s
242: learn: 0.3638171 total: 381ms remaining: 1.19s
243: learn: 0.3635370 total: 383ms remaining: 1.19s
244: learn: 0.3632662 total: 384ms remaining: 1.18s
245: learn: 0.3630184 total: 386ms remaining: 1.18s
246: learn: 0.3625362 total: 387ms remaining: 1.18s
247: learn: 0.3624200 total: 389ms remaining: 1.18s
248: learn: 0.3621019 total: 391ms remaining: 1.18s
249: learn: 0.3619688 total: 393ms remaining: 1.18s
250: learn: 0.3616753 total: 396ms remaining: 1.18s
251: learn: 0.3615536 total: 397ms remaining: 1.18s
252: learn: 0.3613944 total: 398ms remaining: 1.18s
253: learn: 0.3612078 total: 400ms remaining: 1.18s
254: learn: 0.3610581 total: 403ms remaining: 1.18s
255: learn: 0.3607842 total: 405ms remaining: 1.18s
256: learn: 0.3606072 total: 406ms remaining: 1.17s
257: learn: 0.3604876 total: 407ms remaining: 1.17s
258: learn: 0.3602884 total: 409ms remaining: 1.17s
259: learn: 0.3602353 total: 412ms remaining: 1.17s
260: learn: 0.3600041 total: 413ms remaining: 1.17s
261: learn: 0.3597466 total: 414ms remaining: 1.17s
262: learn: 0.3594413 total: 416ms remaining: 1.16s
263: learn: 0.3592286 total: 417ms remaining: 1.16s
264: learn: 0.3590810 total: 419ms remaining: 1.16s
265: learn: 0.3587912 total: 421ms remaining: 1.16s
266: learn: 0.3584478 total: 423ms remaining: 1.16s
267: learn: 0.3582100 total: 424ms remaining: 1.16s
268: learn: 0.3581380 total: 426ms remaining: 1.16s
269: learn: 0.3579809 total: 428ms remaining: 1.16s
270: learn: 0.3579250 total: 430ms remaining: 1.16s
271: learn: 0.3576972 total: 432ms remaining: 1.16s
272: learn: 0.3576095 total: 434ms remaining: 1.15s
273: learn: 0.3574268 total: 435ms remaining: 1.15s
274: learn: 0.3572057 total: 436ms remaining: 1.15s
275: learn: 0.3569277 total: 437ms remaining: 1.15s
276: learn: 0.3566909 total: 438ms remaining: 1.14s
277: learn: 0.3564853 total: 439ms remaining: 1.14s
278: learn: 0.3562068 total: 441ms remaining: 1.14s
279: learn: 0.3561070 total: 442ms remaining: 1.14s
280: learn: 0.3559586 total: 443ms remaining: 1.13s
281: learn: 0.3557458 total: 445ms remaining: 1.13s
282: learn: 0.3554378 total: 446ms remaining: 1.13s
283: learn: 0.3551428 total: 447ms remaining: 1.13s
284: learn: 0.3548431 total: 449ms remaining: 1.13s
```

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285: learn: 0.3546940 total: 450ms remaining: 1.12s
286: learn: 0.3545353 total: 452ms remaining: 1.12s
287: learn: 0.3544062 total: 453ms remaining: 1.12s
288: learn: 0.3541948 total: 455ms remaining: 1.12s
289: learn: 0.3537990 total: 456ms remaining: 1.12s
290: learn: 0.3536517 total: 457ms remaining: 1.11s
291: learn: 0.3535799 total: 459ms remaining: 1.11s
292: learn: 0.3533856 total: 461ms remaining: 1.11s
293: learn: 0.3531893 total: 463ms remaining: 1.11s
294: learn: 0.3530907 total: 464ms remaining: 1.11s
295: learn: 0.3529737 total: 466ms remaining: 1.11s
296: learn: 0.3528434 total: 468ms remaining: 1.11s
297: learn: 0.3527790 total: 468ms remaining: 1.1s
298: learn: 0.3526130 total: 470ms remaining: 1.1s
299: learn: 0.3522900 total: 471ms remaining: 1.1s
300: learn: 0.3521331 total: 472ms remaining: 1.1s
301: learn: 0.3519747 total: 473ms remaining: 1.09s
302: learn: 0.3516795 total: 475ms remaining: 1.09s
303: learn: 0.3514939 total: 476ms remaining: 1.09s
304: learn: 0.3513314 total: 477ms remaining: 1.09s
305: learn: 0.3511884 total: 479ms remaining: 1.08s
306: learn: 0.3510266 total: 480ms remaining: 1.08s
307: learn: 0.3508582 total: 482ms remaining: 1.08s
308: learn: 0.3507157 total: 484ms remaining: 1.08s
309: learn: 0.3505746 total: 486ms remaining: 1.08s
310: learn: 0.3505254 total: 487ms remaining: 1.08s
311: learn: 0.3503528 total: 489ms remaining: 1.08s
312: learn: 0.3501979 total: 490ms remaining: 1.08s
313: learn: 0.3500241 total: 492ms remaining: 1.07s
314: learn: 0.3500163 total: 493ms remaining: 1.07s
315: learn: 0.3499458 total: 496ms remaining: 1.07s
316: learn: 0.3499384 total: 497ms remaining: 1.07s
317: learn: 0.3496748 total: 498ms remaining: 1.07s
318: learn: 0.3495031 total: 500ms remaining: 1.07s
319: learn: 0.3494318 total: 502ms remaining: 1.07s
320: learn: 0.3492968 total: 503ms remaining: 1.06s
321: learn: 0.3491933 total: 505ms remaining: 1.06s
322: learn: 0.3488833 total: 506ms remaining: 1.06s
323: learn: 0.3486326 total: 507ms remaining: 1.06s
324: learn: 0.3483697 total: 509ms remaining: 1.06s
325: learn: 0.3481024 total: 510ms remaining: 1.05s
326: learn: 0.3478639 total: 512ms remaining: 1.05s
327: learn: 0.3475913 total: 514ms remaining: 1.05s
328: learn: 0.3474438 total: 515ms remaining: 1.05s
329: learn: 0.3474303 total: 516ms remaining: 1.05s
330: learn: 0.3472574 total: 518ms remaining: 1.05s
331: learn: 0.3471872 total: 519ms remaining: 1.04s
332: learn: 0.3470049 total: 521ms remaining: 1.04s
333: learn: 0.3469766 total: 522ms remaining: 1.04s
334: learn: 0.3469488 total: 523ms remaining: 1.04s
335: learn: 0.3466953 total: 525ms remaining: 1.04s
336: learn: 0.3464754 total: 526ms remaining: 1.03s
337: learn: 0.3463213 total: 527ms remaining: 1.03s
338: learn: 0.3461882 total: 529ms remaining: 1.03s
339: learn: 0.3460671 total: 531ms remaining: 1.03s
340: learn: 0.3458293 total: 532ms remaining: 1.03s
341: learn: 0.3457990 total: 534ms remaining: 1.03s
342: learn: 0.3455172 total: 537ms remaining: 1.03s
343: learn: 0.3452707 total: 538ms remaining: 1.03s
344: learn: 0.3450478 total: 540ms remaining: 1.02s
345: learn: 0.3449413 total: 542ms remaining: 1.02s
346: learn: 0.3447703 total: 544ms remaining: 1.02s
347: learn: 0.3443111 total: 546ms remaining: 1.02s
348: learn: 0.3440413 total: 547ms remaining: 1.02s
349: learn: 0.3437399 total: 551ms remaining: 1.02s
350: learn: 0.3437028 total: 552ms remaining: 1.02s
351: learn: 0.3434590 total: 554ms remaining: 1.02s
352: learn: 0.3433081 total: 556ms remaining: 1.02s
353: learn: 0.3431552 total: 558ms remaining: 1.02s
354: learn: 0.3430410 total: 560ms remaining: 1.02s
355: learn: 0.3429155 total: 561ms remaining: 1.01s
356: learn: 0.3427369 total: 563ms remaining: 1.01s
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357: learn: 0.3425934 total: 564ms remaining: 1.01s
358: learn: 0.3424947 total: 566ms remaining: 1.01s
359: learn: 0.3421736 total: 569ms remaining: 1.01s
360: learn: 0.3420665 total: 571ms remaining: 1.01s
361: learn: 0.3420463 total: 572ms remaining: 1.01s
362: learn: 0.3419774 total: 574ms remaining: 1.01s
363: learn: 0.3416186 total: 576ms remaining: 1.01s
364: learn: 0.3414065 total: 578ms remaining: 1s
365: learn: 0.3412306 total: 580ms remaining: 1s
366: learn: 0.3411431 total: 581ms remaining: 1s
367: learn: 0.3411078 total: 583ms remaining: 1s
368: learn: 0.3409034 total: 584ms remaining: 999ms
369: learn: 0.3406960 total: 586ms remaining: 998ms
370: learn: 0.3405320 total: 588ms remaining: 996ms
371: learn: 0.3404759 total: 589ms remaining: 994ms
372: learn: 0.3402581 total: 591ms remaining: 993ms
373: learn: 0.3399476 total: 593ms remaining: 993ms
374: learn: 0.3398580 total: 595ms remaining: 992ms
375: learn: 0.3396868 total: 597ms remaining: 990ms
376: learn: 0.3395904 total: 599ms remaining: 989ms
377: learn: 0.3394245 total: 600ms remaining: 987ms
378: learn: 0.3392213 total: 602ms remaining: 986ms
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380: learn: 0.3387340 total: 606ms remaining: 984ms
381: learn: 0.3386083 total: 607ms remaining: 982ms
382: learn: 0.3385901 total: 608ms remaining: 979ms
383: learn: 0.3383155 total: 611ms remaining: 981ms
384: learn: 0.3383148 total: 612ms remaining: 978ms
385: learn: 0.3382990 total: 614ms remaining: 976ms
386: learn: 0.3381753 total: 616ms remaining: 976ms
387: learn: 0.3379518 total: 618ms remaining: 975ms
388: learn: 0.3378261 total: 621ms remaining: 975ms
389: learn: 0.3376331 total: 622ms remaining: 973ms
390: learn: 0.3375949 total: 623ms remaining: 971ms
391: learn: 0.3375721 total: 625ms remaining: 969ms
392: learn: 0.3374638 total: 627ms remaining: 969ms
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394: learn: 0.3371747 total: 630ms remaining: 965ms
395: learn: 0.3371344 total: 631ms remaining: 963ms
396: learn: 0.3368887 total: 634ms remaining: 963ms
397: learn: 0.3367477 total: 636ms remaining: 962ms
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400: learn: 0.3360859 total: 642ms remaining: 959ms
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406: learn: 0.3351099 total: 653ms remaining: 951ms
407: learn: 0.3349826 total: 654ms remaining: 950ms
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419: learn: 0.3336327 total: 672ms remaining: 928ms
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426: learn: 0.3326021 total: 683ms remaining: 916ms
427: learn: 0.3324750 total: 684ms remaining: 914ms
428: learn: 0.3321943 total: 685ms remaining: 912ms
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429: learn: 0.3321723 total: 687ms remaining: 910ms
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432: learn: 0.3318406 total: 691ms remaining: 905ms
433: learn: 0.3316162 total: 693ms remaining: 904ms
434: learn: 0.3314323 total: 695ms remaining: 902ms
435: learn: 0.3312320 total: 696ms remaining: 901ms
436: learn: 0.3311416 total: 702ms remaining: 904ms
437: learn: 0.3310296 total: 704ms remaining: 904ms
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439: learn: 0.3305554 total: 711ms remaining: 905ms
440: learn: 0.3303955 total: 714ms remaining: 905ms
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442: learn: 0.3302362 total: 719ms remaining: 904ms
443: learn: 0.3301651 total: 721ms remaining: 902ms
444: learn: 0.3299737 total: 722ms remaining: 901ms
445: learn: 0.3298661 total: 724ms remaining: 899ms
446: learn: 0.3297849 total: 725ms remaining: 897ms
447: learn: 0.3295704 total: 727ms remaining: 896ms
448: learn: 0.3295258 total: 728ms remaining: 894ms
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495: learn: 0.3237390 total: 802ms remaining: 815ms
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497: learn: 0.3235727 total: 805ms remaining: 812ms
498: learn: 0.3234582 total: 806ms remaining: 809ms
499: learn: 0.3232942 total: 808ms remaining: 808ms
500: learn: 0.3232926 total: 808ms remaining: 805ms
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501: learn: 0.3231328 total: 809ms remaining: 803ms
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505: learn: 0.3227333 total: 816ms remaining: 797ms
506: learn: 0.3224301 total: 818ms remaining: 795ms
507: learn: 0.3222942 total: 820ms remaining: 794ms
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563: learn: 0.3154322 total: 902ms remaining: 698ms
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566: learn: 0.3151041 total: 907ms remaining: 692ms
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569: learn: 0.3147742 total: 910ms remaining: 687ms
570: learn: 0.3146759 total: 911ms remaining: 685ms
571: learn: 0.3145189 total: 912ms remaining: 683ms
572: learn: 0.3143916 total: 914ms remaining: 681ms
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577: learn: 0.3138775 total: 920ms remaining: 672ms
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582: learn: 0.3133735 total: 928ms remaining: 664ms
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590: learn: 0.3122804 total: 939ms remaining: 650ms
591: learn: 0.3120824 total: 940ms remaining: 648ms
592: learn: 0.3120316 total: 941ms remaining: 646ms
593: learn: 0.3119752 total: 943ms remaining: 644ms
594: learn: 0.3118622 total: 944ms remaining: 643ms
595: learn: 0.3118081 total: 946ms remaining: 641ms
596: learn: 0.3116264 total: 948ms remaining: 640ms
597: learn: 0.3115762 total: 949ms remaining: 638ms
598: learn: 0.3115035 total: 950ms remaining: 636ms
599: learn: 0.3113209 total: 953ms remaining: 635ms
600: learn: 0.3111960 total: 954ms remaining: 634ms
601: learn: 0.3111183 total: 956ms remaining: 632ms
602: learn: 0.3111025 total: 957ms remaining: 630ms
603: learn: 0.3110438 total: 959ms remaining: 628ms
604: learn: 0.3108982 total: 960ms remaining: 627ms
605: learn: 0.3108797 total: 961ms remaining: 625ms
606: learn: 0.3107920 total: 963ms remaining: 623ms
607: learn: 0.3105974 total: 964ms remaining: 622ms
608: learn: 0.3105504 total: 965ms remaining: 620ms
609: learn: 0.3104059 total: 966ms remaining: 618ms
610: learn: 0.3102284 total: 967ms remaining: 616ms
611: learn: 0.3101427 total: 969ms remaining: 614ms
612: learn: 0.3099327 total: 970ms remaining: 612ms
613: learn: 0.3098653 total: 971ms remaining: 611ms
614: learn: 0.3097481 total: 973ms remaining: 609ms
615: learn: 0.3096660 total: 974ms remaining: 607ms
616: learn: 0.3095560 total: 975ms remaining: 605ms
617: learn: 0.3093713 total: 977ms remaining: 604ms
618: learn: 0.3091435 total: 978ms remaining: 602ms
619: learn: 0.3091152 total: 980ms remaining: 600ms
620: learn: 0.3091070 total: 981ms remaining: 599ms
621: learn: 0.3089394 total: 982ms remaining: 597ms
622: learn: 0.3088834 total: 983ms remaining: 595ms
623: learn: 0.3088365 total: 984ms remaining: 593ms
624: learn: 0.3088003 total: 986ms remaining: 592ms
625: learn: 0.3087053 total: 988ms remaining: 590ms
626: learn: 0.3083841 total: 989ms remaining: 588ms
627: learn: 0.3082674 total: 990ms remaining: 587ms
628: learn: 0.3081226 total: 992ms remaining: 585ms
629: learn: 0.3081000 total: 993ms remaining: 583ms
630: learn: 0.3078544 total: 994ms remaining: 581ms
631: learn: 0.3077416 total: 995ms remaining: 579ms
632: learn: 0.3076313 total: 996ms remaining: 577ms
633: learn: 0.3075711 total: 997ms remaining: 576ms
634: learn: 0.3075414 total: 998ms remaining: 574ms
635: learn: 0.3074773 total: 999ms remaining: 572ms
636: learn: 0.3073793 total: 1s remaining: 570ms
637: learn: 0.3072099 total: 1s remaining: 568ms
638: learn: 0.3071945 total: 1s remaining: 566ms
639: learn: 0.3071283 total: 1s remaining: 564ms
640: learn: 0.3068842 total: 1s remaining: 562ms
641: learn: 0.3068359 total: 1s remaining: 561ms
642: learn: 0.3067282 total: 1.01s remaining: 559ms
643: learn: 0.3066791 total: 1.01s remaining: 557ms
644: learn: 0.3066182 total: 1.01s remaining: 555ms
```

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645: learn: 0.3065482 total: 1.01s remaining: 554ms
646: learn: 0.3065019 total: 1.01s remaining: 552ms
647: learn: 0.3064935 total: 1.01s remaining: 550ms
648: learn: 0.3062924 total: 1.01s remaining: 548ms
649: learn: 0.3062575 total: 1.01s remaining: 547ms
650: learn: 0.3062004 total: 1.02s remaining: 545ms
651: learn: 0.3061190 total: 1.02s remaining: 543ms
652: learn: 0.3059520 total: 1.02s remaining: 542ms
653: learn: 0.3058632 total: 1.02s remaining: 540ms
654: learn: 0.3057670 total: 1.02s remaining: 538ms
655: learn: 0.3057054 total: 1.02s remaining: 537ms
656: learn: 0.3056712 total: 1.02s remaining: 535ms
657: learn: 0.3055745 total: 1.03s remaining: 533ms
658: learn: 0.3055212 total: 1.03s remaining: 532ms
659: learn: 0.3054157 total: 1.03s remaining: 530ms
660: learn: 0.3053240 total: 1.03s remaining: 528ms
661: learn: 0.3051328 total: 1.03s remaining: 527ms
662: learn: 0.3049685 total: 1.03s remaining: 525ms
663: learn: 0.3048958 total: 1.03s remaining: 523ms
664: learn: 0.3048892 total: 1.03s remaining: 521ms
665: learn: 0.3047789 total: 1.03s remaining: 519ms
666: learn: 0.3046645 total: 1.04s remaining: 518ms
667: learn: 0.3046233 total: 1.04s remaining: 516ms
668: learn: 0.3045225 total: 1.04s remaining: 514ms
669: learn: 0.3044311 total: 1.04s remaining: 513ms
670: learn: 0.3042723 total: 1.04s remaining: 511ms
671: learn: 0.3042598 total: 1.04s remaining: 509ms
672: learn: 0.3041180 total: 1.04s remaining: 508ms
673: learn: 0.3039516 total: 1.05s remaining: 507ms
674: learn: 0.3038788 total: 1.05s remaining: 505ms
675: learn: 0.3038375 total: 1.05s remaining: 503ms
676: learn: 0.3037791 total: 1.05s remaining: 502ms
677: learn: 0.3035673 total: 1.05s remaining: 500ms
678: learn: 0.3035075 total: 1.05s remaining: 498ms
679: learn: 0.3032984 total: 1.05s remaining: 497ms
680: learn: 0.3031859 total: 1.06s remaining: 495ms
681: learn: 0.3031242 total: 1.06s remaining: 494ms
682: learn: 0.3028591 total: 1.06s remaining: 492ms
683: learn: 0.3027348 total: 1.06s remaining: 491ms
684: learn: 0.3027054 total: 1.06s remaining: 489ms
685: learn: 0.3025547 total: 1.06s remaining: 487ms
686: learn: 0.3024740 total: 1.07s remaining: 486ms
687: learn: 0.3023980 total: 1.07s remaining: 484ms
688: learn: 0.3023540 total: 1.07s remaining: 483ms
689: learn: 0.3023032 total: 1.07s remaining: 481ms
690: learn: 0.3022274 total: 1.07s remaining: 479ms
691: learn: 0.3021412 total: 1.07s remaining: 478ms
692: learn: 0.3019171 total: 1.07s remaining: 476ms
693: learn: 0.3018094 total: 1.07s remaining: 474ms
694: learn: 0.3017387 total: 1.08s remaining: 473ms
695: learn: 0.3015759 total: 1.08s remaining: 471ms
696: learn: 0.3014899 total: 1.08s remaining: 470ms
697: learn: 0.3012417 total: 1.08s remaining: 468ms
698: learn: 0.3011053 total: 1.08s remaining: 466ms
699: learn: 0.3010041 total: 1.08s remaining: 465ms
700: learn: 0.3009020 total: 1.08s remaining: 463ms
701: learn: 0.3008886 total: 1.09s remaining: 461ms
702: learn: 0.3008117 total: 1.09s remaining: 460ms
703: learn: 0.3006857 total: 1.09s remaining: 458ms
704: learn: 0.3005019 total: 1.09s remaining: 456ms
705: learn: 0.3004494 total: 1.09s remaining: 455ms
706: learn: 0.3002907 total: 1.09s remaining: 453ms
707: learn: 0.3002203 total: 1.09s remaining: 451ms
708: learn: 0.3001166 total: 1.09s remaining: 450ms
709: learn: 0.3000356 total: 1.1s remaining: 448ms
710: learn: 0.2999635 total: 1.1s remaining: 446ms
711: learn: 0.2998404 total: 1.1s remaining: 445ms
712: learn: 0.2996926 total: 1.1s remaining: 443ms
713: learn: 0.2996029 total: 1.1s remaining: 441ms
714: learn: 0.2994514 total: 1.1s remaining: 440ms
715: learn: 0.2993687 total: 1.1s remaining: 438ms
716: learn: 0.2991301 total: 1.11s remaining: 437ms
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717: learn: 0.2990649 total: 1.11s remaining: 435ms
718: learn: 0.2989574 total: 1.11s remaining: 434ms
719: learn: 0.2989077 total: 1.11s remaining: 433ms
720: learn: 0.2987391 total: 1.11s remaining: 431ms
721: learn: 0.2986199 total: 1.11s remaining: 429ms
722: learn: 0.2984683 total: 1.12s remaining: 428ms
723: learn: 0.2983844 total: 1.12s remaining: 426ms
724: learn: 0.2981736 total: 1.12s remaining: 424ms
725: learn: 0.2981322 total: 1.12s remaining: 423ms
726: learn: 0.2980637 total: 1.12s remaining: 421ms
727: learn: 0.2980568 total: 1.12s remaining: 419ms
728: learn: 0.2979685 total: 1.12s remaining: 418ms
729: learn: 0.2978167 total: 1.12s remaining: 416ms
730: learn: 0.2977397 total: 1.13s remaining: 414ms
731: learn: 0.2976106 total: 1.13s remaining: 413ms
732: learn: 0.2975696 total: 1.13s remaining: 411ms
733: learn: 0.2974488 total: 1.13s remaining: 409ms
734: learn: 0.2973692 total: 1.13s remaining: 407ms
735: learn: 0.2972687 total: 1.13s remaining: 406ms
736: learn: 0.2972261 total: 1.13s remaining: 404ms
737: learn: 0.2971150 total: 1.13s remaining: 402ms
738: learn: 0.2968214 total: 1.13s remaining: 401ms
739: learn: 0.2965307 total: 1.14s remaining: 399ms
740: learn: 0.2964236 total: 1.14s remaining: 398ms
741: learn: 0.2963697 total: 1.14s remaining: 396ms
742: learn: 0.2962990 total: 1.14s remaining: 394ms
743: learn: 0.2962043 total: 1.14s remaining: 393ms
744: learn: 0.2961225 total: 1.14s remaining: 391ms
745: learn: 0.2960463 total: 1.14s remaining: 389ms
746: learn: 0.2960067 total: 1.14s remaining: 387ms
747: learn: 0.2959542 total: 1.15s remaining: 386ms
748: learn: 0.2959493 total: 1.15s remaining: 384ms
749: learn: 0.2959276 total: 1.15s remaining: 382ms
750: learn: 0.2958156 total: 1.15s remaining: 381ms
751: learn: 0.2957374 total: 1.15s remaining: 379ms
752: learn: 0.2955956 total: 1.15s remaining: 377ms
753: learn: 0.2953814 total: 1.15s remaining: 376ms
754: learn: 0.2953537 total: 1.15s remaining: 374ms
755: learn: 0.2952402 total: 1.15s remaining: 372ms
756: learn: 0.2950820 total: 1.15s remaining: 371ms
757: learn: 0.2948670 total: 1.16s remaining: 369ms
758: learn: 0.2947803 total: 1.16s remaining: 367ms
759: learn: 0.2947197 total: 1.16s remaining: 366ms
760: learn: 0.2946039 total: 1.16s remaining: 364ms
761: learn: 0.2945752 total: 1.16s remaining: 362ms
762: learn: 0.2944319 total: 1.16s remaining: 361ms
763: learn: 0.2943460 total: 1.16s remaining: 359ms
764: learn: 0.2942851 total: 1.16s remaining: 357ms
765: learn: 0.2941774 total: 1.16s remaining: 356ms
766: learn: 0.2941618 total: 1.17s remaining: 354ms
767: learn: 0.2939876 total: 1.17s remaining: 353ms
768: learn: 0.2939831 total: 1.17s remaining: 351ms
769: learn: 0.2938689 total: 1.17s remaining: 349ms
770: learn: 0.2937455 total: 1.17s remaining: 347ms
771: learn: 0.2936995 total: 1.17s remaining: 346ms
772: learn: 0.2935591 total: 1.17s remaining: 344ms
773: learn: 0.2934833 total: 1.17s remaining: 342ms
774: learn: 0.2933069 total: 1.17s remaining: 341ms
775: learn: 0.2930980 total: 1.18s remaining: 339ms
776: learn: 0.2930874 total: 1.18s remaining: 338ms
777: learn: 0.2930164 total: 1.18s remaining: 336ms
778: learn: 0.2926572 total: 1.18s remaining: 335ms
779: learn: 0.2924504 total: 1.18s remaining: 333ms
780: learn: 0.2923878 total: 1.18s remaining: 331ms
781: learn: 0.2923562 total: 1.18s remaining: 330ms
782: learn: 0.2922628 total: 1.18s remaining: 328ms
783: learn: 0.2921893 total: 1.19s remaining: 327ms
784: learn: 0.2920943 total: 1.19s remaining: 325ms
785: learn: 0.2919710 total: 1.19s remaining: 323ms
786: learn: 0.2919356 total: 1.19s remaining: 322ms
787: learn: 0.2918509 total: 1.19s remaining: 320ms
788: learn: 0.2917015 total: 1.19s remaining: 318ms
```

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789: learn: 0.2915207 total: 1.19s remaining: 317ms
790: learn: 0.2914281 total: 1.19s remaining: 315ms
791: learn: 0.2913673 total: 1.19s remaining: 314ms
792: learn: 0.2911888 total: 1.2s remaining: 312ms
793: learn: 0.2910718 total: 1.2s remaining: 311ms
794: learn: 0.2909448 total: 1.2s remaining: 309ms
795: learn: 0.2909044 total: 1.2s remaining: 308ms
796: learn: 0.2908588 total: 1.2s remaining: 306ms
797: learn: 0.2907182 total: 1.2s remaining: 305ms
798: learn: 0.2905878 total: 1.21s remaining: 303ms
799: learn: 0.2905063 total: 1.21s remaining: 302ms
800: learn: 0.2903410 total: 1.21s remaining: 300ms
801: learn: 0.2902811 total: 1.21s remaining: 299ms
802: learn: 0.2900324 total: 1.21s remaining: 297ms
803: learn: 0.2899300 total: 1.21s remaining: 296ms
804: learn: 0.2898550 total: 1.21s remaining: 294ms
805: learn: 0.2898231 total: 1.22s remaining: 293ms
806: learn: 0.2896795 total: 1.22s remaining: 291ms
807: learn: 0.2894719 total: 1.22s remaining: 289ms
808: learn: 0.2894198 total: 1.22s remaining: 288ms
809: learn: 0.2892519 total: 1.22s remaining: 286ms
810: learn: 0.2892264 total: 1.22s remaining: 285ms
811: learn: 0.2891865 total: 1.22s remaining: 283ms
812: learn: 0.2890588 total: 1.22s remaining: 282ms
813: learn: 0.2889705 total: 1.23s remaining: 280ms
814: learn: 0.2888434 total: 1.23s remaining: 278ms
815: learn: 0.2887027 total: 1.23s remaining: 277ms
816: learn: 0.2885907 total: 1.23s remaining: 275ms
817: learn: 0.2885376 total: 1.23s remaining: 274ms
818: learn: 0.2884375 total: 1.23s remaining: 272ms
819: learn: 0.2881498 total: 1.23s remaining: 271ms
820: learn: 0.2880145 total: 1.24s remaining: 270ms
821: learn: 0.2878122 total: 1.24s remaining: 268ms
822: learn: 0.2877643 total: 1.24s remaining: 267ms
823: learn: 0.2876584 total: 1.24s remaining: 265ms
824: learn: 0.2875905 total: 1.24s remaining: 264ms
825: learn: 0.2875075 total: 1.24s remaining: 262ms
826: learn: 0.2873889 total: 1.25s remaining: 261ms
827: learn: 0.2871846 total: 1.25s remaining: 259ms
828: learn: 0.2870342 total: 1.25s remaining: 257ms
829: learn: 0.2868281 total: 1.25s remaining: 256ms
830: learn: 0.2866526 total: 1.25s remaining: 254ms
831: learn: 0.2865069 total: 1.25s remaining: 253ms
832: learn: 0.2864924 total: 1.25s remaining: 251ms
833: learn: 0.2864554 total: 1.25s remaining: 250ms
834: learn: 0.2864354 total: 1.25s remaining: 248ms
835: learn: 0.2862339 total: 1.26s remaining: 247ms
836: learn: 0.2861806 total: 1.26s remaining: 245ms
837: learn: 0.2860240 total: 1.26s remaining: 243ms
838: learn: 0.2859968 total: 1.26s remaining: 242ms
839: learn: 0.2857884 total: 1.26s remaining: 240ms
840: learn: 0.2857513 total: 1.26s remaining: 239ms
841: learn: 0.2856462 total: 1.26s remaining: 237ms
842: learn: 0.2855481 total: 1.26s remaining: 236ms
843: learn: 0.2855162 total: 1.27s remaining: 234ms
844: learn: 0.2853276 total: 1.27s remaining: 233ms
845: learn: 0.2851740 total: 1.27s remaining: 231ms
846: learn: 0.2850548 total: 1.27s remaining: 230ms
847: learn: 0.2848946 total: 1.27s remaining: 228ms
848: learn: 0.2848223 total: 1.27s remaining: 226ms
849: learn: 0.2847101 total: 1.27s remaining: 225ms
850: learn: 0.2846098 total: 1.27s remaining: 223ms
851: learn: 0.2845077 total: 1.28s remaining: 222ms
852: learn: 0.2842285 total: 1.28s remaining: 220ms
853: learn: 0.2841019 total: 1.28s remaining: 219ms
854: learn: 0.2840764 total: 1.28s remaining: 217ms
855: learn: 0.2840546 total: 1.28s remaining: 215ms
856: learn: 0.2838368 total: 1.28s remaining: 214ms
857: learn: 0.2838193 total: 1.28s remaining: 212ms
858: learn: 0.2837010 total: 1.28s remaining: 211ms
859: learn: 0.2835217 total: 1.28s remaining: 209ms
860: learn: 0.2834199 total: 1.28s remaining: 208ms
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861: learn: 0.2831967 total: 1.29s remaining: 206ms
862: learn: 0.2831550 total: 1.29s remaining: 204ms
863: learn: 0.2830680 total: 1.29s remaining: 203ms
864: learn: 0.2828635 total: 1.29s remaining: 201ms
865: learn: 0.2827492 total: 1.29s remaining: 200ms
866: learn: 0.2826295 total: 1.29s remaining: 198ms
867: learn: 0.2825745 total: 1.29s remaining: 197ms
868: learn: 0.2825204 total: 1.29s remaining: 195ms
869: learn: 0.2824208 total: 1.29s remaining: 194ms
870: learn: 0.2823618 total: 1.3s remaining: 192ms
871: learn: 0.2822951 total: 1.3s remaining: 190ms
872: learn: 0.2821804 total: 1.3s remaining: 189ms
873: learn: 0.2820242 total: 1.3s remaining: 187ms
874: learn: 0.2818408 total: 1.3s remaining: 186ms
875: learn: 0.2817116 total: 1.3s remaining: 184ms
876: learn: 0.2816687 total: 1.3s remaining: 183ms
877: learn: 0.2814069 total: 1.3s remaining: 181ms
878: learn: 0.2812249 total: 1.3s remaining: 180ms
879: learn: 0.2811125 total: 1.3s remaining: 178ms
880: learn: 0.2808448 total: 1.31s remaining: 177ms
881: learn: 0.2806913 total: 1.31s remaining: 175ms
882: learn: 0.2805377 total: 1.31s remaining: 173ms
883: learn: 0.2804730 total: 1.31s remaining: 172ms
884: learn: 0.2804299 total: 1.31s remaining: 170ms
885: learn: 0.2803484 total: 1.31s remaining: 169ms
886: learn: 0.2802840 total: 1.31s remaining: 167ms
887: learn: 0.2802048 total: 1.31s remaining: 166ms
888: learn: 0.2800801 total: 1.32s remaining: 164ms
889: learn: 0.2800525 total: 1.32s remaining: 163ms
890: learn: 0.2798943 total: 1.32s remaining: 161ms
891: learn: 0.2797676 total: 1.32s remaining: 160ms
892: learn: 0.2797320 total: 1.32s remaining: 158ms
893: learn: 0.2796454 total: 1.32s remaining: 157ms
894: learn: 0.2796144 total: 1.32s remaining: 155ms
895: learn: 0.2795875 total: 1.33s remaining: 154ms
896: learn: 0.2794863 total: 1.33s remaining: 152ms
897: learn: 0.2793510 total: 1.33s remaining: 151ms
898: learn: 0.2792927 total: 1.33s remaining: 149ms
899: learn: 0.2792218 total: 1.33s remaining: 148ms
900: learn: 0.2790043 total: 1.33s remaining: 146ms
901: learn: 0.2789263 total: 1.33s remaining: 145ms
902: learn: 0.2788437 total: 1.33s remaining: 143ms
903: learn: 0.2787419 total: 1.34s remaining: 142ms
904: learn: 0.2786998 total: 1.34s remaining: 141ms
905: learn: 0.2785328 total: 1.34s remaining: 139ms
906: learn: 0.2784495 total: 1.34s remaining: 138ms
907: learn: 0.2783789 total: 1.34s remaining: 136ms
908: learn: 0.2781488 total: 1.34s remaining: 135ms
909: learn: 0.2780805 total: 1.35s remaining: 133ms
910: learn: 0.2780132 total: 1.35s remaining: 132ms
911: learn: 0.2778574 total: 1.35s remaining: 130ms
912: learn: 0.2777139 total: 1.35s remaining: 129ms
913: learn: 0.2775946 total: 1.35s remaining: 127ms
914: learn: 0.2774796 total: 1.35s remaining: 126ms
915: learn: 0.2773390 total: 1.35s remaining: 124ms
916: learn: 0.2772602 total: 1.35s remaining: 123ms
917: learn: 0.2772213 total: 1.36s remaining: 121ms
918: learn: 0.2771148 total: 1.36s remaining: 120ms
919: learn: 0.2770238 total: 1.36s remaining: 118ms
920: learn: 0.2769184 total: 1.36s remaining: 117ms
921: learn: 0.2768197 total: 1.36s remaining: 115ms
922: learn: 0.2767077 total: 1.36s remaining: 114ms
923: learn: 0.2765504 total: 1.36s remaining: 112ms
924: learn: 0.2764513 total: 1.36s remaining: 111ms
925: learn: 0.2764073 total: 1.37s remaining: 109ms
926: learn: 0.2763099 total: 1.37s remaining: 108ms
927: learn: 0.2762448 total: 1.37s remaining: 106ms
928: learn: 0.2761309 total: 1.37s remaining: 105ms
929: learn: 0.2761128 total: 1.37s remaining: 103ms
930: learn: 0.2759837 total: 1.37s remaining: 102ms
931: learn: 0.2759300 total: 1.38s remaining: 100ms
932: learn: 0.2758425 total: 1.38s remaining: 99ms
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933: learn: 0.2757389 total: 1.38s remaining: 97.6ms
934: learn: 0.2756831 total: 1.38s remaining: 96.3ms
935: learn: 0.2756318 total: 1.39s remaining: 94.8ms
936: learn: 0.2755359 total: 1.39s remaining: 93.3ms
937: learn: 0.2754243 total: 1.39s remaining: 91.8ms
938: learn: 0.2753836 total: 1.39s remaining: 90.3ms
939: learn: 0.2753634 total: 1.39s remaining: 88.8ms
940: learn: 0.2751481 total: 1.39s remaining: 87.3ms
941: learn: 0.2750398 total: 1.39s remaining: 85.8ms
942: learn: 0.2749574 total: 1.39s remaining: 84.3ms
943: learn: 0.2749185 total: 1.4s remaining: 82.8ms
944: learn: 0.2747569 total: 1.4s remaining: 81.3ms
945: learn: 0.2746904 total: 1.4s remaining: 79.8ms
946: learn: 0.2746389 total: 1.4s remaining: 78.4ms
947: learn: 0.2745153 total: 1.4s remaining: 77ms
948: learn: 0.2743404 total: 1.41s remaining: 75.6ms
949: learn: 0.2742543 total: 1.41s remaining: 74.1ms
950: learn: 0.2741030 total: 1.41s remaining: 72.6ms
951: learn: 0.2740529 total: 1.41s remaining: 71.1ms
952: learn: 0.2739489 total: 1.41s remaining: 69.6ms
953: learn: 0.2739113 total: 1.41s remaining: 68.1ms
954: learn: 0.2738736 total: 1.41s remaining: 66.6ms
955: learn: 0.2738292 total: 1.41s remaining: 65.1ms
956: learn: 0.2737795 total: 1.42s remaining: 63.6ms
957: learn: 0.2736460 total: 1.42s remaining: 62.1ms
958: learn: 0.2735819 total: 1.42s remaining: 60.6ms
959: learn: 0.2734369 total: 1.42s remaining: 59.1ms
960: learn: 0.2733214 total: 1.42s remaining: 57.6ms
961: learn: 0.2731804 total: 1.42s remaining: 56.2ms
962: learn: 0.2731074 total: 1.42s remaining: 54.7ms
963: learn: 0.2729551 total: 1.42s remaining: 53.2ms
964: learn: 0.2727924 total: 1.43s remaining: 51.7ms
965: learn: 0.2727373 total: 1.43s remaining: 50.2ms
966: learn: 0.2726714 total: 1.43s remaining: 48.7ms
967: learn: 0.2726189 total: 1.43s remaining: 47.3ms
968: learn: 0.2725352 total: 1.43s remaining: 45.8ms
969: learn: 0.2724914 total: 1.43s remaining: 44.3ms
970: learn: 0.2723580 total: 1.43s remaining: 42.8ms
971: learn: 0.2723038 total: 1.44s remaining: 41.3ms
972: learn: 0.2722158 total: 1.44s remaining: 39.9ms
973: learn: 0.2720550 total: 1.44s remaining: 38.4ms
974: learn: 0.2719136 total: 1.44s remaining: 36.9ms
975: learn: 0.2718534 total: 1.44s remaining: 35.4ms
976: learn: 0.2717702 total: 1.44s remaining: 34ms
977: learn: 0.2717359 total: 1.44s remaining: 32.5ms
978: learn: 0.2715795 total: 1.45s remaining: 31ms
979: learn: 0.2715041 total: 1.45s remaining: 29.5ms
980: learn: 0.2713354 total: 1.45s remaining: 28ms
981: learn: 0.2711542 total: 1.45s remaining: 26.6ms
982: learn: 0.2711222 total: 1.45s remaining: 25.1ms
983: learn: 0.2708870 total: 1.45s remaining: 23.6ms
984: learn: 0.2708274 total: 1.45s remaining: 22.1ms
985: learn: 0.2706294 total: 1.45s remaining: 20.6ms
986: learn: 0.2705418 total: 1.45s remaining: 19.2ms
987: learn: 0.2704861 total: 1.46s remaining: 17.7ms
988: learn: 0.2703693 total: 1.46s remaining: 16.2ms
989: learn: 0.2701897 total: 1.46s remaining: 14.7ms
990: learn: 0.2699013 total: 1.46s remaining: 13.2ms
991: learn: 0.2698496 total: 1.46s remaining: 11.8ms
992: learn: 0.2696615 total: 1.46s remaining: 10.3ms
993: learn: 0.2694552 total: 1.46s remaining: 8.82ms
994: learn: 0.2694143 total: 1.46s remaining: 7.35ms
995: learn: 0.2693065 total: 1.46s remaining: 5.88ms
996: learn: 0.2692690 total: 1.46s remaining: 4.41ms
997: learn: 0.2691847 total: 1.47s remaining: 2.94ms
998: learn: 0.2691536 total: 1.47s remaining: 1.47ms
999: learn: 0.2690647 total: 1.47s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6868418 total: 1.08ms remaining: 1.08s
1: learn: 0.6833874 total: 2ms remaining: 996ms
2: learn: 0.6778946 total: 3.33ms remaining: 1.1s
3: learn: 0.6722853 total: 4.51ms remaining: 1.12s
```

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4: learn: 0.6661454 total: 5.72ms remaining: 1.14s
5: learn: 0.6609535 total: 6.92ms remaining: 1.15s
6: learn: 0.6563493 total: 7.76ms remaining: 1.1s
7: learn: 0.6504827 total: 8.91ms remaining: 1.1s
8: learn: 0.6453381 total: 10.1ms remaining: 1.12s
9: learn: 0.6401435 total: 11.1ms remaining: 1.1s
10: learn: 0.6347958 total: 12ms remaining: 1.07s
11: learn: 0.6297882 total: 13ms remaining: 1.07s
12: learn: 0.6250768 total: 14ms remaining: 1.06s
13: learn: 0.6198854 total: 14.9ms remaining: 1.05s
14: learn: 0.6149200 total: 16.1ms remaining: 1.05s
15: learn: 0.6103136 total: 17.1ms remaining: 1.05s
16: learn: 0.6064423 total: 18.2ms remaining: 1.05s
17: learn: 0.6025036 total: 19ms remaining: 1.03s
18: learn: 0.5984738 total: 20.4ms remaining: 1.05s
19: learn: 0.5939983 total: 21.8ms remaining: 1.07s
20: learn: 0.5902513 total: 22.8ms remaining: 1.06s
21: learn: 0.5861924 total: 24.7ms remaining: 1.1s
22: learn: 0.5821795 total: 28.1ms remaining: 1.19s
23: learn: 0.5781972 total: 29.5ms remaining: 1.2s
24: learn: 0.5741477 total: 30.8ms remaining: 1.2s
25: learn: 0.5702324 total: 32ms remaining: 1.2s
26: learn: 0.5665443 total: 33.5ms remaining: 1.21s
27: learn: 0.5625390 total: 34.7ms remaining: 1.21s
28: learn: 0.5586521 total: 35.9ms remaining: 1.2s
29: learn: 0.5556757 total: 37.2ms remaining: 1.2s
30: learn: 0.5521075 total: 38.1ms remaining: 1.19s
31: learn: 0.5493518 total: 38.6ms remaining: 1.17s
32: learn: 0.5463005 total: 39.4ms remaining: 1.15s
33: learn: 0.5436384 total: 40.1ms remaining: 1.14s
34: learn: 0.5408573 total: 41ms remaining: 1.13s
35: learn: 0.5377949 total: 41.8ms remaining: 1.12s
36: learn: 0.5355091 total: 42.5ms remaining: 1.1s
37: learn: 0.5322826 total: 43.2ms remaining: 1.09s
38: learn: 0.5294978 total: 44ms remaining: 1.08s
39: learn: 0.5269069 total: 44.8ms remaining: 1.07s
40: learn: 0.5244387 total: 45.5ms remaining: 1.06s
41: learn: 0.5231284 total: 45.9ms remaining: 1.05s
42: learn: 0.5210487 total: 46.7ms remaining: 1.04s
43: learn: 0.5191503 total: 47.2ms remaining: 1.02s
44: learn: 0.5166341 total: 47.9ms remaining: 1.02s
45: learn: 0.5143165 total: 48.8ms remaining: 1.01s
46: learn: 0.5117222 total: 49.5ms remaining: 1s
47: learn: 0.5092299 total: 50.4ms remaining: 999ms
48: learn: 0.5073194 total: 50.9ms remaining: 989ms
49: learn: 0.5048033 total: 51.7ms remaining: 982ms
50: learn: 0.5027922 total: 52.6ms remaining: 978ms
51: learn: 0.5005141 total: 53.3ms remaining: 973ms
52: learn: 0.4983213 total: 54.2ms remaining: 968ms
53: learn: 0.4963725 total: 55ms remaining: 963ms
54: learn: 0.4940487 total: 56.1ms remaining: 964ms
55: learn: 0.4921146 total: 57.2ms remaining: 964ms
56: learn: 0.4902801 total: 58ms remaining: 960ms
57: learn: 0.4884100 total: 58.8ms remaining: 956ms
58: learn: 0.4865410 total: 59.8ms remaining: 954ms
59: learn: 0.4846724 total: 60.7ms remaining: 950ms
60: learn: 0.4823885 total: 61.5ms remaining: 946ms
61: learn: 0.4810172 total: 62.1ms remaining: 940ms
62: learn: 0.4793027 total: 62.9ms remaining: 936ms
63: learn: 0.4771602 total: 64.8ms remaining: 948ms
64: learn: 0.4755174 total: 65.7ms remaining: 945ms
65: learn: 0.4738666 total: 67ms remaining: 949ms
66: learn: 0.4722676 total: 69ms remaining: 961ms
67: learn: 0.4703990 total: 70.3ms remaining: 963ms
68: learn: 0.4692707 total: 71.6ms remaining: 966ms
69: learn: 0.4674791 total: 72.7ms remaining: 966ms
70: learn: 0.4659071 total: 73.8ms remaining: 965ms
71: learn: 0.4641111 total: 75.7ms remaining: 976ms
72: learn: 0.4626425 total: 76.8ms remaining: 975ms
73: learn: 0.4609301 total: 78.1ms remaining: 978ms
74: learn: 0.4594530 total: 79.9ms remaining: 986ms
75: learn: 0.4582145 total: 81.3ms remaining: 988ms
```

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76: learn: 0.4565713 total: 82.4ms remaining: 988ms
77: learn: 0.4551090 total: 83.6ms remaining: 988ms
78: learn: 0.4539982 total: 84.7ms remaining: 988ms
79: learn: 0.4532299 total: 86ms remaining: 989ms
80: learn: 0.4517586 total: 87.3ms remaining: 990ms
81: learn: 0.4508111 total: 88.4ms remaining: 990ms
82: learn: 0.4493661 total: 89.7ms remaining: 991ms
83: learn: 0.4478718 total: 91ms remaining: 992ms
84: learn: 0.4466388 total: 92.5ms remaining: 996ms
85: learn: 0.4456641 total: 93.8ms remaining: 997ms
86: learn: 0.4443949 total: 95.8ms remaining: 1s
87: learn: 0.4433718 total: 97.1ms remaining: 1.01s
88: learn: 0.4421569 total: 98.5ms remaining: 1.01s
89: learn: 0.4412868 total: 100ms remaining: 1.01s
90: learn: 0.4405842 total: 101ms remaining: 1.01s
91: learn: 0.4395914 total: 103ms remaining: 1.01s
92: learn: 0.4385550 total: 104ms remaining: 1.02s
93: learn: 0.4373069 total: 106ms remaining: 1.02s
94: learn: 0.4363303 total: 107ms remaining: 1.02s
95: learn: 0.4351226 total: 108ms remaining: 1.02s
96: learn: 0.4340271 total: 109ms remaining: 1.02s
97: learn: 0.4328179 total: 110ms remaining: 1.01s
98: learn: 0.4321442 total: 112ms remaining: 1.01s
99: learn: 0.4311071 total: 113ms remaining: 1.01s
100: learn: 0.4299818 total: 114ms remaining: 1.02s
101: learn: 0.4291727 total: 115ms remaining: 1.01s
102: learn: 0.4281983 total: 117ms remaining: 1.02s
103: learn: 0.4271798 total: 118ms remaining: 1.01s
104: learn: 0.4261734 total: 119ms remaining: 1.01s
105: learn: 0.4253771 total: 120ms remaining: 1.01s
106: learn: 0.4243168 total: 121ms remaining: 1.01s
107: learn: 0.4235933 total: 122ms remaining: 1.01s
108: learn: 0.4227440 total: 123ms remaining: 1.01s
109: learn: 0.4218945 total: 124ms remaining: 1s
110: learn: 0.4210675 total: 125ms remaining: 1s
111: learn: 0.4201735 total: 126ms remaining: 1s
112: learn: 0.4196209 total: 127ms remaining: 999ms
113: learn: 0.4190704 total: 129ms remaining: 1000ms
114: learn: 0.4183985 total: 130ms remaining: 998ms
115: learn: 0.4176900 total: 131ms remaining: 998ms
116: learn: 0.4168325 total: 132ms remaining: 997ms
117: learn: 0.4161617 total: 133ms remaining: 997ms
118: learn: 0.4154302 total: 135ms remaining: 997ms
119: learn: 0.4149264 total: 136ms remaining: 1s
120: learn: 0.4144560 total: 138ms remaining: 1s
121: learn: 0.4135552 total: 139ms remaining: 1s
122: learn: 0.4129040 total: 140ms remaining: 999ms
123: learn: 0.4121927 total: 141ms remaining: 997ms
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135: learn: 0.4054585 total: 155ms remaining: 985ms
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144: learn: 0.4006418 total: 167ms remaining: 982ms
145: learn: 0.4001213 total: 168ms remaining: 982ms
146: learn: 0.3999533 total: 169ms remaining: 980ms
147: learn: 0.3994422 total: 171ms remaining: 982ms
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148: learn: 0.3988710 total: 172ms remaining: 983ms
149: learn: 0.3986388 total: 173ms remaining: 981ms
150: learn: 0.3980231 total: 174ms remaining: 979ms
151: learn: 0.3972955 total: 176ms remaining: 980ms
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153: learn: 0.3962581 total: 179ms remaining: 985ms
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161: learn: 0.3929828 total: 191ms remaining: 987ms
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217: learn: 0.3778044 total: 274ms remaining: 981ms
218: learn: 0.3775395 total: 275ms remaining: 981ms
219: learn: 0.3773462 total: 276ms remaining: 980ms
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291: learn: 0.3622035 total: 378ms remaining: 917ms
```

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305: learn: 0.3596240 total: 398ms remaining: 902ms
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317: learn: 0.3576395 total: 418ms remaining: 896ms
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363: learn: 0.3518608 total: 482ms remaining: 842ms
```

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364: learn: 0.3517669 total: 484ms remaining: 841ms
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```

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761: learn: 0.3083503 total: 1.11s remaining: 348ms
762: learn: 0.3082835 total: 1.11s remaining: 346ms
763: learn: 0.3081151 total: 1.12s remaining: 345ms
764: learn: 0.3080865 total: 1.12s remaining: 343ms
765: learn: 0.3080647 total: 1.12s remaining: 342ms
766: learn: 0.3078474 total: 1.12s remaining: 340ms
767: learn: 0.3076977 total: 1.12s remaining: 339ms
768: learn: 0.3075684 total: 1.12s remaining: 337ms
769: learn: 0.3075630 total: 1.12s remaining: 336ms
770: learn: 0.3073470 total: 1.13s remaining: 335ms
771: learn: 0.3073402 total: 1.13s remaining: 333ms
772: learn: 0.3072481 total: 1.13s remaining: 331ms
773: learn: 0.3071534 total: 1.13s remaining: 330ms
774: learn: 0.3071475 total: 1.13s remaining: 329ms
775: learn: 0.3070644 total: 1.13s remaining: 327ms
776: learn: 0.3069850 total: 1.14s remaining: 326ms
777: learn: 0.3068374 total: 1.14s remaining: 325ms
778: learn: 0.3066829 total: 1.14s remaining: 323ms
779: learn: 0.3065081 total: 1.14s remaining: 322ms
780: learn: 0.3063827 total: 1.14s remaining: 321ms
781: learn: 0.3063260 total: 1.14s remaining: 319ms
782: learn: 0.3062767 total: 1.15s remaining: 318ms
783: learn: 0.3061996 total: 1.15s remaining: 317ms
784: learn: 0.3060723 total: 1.15s remaining: 315ms
785: learn: 0.3060044 total: 1.15s remaining: 314ms
786: learn: 0.3057455 total: 1.15s remaining: 312ms
787: learn: 0.3055101 total: 1.16s remaining: 311ms
788: learn: 0.3053787 total: 1.16s remaining: 309ms
789: learn: 0.3052472 total: 1.16s remaining: 308ms
790: learn: 0.3051519 total: 1.16s remaining: 306ms
791: learn: 0.3051320 total: 1.16s remaining: 305ms
792: learn: 0.3050632 total: 1.16s remaining: 304ms
793: learn: 0.3049359 total: 1.16s remaining: 302ms
794: learn: 0.3048529 total: 1.17s remaining: 301ms
795: learn: 0.3047631 total: 1.17s remaining: 299ms
```

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796: learn: 0.3047010 total: 1.17s remaining: 298ms
797: learn: 0.3044009 total: 1.17s remaining: 297ms
798: learn: 0.3043068 total: 1.17s remaining: 295ms
799: learn: 0.3042498 total: 1.17s remaining: 294ms
800: learn: 0.3041104 total: 1.18s remaining: 292ms
801: learn: 0.3040273 total: 1.18s remaining: 291ms
802: learn: 0.3039427 total: 1.18s remaining: 289ms
803: learn: 0.3038305 total: 1.18s remaining: 288ms
804: learn: 0.3038048 total: 1.18s remaining: 286ms
805: learn: 0.3037336 total: 1.18s remaining: 285ms
806: learn: 0.3036775 total: 1.18s remaining: 283ms
807: learn: 0.3036166 total: 1.19s remaining: 282ms
808: learn: 0.3034913 total: 1.19s remaining: 281ms
809: learn: 0.3031900 total: 1.19s remaining: 279ms
810: learn: 0.3030939 total: 1.19s remaining: 278ms
811: learn: 0.3030364 total: 1.19s remaining: 276ms
812: learn: 0.3029444 total: 1.2s remaining: 275ms
813: learn: 0.3028750 total: 1.2s remaining: 274ms
814: learn: 0.3027213 total: 1.2s remaining: 272ms
815: learn: 0.3026820 total: 1.2s remaining: 271ms
816: learn: 0.3024962 total: 1.21s remaining: 270ms
817: learn: 0.3023142 total: 1.21s remaining: 268ms
818: learn: 0.3021848 total: 1.21s remaining: 267ms
819: learn: 0.3020710 total: 1.21s remaining: 265ms
820: learn: 0.3019738 total: 1.21s remaining: 264ms
821: learn: 0.3017836 total: 1.21s remaining: 263ms
822: learn: 0.3015686 total: 1.22s remaining: 261ms
823: learn: 0.3014847 total: 1.22s remaining: 260ms
824: learn: 0.3013225 total: 1.22s remaining: 258ms
825: learn: 0.3012674 total: 1.22s remaining: 257ms
826: learn: 0.3011422 total: 1.22s remaining: 256ms
827: learn: 0.3010695 total: 1.23s remaining: 255ms
828: learn: 0.3010081 total: 1.23s remaining: 253ms
829: learn: 0.3009607 total: 1.23s remaining: 252ms
830: learn: 0.3007445 total: 1.23s remaining: 251ms
831: learn: 0.3006440 total: 1.23s remaining: 249ms
832: learn: 0.3005476 total: 1.24s remaining: 248ms
833: learn: 0.3004367 total: 1.24s remaining: 247ms
834: learn: 0.3003403 total: 1.24s remaining: 245ms
835: learn: 0.3002625 total: 1.24s remaining: 244ms
836: learn: 0.3001252 total: 1.24s remaining: 242ms
837: learn: 0.2999111 total: 1.24s remaining: 241ms
838: learn: 0.2998958 total: 1.25s remaining: 239ms
839: learn: 0.2997601 total: 1.25s remaining: 238ms
840: learn: 0.2996241 total: 1.25s remaining: 236ms
841: learn: 0.2995345 total: 1.25s remaining: 235ms
842: learn: 0.2994839 total: 1.25s remaining: 234ms
843: learn: 0.2993149 total: 1.26s remaining: 232ms
844: learn: 0.2992542 total: 1.26s remaining: 231ms
845: learn: 0.2991330 total: 1.26s remaining: 229ms
846: learn: 0.2990931 total: 1.26s remaining: 228ms
847: learn: 0.2990610 total: 1.26s remaining: 226ms
848: learn: 0.2989856 total: 1.26s remaining: 225ms
849: learn: 0.2989287 total: 1.27s remaining: 223ms
850: learn: 0.2987087 total: 1.27s remaining: 222ms
851: learn: 0.2985447 total: 1.27s remaining: 220ms
852: learn: 0.2983882 total: 1.27s remaining: 219ms
853: learn: 0.2983385 total: 1.27s remaining: 218ms
854: learn: 0.2982411 total: 1.27s remaining: 216ms
855: learn: 0.2980020 total: 1.28s remaining: 215ms
856: learn: 0.2979214 total: 1.28s remaining: 213ms
857: learn: 0.2978027 total: 1.28s remaining: 212ms
858: learn: 0.2977069 total: 1.28s remaining: 211ms
859: learn: 0.2976770 total: 1.29s remaining: 209ms
860: learn: 0.2976089 total: 1.29s remaining: 208ms
861: learn: 0.2975461 total: 1.29s remaining: 206ms
862: learn: 0.2974507 total: 1.29s remaining: 205ms
863: learn: 0.2973930 total: 1.29s remaining: 204ms
864: learn: 0.2972231 total: 1.29s remaining: 202ms
865: learn: 0.2971707 total: 1.3s remaining: 201ms
866: learn: 0.2971670 total: 1.3s remaining: 199ms
867: learn: 0.2970287 total: 1.3s remaining: 198ms
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868: learn: 0.2969103 total: 1.3s remaining: 196ms
869: learn: 0.2967943 total: 1.3s remaining: 195ms
870: learn: 0.2967257 total: 1.31s remaining: 194ms
871: learn: 0.2966606 total: 1.31s remaining: 192ms
872: learn: 0.2966424 total: 1.31s remaining: 191ms
873: learn: 0.2965721 total: 1.31s remaining: 189ms
874: learn: 0.2965349 total: 1.31s remaining: 188ms
875: learn: 0.2963904 total: 1.31s remaining: 186ms
876: learn: 0.2962785 total: 1.32s remaining: 185ms
877: learn: 0.2962198 total: 1.32s remaining: 183ms
878: learn: 0.2961770 total: 1.32s remaining: 182ms
879: learn: 0.2960612 total: 1.32s remaining: 180ms
880: learn: 0.2959407 total: 1.32s remaining: 179ms
881: learn: 0.2957673 total: 1.32s remaining: 177ms
882: learn: 0.2955270 total: 1.33s remaining: 176ms
883: learn: 0.2954404 total: 1.33s remaining: 174ms
884: learn: 0.2953545 total: 1.33s remaining: 173ms
885: learn: 0.2952998 total: 1.33s remaining: 171ms
886: learn: 0.2952470 total: 1.33s remaining: 170ms
887: learn: 0.2951666 total: 1.33s remaining: 168ms
888: learn: 0.2950653 total: 1.33s remaining: 167ms
889: learn: 0.2950413 total: 1.34s remaining: 165ms
890: learn: 0.2948183 total: 1.34s remaining: 164ms
891: learn: 0.2947531 total: 1.34s remaining: 162ms
892: learn: 0.2946394 total: 1.34s remaining: 161ms
893: learn: 0.2945581 total: 1.34s remaining: 159ms
894: learn: 0.2944688 total: 1.34s remaining: 158ms
895: learn: 0.2944012 total: 1.35s remaining: 156ms
896: learn: 0.2943247 total: 1.35s remaining: 155ms
897: learn: 0.2942538 total: 1.35s remaining: 153ms
898: learn: 0.2941451 total: 1.35s remaining: 152ms
899: learn: 0.2941096 total: 1.35s remaining: 150ms
900: learn: 0.2940118 total: 1.35s remaining: 149ms
901: learn: 0.2938677 total: 1.35s remaining: 147ms
902: learn: 0.2937800 total: 1.35s remaining: 146ms
903: learn: 0.2936721 total: 1.36s remaining: 144ms
904: learn: 0.2935497 total: 1.36s remaining: 142ms
905: learn: 0.2934461 total: 1.36s remaining: 141ms
906: learn: 0.2933819 total: 1.36s remaining: 139ms
907: learn: 0.2931829 total: 1.36s remaining: 138ms
908: learn: 0.2931316 total: 1.36s remaining: 136ms
909: learn: 0.2930743 total: 1.36s remaining: 135ms
910: learn: 0.2929671 total: 1.36s remaining: 133ms
911: learn: 0.2928893 total: 1.37s remaining: 132ms
912: learn: 0.2928050 total: 1.37s remaining: 130ms
913: learn: 0.2927437 total: 1.37s remaining: 129ms
914: learn: 0.2927033 total: 1.37s remaining: 127ms
915: learn: 0.2926336 total: 1.37s remaining: 126ms
916: learn: 0.2924710 total: 1.37s remaining: 124ms
917: learn: 0.2924142 total: 1.37s remaining: 123ms
918: learn: 0.2921603 total: 1.38s remaining: 121ms
919: learn: 0.2921157 total: 1.38s remaining: 120ms
920: learn: 0.2920531 total: 1.38s remaining: 118ms
921: learn: 0.2918746 total: 1.38s remaining: 117ms
922: learn: 0.2918261 total: 1.38s remaining: 115ms
923: learn: 0.2917249 total: 1.38s remaining: 114ms
924: learn: 0.2914817 total: 1.38s remaining: 112ms
925: learn: 0.2914000 total: 1.38s remaining: 111ms
926: learn: 0.2913319 total: 1.39s remaining: 109ms
927: learn: 0.2912717 total: 1.39s remaining: 108ms
928: learn: 0.2910752 total: 1.39s remaining: 106ms
929: learn: 0.2908186 total: 1.39s remaining: 105ms
930: learn: 0.2907106 total: 1.4s remaining: 103ms
931: learn: 0.2904325 total: 1.4s remaining: 102ms
932: learn: 0.2903959 total: 1.4s remaining: 100ms
933: learn: 0.2902724 total: 1.4s remaining: 99ms
934: learn: 0.2901880 total: 1.4s remaining: 97.5ms
935: learn: 0.2900939 total: 1.4s remaining: 96ms
936: learn: 0.2900030 total: 1.41s remaining: 94.5ms
937: learn: 0.2899455 total: 1.41s remaining: 93.1ms
938: learn: 0.2898986 total: 1.41s remaining: 91.6ms
939: learn: 0.2898511 total: 1.41s remaining: 90.1ms
```

```
940: learn: 0.2897890 total: 1.41s remaining: 88.6ms
941: learn: 0.2896281 total: 1.41s remaining: 87.1ms
942: learn: 0.2895789 total: 1.42s remaining: 85.6ms
943: learn: 0.2893129 total: 1.42s remaining: 84.1ms
944: learn: 0.2891874 total: 1.42s remaining: 82.6ms
945: learn: 0.2889070 total: 1.42s remaining: 81.1ms
946: learn: 0.2888180 total: 1.42s remaining: 79.5ms
947: learn: 0.2887106 total: 1.42s remaining: 78ms
948: learn: 0.2884716 total: 1.42s remaining: 76.5ms
949: learn: 0.2884325 total: 1.43s remaining: 75ms
950: learn: 0.2883896 total: 1.43s remaining: 73.5ms
951: learn: 0.2882227 total: 1.43s remaining: 72ms
952: learn: 0.2881735 total: 1.43s remaining: 70.5ms
953: learn: 0.2881194 total: 1.43s remaining: 69ms
954: learn: 0.2880659 total: 1.43s remaining: 67.4ms
955: learn: 0.2880303 total: 1.43s remaining: 65.9ms
956: learn: 0.2879696 total: 1.43s remaining: 64.4ms
957: learn: 0.2876975 total: 1.44s remaining: 62.9ms
958: learn: 0.2875213 total: 1.44s remaining: 61.4ms
959: learn: 0.2873550 total: 1.44s remaining: 59.9ms
960: learn: 0.2871416 total: 1.44s remaining: 58.4ms
961: learn: 0.2870792 total: 1.44s remaining: 56.9ms
962: learn: 0.2870351 total: 1.44s remaining: 55.4ms
963: learn: 0.2869746 total: 1.44s remaining: 53.9ms
964: learn: 0.2867884 total: 1.44s remaining: 52.4ms
965: learn: 0.2866123 total: 1.45s remaining: 50.9ms
966: learn: 0.2863499 total: 1.45s remaining: 49.4ms
967: learn: 0.2862997 total: 1.45s remaining: 47.9ms
968: learn: 0.2862256 total: 1.45s remaining: 46.4ms
969: learn: 0.2859537 total: 1.45s remaining: 44.9ms
970: learn: 0.2858567 total: 1.45s remaining: 43.4ms
971: learn: 0.2856831 total: 1.46s remaining: 41.9ms
972: learn: 0.2856123 total: 1.46s remaining: 40.4ms
973: learn: 0.2854796 total: 1.46s remaining: 38.9ms
974: learn: 0.2853081 total: 1.46s remaining: 37.4ms
975: learn: 0.2851937 total: 1.46s remaining: 35.9ms
976: learn: 0.2851204 total: 1.46s remaining: 34.4ms
977: learn: 0.2850270 total: 1.46s remaining: 32.9ms
978: learn: 0.2848072 total: 1.47s remaining: 31.4ms
979: learn: 0.2846544 total: 1.47s remaining: 29.9ms
980: learn: 0.2844368 total: 1.47s remaining: 28.4ms
981: learn: 0.2843196 total: 1.47s remaining: 26.9ms
982: learn: 0.2842659 total: 1.47s remaining: 25.5ms
983: learn: 0.2840749 total: 1.48s remaining: 24ms
984: learn: 0.2840184 total: 1.48s remaining: 22.5ms
985: learn: 0.2839150 total: 1.48s remaining: 21ms
986: learn: 0.2838353 total: 1.48s remaining: 19.5ms
987: learn: 0.2837411 total: 1.48s remaining: 18ms
988: learn: 0.2837086 total: 1.48s remaining: 16.5ms
989: learn: 0.2836469 total: 1.49s remaining: 15ms
990: learn: 0.2835199 total: 1.49s remaining: 13.5ms
991: learn: 0.2833446 total: 1.49s remaining: 12ms
992: learn: 0.2832809 total: 1.49s remaining: 10.5ms
993: learn: 0.2832248 total: 1.49s remaining: 9.01ms
994: learn: 0.2831563 total: 1.49s remaining: 7.5ms
995: learn: 0.2830627 total: 1.49s remaining: 6ms
996: learn: 0.2830200 total: 1.5s remaining: 4.5ms
997: learn: 0.2829680 total: 1.5s remaining: 3ms
998: learn: 0.2828122 total: 1.5s remaining: 1.5ms
999: learn: 0.2827593 total: 1.5s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6860795 total: 1.68ms remaining: 1.67s
1: learn: 0.6825128 total: 2.54ms remaining: 1.27s
2: learn: 0.6770645 total: 3.75ms remaining: 1.25s
3: learn: 0.6721612 total: 4.83ms remaining: 1.2s
4: learn: 0.6666992 total: 6.32ms remaining: 1.26s
5: learn: 0.6606907 total: 8.1ms remaining: 1.34s
6: learn: 0.6547051 total: 9.87ms remaining: 1.4s
7: learn: 0.6480684 total: 11.5ms remaining: 1.43s
8: learn: 0.6415801 total: 12.6ms remaining: 1.39s
9: learn: 0.6357469 total: 14ms remaining: 1.39s
10: learn: 0.6304277 total: 15.2ms remaining: 1.37s
```

```
11: learn: 0.6246603 total: 16.3ms remaining: 1.34s
12: learn: 0.6190137 total: 17.5ms remaining: 1.33s
13: learn: 0.6131266 total: 19.5ms remaining: 1.37s
14: learn: 0.6071579 total: 21.5ms remaining: 1.41s
15: learn: 0.6017210 total: 22.9ms remaining: 1.41s
16: learn: 0.5968322 total: 24.6ms remaining: 1.42s
17: learn: 0.5928577 total: 26.1ms remaining: 1.42s
18: learn: 0.5888408 total: 27.5ms remaining: 1.42s
19: learn: 0.5846212 total: 28.9ms remaining: 1.42s
20: learn: 0.5797818 total: 30.3ms remaining: 1.41s
21: learn: 0.5757752 total: 31.8ms remaining: 1.42s
22: learn: 0.5715015 total: 33.3ms remaining: 1.41s
23: learn: 0.5672218 total: 34.6ms remaining: 1.41s
24: learn: 0.5631958 total: 36.1ms remaining: 1.41s
25: learn: 0.5589061 total: 37.3ms remaining: 1.4s
26: learn: 0.5553205 total: 38.7ms remaining: 1.39s
27: learn: 0.5511449 total: 40ms remaining: 1.39s
28: learn: 0.5471993 total: 41.4ms remaining: 1.39s
29: learn: 0.5454261 total: 42ms remaining: 1.36s
30: learn: 0.5419878 total: 43.3ms remaining: 1.35s
31: learn: 0.5377908 total: 44.6ms remaining: 1.35s
32: learn: 0.5339132 total: 45.9ms remaining: 1.34s
33: learn: 0.5301250 total: 47.5ms remaining: 1.35s
34: learn: 0.5268702 total: 48.9ms remaining: 1.35s
35: learn: 0.5237585 total: 50.2ms remaining: 1.34s
36: learn: 0.5200862 total: 51.6ms remaining: 1.34s
37: learn: 0.5170508 total: 53.1ms remaining: 1.34s
38: learn: 0.5140067 total: 54.6ms remaining: 1.34s
39: learn: 0.5107234 total: 55.9ms remaining: 1.34s
40: learn: 0.5081240 total: 57.1ms remaining: 1.33s
41: learn: 0.5048821 total: 58.3ms remaining: 1.33s
42: learn: 0.5035198 total: 59.4ms remaining: 1.32s
43: learn: 0.5008263 total: 60.8ms remaining: 1.32s
44: learn: 0.4985534 total: 62.1ms remaining: 1.32s
45: learn: 0.4971821 total: 63.1ms remaining: 1.31s
46: learn: 0.4945969 total: 64.6ms remaining: 1.31s
47: learn: 0.4925519 total: 65.7ms remaining: 1.3s
48: learn: 0.4898074 total: 66.6ms remaining: 1.29s
49: learn: 0.4872675 total: 67.9ms remaining: 1.29s
50: learn: 0.4855341 total: 68.8ms remaining: 1.28s
51: learn: 0.4828471 total: 70.6ms remaining: 1.29s
52: learn: 0.4801738 total: 72.5ms remaining: 1.29s
53: learn: 0.4780882 total: 74.2ms remaining: 1.3s
54: learn: 0.4760944 total: 75.8ms remaining: 1.3s
55: learn: 0.4737077 total: 77.4ms remaining: 1.3s
56: learn: 0.4710356 total: 78.8ms remaining: 1.3s
57: learn: 0.4690123 total: 80.2ms remaining: 1.3s
58: learn: 0.4665977 total: 81.5ms remaining: 1.3s
59: learn: 0.4644183 total: 82.9ms remaining: 1.3s
60: learn: 0.4624129 total: 84ms remaining: 1.29s
61: learn: 0.4604422 total: 85.3ms remaining: 1.29s
62: learn: 0.4583300 total: 86.7ms remaining: 1.29s
63: learn: 0.4569400 total: 88.5ms remaining: 1.29s
64: learn: 0.4553955 total: 90.2ms remaining: 1.3s
65: learn: 0.4536452 total: 92.4ms remaining: 1.31s
66: learn: 0.4519720 total: 94.4ms remaining: 1.31s
67: learn: 0.4504111 total: 97.2ms remaining: 1.33s
68: learn: 0.4486042 total: 99.5ms remaining: 1.34s
69: learn: 0.4469380 total: 101ms remaining: 1.35s
70: learn: 0.4453658 total: 103ms remaining: 1.35s
71: learn: 0.4435994 total: 106ms remaining: 1.37s
72: learn: 0.4421991 total: 108ms remaining: 1.37s
73: learn: 0.4404996 total: 110ms remaining: 1.38s
74: learn: 0.4389894 total: 112ms remaining: 1.39s
75: learn: 0.4377743 total: 114ms remaining: 1.38s
76: learn: 0.4367359 total: 115ms remaining: 1.37s
77: learn: 0.4352680 total: 116ms remaining: 1.37s
78: learn: 0.4336750 total: 118ms remaining: 1.37s
79: learn: 0.4328281 total: 119ms remaining: 1.37s
80: learn: 0.4317347 total: 121ms remaining: 1.38s
81: learn: 0.4302316 total: 123ms remaining: 1.38s
82: learn: 0.4289272 total: 125ms remaining: 1.38s
```

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83: learn: 0.4276868 total: 127ms remaining: 1.38s
84: learn: 0.4263496 total: 128ms remaining: 1.38s
85: learn: 0.4254075 total: 130ms remaining: 1.38s
86: learn: 0.4242211 total: 131ms remaining: 1.38s
87: learn: 0.4231619 total: 132ms remaining: 1.37s
88: learn: 0.4217015 total: 134ms remaining: 1.37s
89: learn: 0.4205129 total: 135ms remaining: 1.37s
90: learn: 0.4192985 total: 137ms remaining: 1.37s
91: learn: 0.4184090 total: 138ms remaining: 1.36s
92: learn: 0.4173598 total: 140ms remaining: 1.36s
93: learn: 0.4161062 total: 141ms remaining: 1.36s
94: learn: 0.4149122 total: 143ms remaining: 1.36s
95: learn: 0.4141663 total: 145ms remaining: 1.36s
96: learn: 0.4133079 total: 147ms remaining: 1.36s
97: learn: 0.4125216 total: 148ms remaining: 1.36s
98: learn: 0.4114459 total: 149ms remaining: 1.36s
99: learn: 0.4103905 total: 151ms remaining: 1.36s
100: learn: 0.4093429 total: 152ms remaining: 1.35s
101: learn: 0.4085037 total: 154ms remaining: 1.35s
102: learn: 0.4079726 total: 155ms remaining: 1.35s
103: learn: 0.4072811 total: 157ms remaining: 1.35s
104: learn: 0.4060912 total: 158ms remaining: 1.35s
105: learn: 0.4051168 total: 160ms remaining: 1.35s
106: learn: 0.4039841 total: 161ms remaining: 1.35s
107: learn: 0.4029928 total: 163ms remaining: 1.34s
108: learn: 0.4020332 total: 165ms remaining: 1.35s
109: learn: 0.4012082 total: 167ms remaining: 1.35s
110: learn: 0.4004428 total: 168ms remaining: 1.35s
111: learn: 0.3994614 total: 169ms remaining: 1.34s
112: learn: 0.3987680 total: 171ms remaining: 1.34s
113: learn: 0.3979437 total: 173ms remaining: 1.34s
114: learn: 0.3969217 total: 174ms remaining: 1.34s
115: learn: 0.3959563 total: 175ms remaining: 1.33s
116: learn: 0.3952758 total: 177ms remaining: 1.33s
117: learn: 0.3941757 total: 178ms remaining: 1.33s
118: learn: 0.3937334 total: 179ms remaining: 1.32s
119: learn: 0.3931679 total: 180ms remaining: 1.32s
120: learn: 0.3925945 total: 181ms remaining: 1.31s
121: learn: 0.3919132 total: 182ms remaining: 1.31s
122: learn: 0.3912671 total: 183ms remaining: 1.31s
123: learn: 0.3911133 total: 184ms remaining: 1.3s
124: learn: 0.3903095 total: 185ms remaining: 1.3s
125: learn: 0.3894995 total: 187ms remaining: 1.3s
126: learn: 0.3891074 total: 189ms remaining: 1.3s
127: learn: 0.3883532 total: 190ms remaining: 1.29s
128: learn: 0.3875368 total: 191ms remaining: 1.29s
129: learn: 0.3870160 total: 193ms remaining: 1.29s
130: learn: 0.3867589 total: 194ms remaining: 1.29s
131: learn: 0.3859915 total: 195ms remaining: 1.28s
132: learn: 0.3854316 total: 197ms remaining: 1.28s
133: learn: 0.3848916 total: 199ms remaining: 1.29s
134: learn: 0.3841445 total: 202ms remaining: 1.29s
135: learn: 0.3836946 total: 204ms remaining: 1.3s
136: learn: 0.3831142 total: 206ms remaining: 1.29s
137: learn: 0.3827035 total: 207ms remaining: 1.29s
138: learn: 0.3820843 total: 209ms remaining: 1.29s
139: learn: 0.3815097 total: 210ms remaining: 1.29s
140: learn: 0.3810996 total: 212ms remaining: 1.29s
141: learn: 0.3805568 total: 213ms remaining: 1.29s
142: learn: 0.3800337 total: 214ms remaining: 1.28s
143: learn: 0.3795239 total: 216ms remaining: 1.28s
144: learn: 0.3791326 total: 217ms remaining: 1.28s
145: learn: 0.3788559 total: 218ms remaining: 1.28s
146: learn: 0.3784126 total: 220ms remaining: 1.27s
147: learn: 0.3778790 total: 221ms remaining: 1.27s
148: learn: 0.3775409 total: 222ms remaining: 1.27s
149: learn: 0.3774101 total: 223ms remaining: 1.26s
150: learn: 0.3771212 total: 225ms remaining: 1.26s
151: learn: 0.3767939 total: 226ms remaining: 1.26s
152: learn: 0.3759748 total: 227ms remaining: 1.26s
153: learn: 0.3754909 total: 229ms remaining: 1.26s
154: learn: 0.3750440 total: 230ms remaining: 1.26s
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155: learn: 0.3746019 total: 232ms remaining: 1.26s
156: learn: 0.3741414 total: 234ms remaining: 1.25s
157: learn: 0.3734783 total: 236ms remaining: 1.26s
158: learn: 0.3728579 total: 237ms remaining: 1.25s
159: learn: 0.3724079 total: 239ms remaining: 1.25s
160: learn: 0.3718744 total: 240ms remaining: 1.25s
161: learn: 0.3711577 total: 242ms remaining: 1.25s
162: learn: 0.3709923 total: 243ms remaining: 1.25s
163: learn: 0.3705816 total: 244ms remaining: 1.24s
164: learn: 0.3701702 total: 245ms remaining: 1.24s
165: learn: 0.3698175 total: 246ms remaining: 1.24s
166: learn: 0.3692231 total: 247ms remaining: 1.23s
167: learn: 0.3688572 total: 248ms remaining: 1.23s
168: learn: 0.3685875 total: 249ms remaining: 1.23s
169: learn: 0.3682180 total: 251ms remaining: 1.22s
170: learn: 0.3681224 total: 252ms remaining: 1.22s
171: learn: 0.3678333 total: 253ms remaining: 1.22s
172: learn: 0.3673289 total: 255ms remaining: 1.22s
173: learn: 0.3669250 total: 257ms remaining: 1.22s
174: learn: 0.3665201 total: 259ms remaining: 1.22s
175: learn: 0.3660899 total: 261ms remaining: 1.22s
176: learn: 0.3656727 total: 263ms remaining: 1.22s
177: learn: 0.3651208 total: 264ms remaining: 1.22s
178: learn: 0.3646163 total: 265ms remaining: 1.21s
179: learn: 0.3643949 total: 266ms remaining: 1.21s
180: learn: 0.3639610 total: 268ms remaining: 1.21s
181: learn: 0.3635480 total: 269ms remaining: 1.21s
182: learn: 0.3634082 total: 270ms remaining: 1.21s
183: learn: 0.3632767 total: 271ms remaining: 1.2s
184: learn: 0.3631591 total: 272ms remaining: 1.2s
185: learn: 0.3627466 total: 274ms remaining: 1.2s
186: learn: 0.3621819 total: 276ms remaining: 1.2s
187: learn: 0.3620050 total: 277ms remaining: 1.2s
188: learn: 0.3616153 total: 279ms remaining: 1.2s
189: learn: 0.3610531 total: 281ms remaining: 1.2s
190: learn: 0.3608325 total: 283ms remaining: 1.2s
191: learn: 0.3607236 total: 285ms remaining: 1.2s
192: learn: 0.3602966 total: 287ms remaining: 1.2s
193: learn: 0.3600366 total: 289ms remaining: 1.2s
194: learn: 0.3595984 total: 290ms remaining: 1.2s
195: learn: 0.3592531 total: 292ms remaining: 1.2s
196: learn: 0.3588284 total: 293ms remaining: 1.2s
197: learn: 0.3585409 total: 295ms remaining: 1.2s
198: learn: 0.3583414 total: 297ms remaining: 1.2s
199: learn: 0.3580835 total: 299ms remaining: 1.2s
200: learn: 0.3577740 total: 301ms remaining: 1.2s
201: learn: 0.3575618 total: 302ms remaining: 1.19s
202: learn: 0.3571783 total: 304ms remaining: 1.19s
203: learn: 0.3568009 total: 306ms remaining: 1.19s
204: learn: 0.3565674 total: 308ms remaining: 1.19s
205: learn: 0.3565389 total: 309ms remaining: 1.19s
206: learn: 0.3562109 total: 311ms remaining: 1.19s
207: learn: 0.3558501 total: 312ms remaining: 1.19s
208: learn: 0.3556630 total: 314ms remaining: 1.19s
209: learn: 0.3554697 total: 315ms remaining: 1.19s
210: learn: 0.3551979 total: 317ms remaining: 1.19s
211: learn: 0.3549891 total: 318ms remaining: 1.18s
212: learn: 0.3547422 total: 320ms remaining: 1.18s
213: learn: 0.3543705 total: 321ms remaining: 1.18s
214: learn: 0.3541510 total: 322ms remaining: 1.18s
215: learn: 0.3538068 total: 324ms remaining: 1.18s
216: learn: 0.3534025 total: 326ms remaining: 1.18s
217: learn: 0.3531867 total: 327ms remaining: 1.17s
218: learn: 0.3528053 total: 329ms remaining: 1.17s
219: learn: 0.3525677 total: 331ms remaining: 1.17s
220: learn: 0.3522902 total: 333ms remaining: 1.17s
221: learn: 0.3521919 total: 334ms remaining: 1.17s
222: learn: 0.3517633 total: 335ms remaining: 1.17s
223: learn: 0.3514143 total: 337ms remaining: 1.17s
224: learn: 0.3512151 total: 338ms remaining: 1.16s
225: learn: 0.3509984 total: 340ms remaining: 1.17s
226: learn: 0.3507305 total: 344ms remaining: 1.17s
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227: learn: 0.3506005 total: 346ms remaining: 1.17s
228: learn: 0.3502290 total: 348ms remaining: 1.17s
229: learn: 0.3499182 total: 349ms remaining: 1.17s
230: learn: 0.3496389 total: 351ms remaining: 1.17s
231: learn: 0.3493338 total: 353ms remaining: 1.17s
232: learn: 0.3489537 total: 354ms remaining: 1.17s
233: learn: 0.3487059 total: 356ms remaining: 1.16s
234: learn: 0.3486689 total: 357ms remaining: 1.16s
235: learn: 0.3485388 total: 358ms remaining: 1.16s
236: learn: 0.3482920 total: 360ms remaining: 1.16s
237: learn: 0.3480341 total: 362ms remaining: 1.16s
238: learn: 0.3477949 total: 364ms remaining: 1.16s
239: learn: 0.3474135 total: 366ms remaining: 1.16s
240: learn: 0.3470729 total: 368ms remaining: 1.16s
241: learn: 0.3466137 total: 370ms remaining: 1.16s
242: learn: 0.3462297 total: 372ms remaining: 1.16s
243: learn: 0.3459497 total: 374ms remaining: 1.16s
244: learn: 0.3457726 total: 375ms remaining: 1.16s
245: learn: 0.3455828 total: 377ms remaining: 1.15s
246: learn: 0.3454053 total: 378ms remaining: 1.15s
247: learn: 0.3451189 total: 380ms remaining: 1.15s
248: learn: 0.3448943 total: 381ms remaining: 1.15s
249: learn: 0.3445665 total: 383ms remaining: 1.15s
250: learn: 0.3443153 total: 384ms remaining: 1.15s
251: learn: 0.3440418 total: 387ms remaining: 1.15s
252: learn: 0.3437904 total: 389ms remaining: 1.15s
253: learn: 0.3436024 total: 392ms remaining: 1.15s
254: learn: 0.3433207 total: 393ms remaining: 1.15s
255: learn: 0.3429386 total: 394ms remaining: 1.15s
256: learn: 0.3427770 total: 396ms remaining: 1.14s
257: learn: 0.3425724 total: 397ms remaining: 1.14s
258: learn: 0.3423702 total: 398ms remaining: 1.14s
259: learn: 0.3421250 total: 400ms remaining: 1.14s
260: learn: 0.3419244 total: 402ms remaining: 1.14s
261: learn: 0.3417507 total: 403ms remaining: 1.14s
262: learn: 0.3415219 total: 405ms remaining: 1.13s
263: learn: 0.3413714 total: 407ms remaining: 1.13s
264: learn: 0.3411682 total: 409ms remaining: 1.13s
265: learn: 0.3410563 total: 411ms remaining: 1.13s
266: learn: 0.3409828 total: 412ms remaining: 1.13s
267: learn: 0.3405696 total: 414ms remaining: 1.13s
268: learn: 0.3401382 total: 417ms remaining: 1.13s
269: learn: 0.3399628 total: 420ms remaining: 1.14s
270: learn: 0.3397334 total: 422ms remaining: 1.13s
271: learn: 0.3394752 total: 424ms remaining: 1.13s
272: learn: 0.3392392 total: 425ms remaining: 1.13s
273: learn: 0.3390536 total: 427ms remaining: 1.13s
274: learn: 0.3388470 total: 429ms remaining: 1.13s
275: learn: 0.3386272 total: 430ms remaining: 1.13s
276: learn: 0.3385172 total: 433ms remaining: 1.13s
277: learn: 0.3381586 total: 434ms remaining: 1.13s
278: learn: 0.3379066 total: 436ms remaining: 1.13s
279: learn: 0.3377065 total: 437ms remaining: 1.12s
280: learn: 0.3375480 total: 439ms remaining: 1.12s
281: learn: 0.3373350 total: 441ms remaining: 1.12s
282: learn: 0.3370744 total: 444ms remaining: 1.13s
283: learn: 0.3369189 total: 448ms remaining: 1.13s
284: learn: 0.3368346 total: 451ms remaining: 1.13s
285: learn: 0.3367065 total: 454ms remaining: 1.13s
286: learn: 0.3365592 total: 456ms remaining: 1.13s
287: learn: 0.3363947 total: 457ms remaining: 1.13s
288: learn: 0.3361830 total: 459ms remaining: 1.13s
289: learn: 0.3360275 total: 461ms remaining: 1.13s
290: learn: 0.3359621 total: 463ms remaining: 1.13s
291: learn: 0.3358974 total: 464ms remaining: 1.13s
292: learn: 0.3357082 total: 467ms remaining: 1.13s
293: learn: 0.3355019 total: 469ms remaining: 1.13s
294: learn: 0.3352764 total: 470ms remaining: 1.12s
295: learn: 0.3349303 total: 471ms remaining: 1.12s
296: learn: 0.3348056 total: 472ms remaining: 1.12s
297: learn: 0.3345170 total: 474ms remaining: 1.11s
298: learn: 0.3343585 total: 475ms remaining: 1.11s
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299: learn: 0.3342243 total: 477ms remaining: 1.11s
300: learn: 0.3338855 total: 478ms remaining: 1.11s
301: learn: 0.3337727 total: 480ms remaining: 1.11s
302: learn: 0.3336379 total: 482ms remaining: 1.11s
303: learn: 0.3332043 total: 483ms remaining: 1.1s
304: learn: 0.3330151 total: 485ms remaining: 1.1s
305: learn: 0.3328492 total: 486ms remaining: 1.1s
306: learn: 0.3325361 total: 488ms remaining: 1.1s
307: learn: 0.3323218 total: 489ms remaining: 1.1s
308: learn: 0.3321855 total: 490ms remaining: 1.1s
309: learn: 0.3320189 total: 491ms remaining: 1.09s
310: learn: 0.3319374 total: 493ms remaining: 1.09s
311: learn: 0.3317767 total: 495ms remaining: 1.09s
312: learn: 0.3315920 total: 496ms remaining: 1.09s
313: learn: 0.3313368 total: 498ms remaining: 1.09s
314: learn: 0.3310998 total: 499ms remaining: 1.08s
315: learn: 0.3310378 total: 501ms remaining: 1.08s
316: learn: 0.3309613 total: 502ms remaining: 1.08s
317: learn: 0.3307162 total: 504ms remaining: 1.08s
318: learn: 0.3305981 total: 505ms remaining: 1.08s
319: learn: 0.3304723 total: 507ms remaining: 1.08s
320: learn: 0.3302711 total: 508ms remaining: 1.07s
321: learn: 0.3301418 total: 510ms remaining: 1.07s
322: learn: 0.3300093 total: 512ms remaining: 1.07s
323: learn: 0.3299193 total: 515ms remaining: 1.07s
324: learn: 0.3297988 total: 517ms remaining: 1.07s
325: learn: 0.3294677 total: 519ms remaining: 1.07s
326: learn: 0.3293716 total: 520ms remaining: 1.07s
327: learn: 0.3292538 total: 521ms remaining: 1.07s
328: learn: 0.3290900 total: 523ms remaining: 1.06s
329: learn: 0.3289814 total: 525ms remaining: 1.06s
330: learn: 0.3287645 total: 527ms remaining: 1.06s
331: learn: 0.3286772 total: 529ms remaining: 1.06s
332: learn: 0.3284109 total: 530ms remaining: 1.06s
333: learn: 0.3283709 total: 532ms remaining: 1.06s
334: learn: 0.3282256 total: 533ms remaining: 1.06s
335: learn: 0.3280285 total: 535ms remaining: 1.06s
336: learn: 0.3279591 total: 536ms remaining: 1.05s
337: learn: 0.3279313 total: 537ms remaining: 1.05s
338: learn: 0.3277092 total: 537ms remaining: 1.05s
339: learn: 0.3274771 total: 539ms remaining: 1.04s
340: learn: 0.3273365 total: 540ms remaining: 1.04s
341: learn: 0.3271476 total: 542ms remaining: 1.04s
342: learn: 0.3269520 total: 544ms remaining: 1.04s
343: learn: 0.3267345 total: 546ms remaining: 1.04s
344: learn: 0.3265258 total: 548ms remaining: 1.04s
345: learn: 0.3263348 total: 550ms remaining: 1.04s
346: learn: 0.3261881 total: 551ms remaining: 1.04s
347: learn: 0.3260070 total: 552ms remaining: 1.03s
348: learn: 0.3258918 total: 553ms remaining: 1.03s
349: learn: 0.3257926 total: 555ms remaining: 1.03s
350: learn: 0.3256558 total: 556ms remaining: 1.03s
351: learn: 0.3254256 total: 558ms remaining: 1.03s
352: learn: 0.3254127 total: 559ms remaining: 1.02s
353: learn: 0.3253152 total: 560ms remaining: 1.02s
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355: learn: 0.3249056 total: 563ms remaining: 1.02s
356: learn: 0.3246228 total: 564ms remaining: 1.02s
357: learn: 0.3244835 total: 565ms remaining: 1.01s
358: learn: 0.3244077 total: 567ms remaining: 1.01s
359: learn: 0.3242563 total: 569ms remaining: 1.01s
360: learn: 0.3241394 total: 570ms remaining: 1.01s
361: learn: 0.3240343 total: 572ms remaining: 1.01s
362: learn: 0.3239166 total: 573ms remaining: 1.01s
363: learn: 0.3237093 total: 575ms remaining: 1s
364: learn: 0.3235226 total: 577ms remaining: 1s
365: learn: 0.3234770 total: 579ms remaining: 1s
366: learn: 0.3234676 total: 580ms remaining: 1s
367: learn: 0.3232071 total: 582ms remaining: 1s
368: learn: 0.3228963 total: 585ms remaining: 1000ms
369: learn: 0.3226902 total: 586ms remaining: 998ms
370: learn: 0.3225016 total: 588ms remaining: 997ms
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371: learn: 0.3224338 total: 590ms remaining: 995ms
372: learn: 0.3223811 total: 591ms remaining: 993ms
373: learn: 0.3222334 total: 592ms remaining: 990ms
374: learn: 0.3219935 total: 593ms remaining: 989ms
375: learn: 0.3218291 total: 595ms remaining: 987ms
376: learn: 0.3216145 total: 596ms remaining: 985ms
377: learn: 0.3215138 total: 598ms remaining: 984ms
378: learn: 0.3214462 total: 599ms remaining: 982ms
379: learn: 0.3212490 total: 600ms remaining: 980ms
380: learn: 0.3212449 total: 602ms remaining: 978ms
381: learn: 0.3210187 total: 604ms remaining: 977ms
382: learn: 0.3208966 total: 605ms remaining: 975ms
383: learn: 0.3207715 total: 607ms remaining: 973ms
384: learn: 0.3205322 total: 608ms remaining: 971ms
385: learn: 0.3204330 total: 610ms remaining: 970ms
386: learn: 0.3203238 total: 611ms remaining: 968ms
387: learn: 0.3203030 total: 612ms remaining: 966ms
388: learn: 0.3200766 total: 614ms remaining: 964ms
389: learn: 0.3200760 total: 614ms remaining: 961ms
390: learn: 0.3199793 total: 615ms remaining: 958ms
391: learn: 0.3199311 total: 617ms remaining: 957ms
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412: learn: 0.3170739 total: 641ms remaining: 911ms
413: learn: 0.3168890 total: 642ms remaining: 909ms
414: learn: 0.3167169 total: 643ms remaining: 907ms
415: learn: 0.3166541 total: 645ms remaining: 905ms
416: learn: 0.3166121 total: 646ms remaining: 903ms
417: learn: 0.3165474 total: 648ms remaining: 902ms
418: learn: 0.3164012 total: 650ms remaining: 901ms
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420: learn: 0.3160943 total: 652ms remaining: 897ms
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429: learn: 0.3151190 total: 663ms remaining: 878ms
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431: learn: 0.3149161 total: 665ms remaining: 875ms
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437: learn: 0.3141398 total: 675ms remaining: 866ms
438: learn: 0.3139783 total: 677ms remaining: 865ms
439: learn: 0.3139090 total: 678ms remaining: 863ms
440: learn: 0.3137097 total: 680ms remaining: 863ms
441: learn: 0.3135885 total: 682ms remaining: 861ms
442: learn: 0.3134707 total: 683ms remaining: 859ms
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443: learn: 0.3132716 total: 685ms remaining: 858ms
444: learn: 0.3132111 total: 687ms remaining: 856ms
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446: learn: 0.3128904 total: 690ms remaining: 854ms
447: learn: 0.3128163 total: 692ms remaining: 852ms
448: learn: 0.3125495 total: 693ms remaining: 850ms
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450: learn: 0.3124601 total: 696ms remaining: 847ms
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453: learn: 0.3120338 total: 701ms remaining: 844ms
454: learn: 0.3120012 total: 703ms remaining: 842ms
455: learn: 0.3118576 total: 705ms remaining: 841ms
456: learn: 0.3116735 total: 706ms remaining: 839ms
457: learn: 0.3116523 total: 707ms remaining: 837ms
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459: learn: 0.3113916 total: 711ms remaining: 834ms
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483: learn: 0.3088766 total: 752ms remaining: 801ms
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493: learn: 0.3079141 total: 763ms remaining: 782ms
494: learn: 0.3078049 total: 764ms remaining: 780ms
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497: learn: 0.3073722 total: 768ms remaining: 774ms
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504: learn: 0.3068963 total: 775ms remaining: 759ms
505: learn: 0.3068218 total: 776ms remaining: 757ms
506: learn: 0.3066845 total: 777ms remaining: 755ms
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508: learn: 0.3062652 total: 779ms remaining: 752ms
509: learn: 0.3062260 total: 781ms remaining: 750ms
510: learn: 0.3061392 total: 782ms remaining: 749ms
511: learn: 0.3060575 total: 784ms remaining: 747ms
512: learn: 0.3059854 total: 785ms remaining: 745ms
513: learn: 0.3058018 total: 787ms remaining: 744ms
514: learn: 0.3055208 total: 788ms remaining: 742ms
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519: learn: 0.3049613 total: 794ms remaining: 733ms
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521: learn: 0.3047799 total: 797ms remaining: 730ms
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584: learn: 0.2982515 total: 881ms remaining: 625ms
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586: learn: 0.2980607 total: 884ms remaining: 622ms
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656: learn: 0.2896104 total: 974ms remaining: 508ms
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658: learn: 0.2892451 total: 981ms remaining: 508ms
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686: learn: 0.2861133 total: 1.02s remaining: 466ms
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726: learn: 0.2820397 total: 1.07s remaining: 403ms
727: learn: 0.2817383 total: 1.07s remaining: 402ms
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730: learn: 0.2815564 total: 1.08s remaining: 397ms
```

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733: learn: 0.2811799 total: 1.08s remaining: 393ms
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741: learn: 0.2805576 total: 1.09s remaining: 381ms
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743: learn: 0.2802351 total: 1.1s remaining: 378ms
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746: learn: 0.2798645 total: 1.1s remaining: 374ms
747: learn: 0.2797603 total: 1.1s remaining: 372ms
748: learn: 0.2797375 total: 1.1s remaining: 371ms
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793: learn: 0.2752080 total: 1.17s remaining: 304ms
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802: learn: 0.2743425 total: 1.18s remaining: 290ms
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810: learn: 0.2737891 total: 1.19s remaining: 278ms
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867: learn: 0.2667032 total: 1.27s remaining: 194ms
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873: learn: 0.2661134 total: 1.28s remaining: 185ms
874: learn: 0.2660423 total: 1.28s remaining: 183ms
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881: learn: 0.2654156 total: 1.29s remaining: 173ms
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885: learn: 0.2647559 total: 1.3s remaining: 167ms
886: learn: 0.2646905 total: 1.3s remaining: 166ms
887: learn: 0.2646252 total: 1.3s remaining: 164ms
888: learn: 0.2645481 total: 1.3s remaining: 163ms
889: learn: 0.2644449 total: 1.3s remaining: 161ms
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891: learn: 0.2642010 total: 1.31s remaining: 158ms
892: learn: 0.2641257 total: 1.31s remaining: 157ms
893: learn: 0.2640613 total: 1.31s remaining: 155ms
894: learn: 0.2640124 total: 1.31s remaining: 154ms
895: learn: 0.2639418 total: 1.31s remaining: 153ms
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903: learn: 0.2631354 total: 1.33s remaining: 141ms
904: learn: 0.2630300 total: 1.33s remaining: 140ms
905: learn: 0.2629026 total: 1.33s remaining: 138ms
906: learn: 0.2628470 total: 1.33s remaining: 137ms
907: learn: 0.2627739 total: 1.33s remaining: 135ms
908: learn: 0.2627476 total: 1.34s remaining: 134ms
909: learn: 0.2626821 total: 1.34s remaining: 132ms
910: learn: 0.2625217 total: 1.34s remaining: 131ms
911: learn: 0.2623633 total: 1.34s remaining: 129ms
912: learn: 0.2621384 total: 1.34s remaining: 128ms
913: learn: 0.2619527 total: 1.34s remaining: 126ms
914: learn: 0.2618972 total: 1.34s remaining: 125ms
915: learn: 0.2618482 total: 1.35s remaining: 124ms
916: learn: 0.2617493 total: 1.35s remaining: 122ms
917: learn: 0.2616616 total: 1.35s remaining: 121ms
918: learn: 0.2614796 total: 1.35s remaining: 119ms
919: learn: 0.2613763 total: 1.35s remaining: 118ms
920: learn: 0.2612861 total: 1.35s remaining: 116ms
921: learn: 0.2612209 total: 1.36s remaining: 115ms
922: learn: 0.2610377 total: 1.36s remaining: 113ms
923: learn: 0.2608211 total: 1.36s remaining: 112ms
924: learn: 0.2607228 total: 1.36s remaining: 110ms
925: learn: 0.2606500 total: 1.36s remaining: 109ms
926: learn: 0.2604062 total: 1.36s remaining: 107ms
927: learn: 0.2603254 total: 1.36s remaining: 106ms
928: learn: 0.2602210 total: 1.36s remaining: 104ms
929: learn: 0.2601499 total: 1.37s remaining: 103ms
930: learn: 0.2600742 total: 1.37s remaining: 101ms
931: learn: 0.2600229 total: 1.37s remaining: 99.9ms
932: learn: 0.2599363 total: 1.37s remaining: 98.4ms
933: learn: 0.2597528 total: 1.37s remaining: 96.9ms
934: learn: 0.2596486 total: 1.37s remaining: 95.4ms
935: learn: 0.2595467 total: 1.37s remaining: 93.9ms
936: learn: 0.2593437 total: 1.37s remaining: 92.4ms
937: learn: 0.2592454 total: 1.38s remaining: 90.9ms
938: learn: 0.2592037 total: 1.38s remaining: 89.4ms
939: learn: 0.2590798 total: 1.38s remaining: 87.9ms
940: learn: 0.2590192 total: 1.38s remaining: 86.5ms
941: learn: 0.2589500 total: 1.38s remaining: 85ms
942: learn: 0.2588478 total: 1.38s remaining: 83.5ms
943: learn: 0.2587876 total: 1.38s remaining: 82ms
944: learn: 0.2587361 total: 1.38s remaining: 80.5ms
945: learn: 0.2586720 total: 1.38s remaining: 79ms
946: learn: 0.2585971 total: 1.39s remaining: 77.6ms
```

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947: learn: 0.2584505 total: 1.39s remaining: 76.1ms
948: learn: 0.2583782 total: 1.39s remaining: 74.6ms
949: learn: 0.2583316 total: 1.39s remaining: 73.1ms
950: learn: 0.2582815 total: 1.39s remaining: 71.7ms
951: learn: 0.2582235 total: 1.39s remaining: 70.2ms
952: learn: 0.2581374 total: 1.39s remaining: 68.7ms
953: learn: 0.2580774 total: 1.39s remaining: 67.3ms
954: learn: 0.2579877 total: 1.4s remaining: 65.8ms
955: learn: 0.2578873 total: 1.4s remaining: 64.3ms
956: learn: 0.2576836 total: 1.4s remaining: 62.9ms
957: learn: 0.2576176 total: 1.4s remaining: 61.4ms
958: learn: 0.2575534 total: 1.4s remaining: 59.9ms
959: learn: 0.2574655 total: 1.4s remaining: 58.5ms
960: learn: 0.2573293 total: 1.4s remaining: 57ms
961: learn: 0.2571881 total: 1.41s remaining: 55.5ms
962: learn: 0.2570110 total: 1.41s remaining: 54.1ms
963: learn: 0.2567776 total: 1.41s remaining: 52.6ms
964: learn: 0.2567296 total: 1.41s remaining: 51.2ms
965: learn: 0.2565381 total: 1.41s remaining: 49.7ms
966: learn: 0.2564701 total: 1.41s remaining: 48.3ms
967: learn: 0.2564172 total: 1.42s remaining: 46.8ms
968: learn: 0.2562812 total: 1.42s remaining: 45.3ms
969: learn: 0.2562165 total: 1.42s remaining: 43.8ms
970: learn: 0.2561682 total: 1.42s remaining: 42.4ms
971: learn: 0.2559556 total: 1.42s remaining: 40.9ms
972: learn: 0.2558215 total: 1.42s remaining: 39.5ms
973: learn: 0.2557676 total: 1.42s remaining: 38ms
974: learn: 0.2556791 total: 1.42s remaining: 36.5ms
975: learn: 0.2554815 total: 1.43s remaining: 35.1ms
976: learn: 0.2553885 total: 1.43s remaining: 33.6ms
977: learn: 0.2551907 total: 1.43s remaining: 32.1ms
978: learn: 0.2549156 total: 1.43s remaining: 30.7ms
979: learn: 0.2548539 total: 1.43s remaining: 29.2ms
980: learn: 0.2547924 total: 1.43s remaining: 27.7ms
981: learn: 0.2547445 total: 1.43s remaining: 26.3ms
982: learn: 0.2546812 total: 1.43s remaining: 24.8ms
983: learn: 0.2545032 total: 1.44s remaining: 23.3ms
984: learn: 0.2544660 total: 1.44s remaining: 21.9ms
985: learn: 0.2542088 total: 1.44s remaining: 20.4ms
986: learn: 0.2541190 total: 1.44s remaining: 19ms
987: learn: 0.2540235 total: 1.44s remaining: 17.5ms
988: learn: 0.2538105 total: 1.44s remaining: 16ms
989: learn: 0.2537097 total: 1.44s remaining: 14.6ms
990: learn: 0.2535922 total: 1.44s remaining: 13.1ms
991: learn: 0.2534711 total: 1.45s remaining: 11.7ms
992: learn: 0.2533225 total: 1.45s remaining: 10.2ms
993: learn: 0.2531791 total: 1.45s remaining: 8.74ms
994: learn: 0.2531061 total: 1.45s remaining: 7.28ms
995: learn: 0.2530113 total: 1.45s remaining: 5.82ms
996: learn: 0.2528643 total: 1.45s remaining: 4.37ms
997: learn: 0.2526444 total: 1.45s remaining: 2.91ms
998: learn: 0.2524323 total: 1.45s remaining: 1.46ms
999: learn: 0.2523730 total: 1.46s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6867942 total: 2.1ms remaining: 2.09s
1: learn: 0.6834785 total: 2.52ms remaining: 1.26s
2: learn: 0.6781399 total: 3.99ms remaining: 1.33s
3: learn: 0.6725586 total: 9.09ms remaining: 2.26s
4: learn: 0.6666868 total: 12.5ms remaining: 2.49s
5: learn: 0.6615355 total: 14ms remaining: 2.32s
6: learn: 0.6556723 total: 15.4ms remaining: 2.18s
7: learn: 0.6505428 total: 16.7ms remaining: 2.07s
8: learn: 0.6448903 total: 18ms remaining: 1.98s
9: learn: 0.6395347 total: 19.2ms remaining: 1.9s
10: learn: 0.6352672 total: 20.1ms remaining: 1.8s
11: learn: 0.6310173 total: 21ms remaining: 1.73s
12: learn: 0.6263591 total: 22.2ms remaining: 1.69s
13: learn: 0.6223227 total: 23.5ms remaining: 1.66s
14: learn: 0.6178346 total: 24.9ms remaining: 1.63s
15: learn: 0.6130028 total: 26.2ms remaining: 1.61s
16: learn: 0.6094121 total: 27.1ms remaining: 1.56s
17: learn: 0.6049218 total: 28.2ms remaining: 1.54s
```

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18: learn: 0.6003676 total: 29.7ms remaining: 1.53s
19: learn: 0.5967729 total: 30.4ms remaining: 1.49s
20: learn: 0.5932076 total: 31.3ms remaining: 1.46s
21: learn: 0.5894260 total: 32.9ms remaining: 1.46s
22: learn: 0.5863162 total: 34.1ms remaining: 1.45s
23: learn: 0.5821156 total: 35.6ms remaining: 1.45s
24: learn: 0.5779217 total: 37ms remaining: 1.44s
25: learn: 0.5749656 total: 38.1ms remaining: 1.43s
26: learn: 0.5717147 total: 39.6ms remaining: 1.43s
27: learn: 0.5675971 total: 41.2ms remaining: 1.43s
28: learn: 0.5642425 total: 42.3ms remaining: 1.42s
29: learn: 0.5608759 total: 43.6ms remaining: 1.41s
30: learn: 0.5575055 total: 45ms remaining: 1.41s
31: learn: 0.5545809 total: 46.4ms remaining: 1.4s
32: learn: 0.5517100 total: 47.8ms remaining: 1.4s
33: learn: 0.5482000 total: 49.1ms remaining: 1.39s
34: learn: 0.5453531 total: 50.2ms remaining: 1.39s
35: learn: 0.5428083 total: 51.1ms remaining: 1.37s
36: learn: 0.5398543 total: 52.4ms remaining: 1.36s
37: learn: 0.5376498 total: 53.1ms remaining: 1.34s
38: learn: 0.5350669 total: 54ms remaining: 1.33s
39: learn: 0.5333403 total: 55ms remaining: 1.32s
40: learn: 0.5301271 total: 56.4ms remaining: 1.32s
41: learn: 0.5275619 total: 57.6ms remaining: 1.31s
42: learn: 0.5253206 total: 58.7ms remaining: 1.31s
43: learn: 0.5234718 total: 59.5ms remaining: 1.29s
44: learn: 0.5207867 total: 61.1ms remaining: 1.3s
45: learn: 0.5183210 total: 62.3ms remaining: 1.29s
46: learn: 0.5166498 total: 62.8ms remaining: 1.27s
47: learn: 0.5139792 total: 64ms remaining: 1.27s
48: learn: 0.5111969 total: 65.4ms remaining: 1.27s
49: learn: 0.5101534 total: 65.9ms remaining: 1.25s
50: learn: 0.5079911 total: 66.9ms remaining: 1.25s
51: learn: 0.5055179 total: 68.6ms remaining: 1.25s
52: learn: 0.5037385 total: 69.7ms remaining: 1.25s
53: learn: 0.5014479 total: 71ms remaining: 1.24s
54: learn: 0.4994874 total: 72.3ms remaining: 1.24s
55: learn: 0.4970194 total: 73.6ms remaining: 1.24s
56: learn: 0.4951997 total: 75.6ms remaining: 1.25s
57: learn: 0.4930728 total: 77.3ms remaining: 1.25s
58: learn: 0.4914362 total: 78.5ms remaining: 1.25s
59: learn: 0.4892079 total: 79.9ms remaining: 1.25s
60: learn: 0.4870173 total: 82ms remaining: 1.26s
61: learn: 0.4850371 total: 83.7ms remaining: 1.27s
62: learn: 0.4836449 total: 84.9ms remaining: 1.26s
63: learn: 0.4822743 total: 86.2ms remaining: 1.26s
64: learn: 0.4805107 total: 87.5ms remaining: 1.26s
65: learn: 0.4786568 total: 89.1ms remaining: 1.26s
66: learn: 0.4769106 total: 91.1ms remaining: 1.27s
67: learn: 0.4752018 total: 93.2ms remaining: 1.28s
68: learn: 0.4735806 total: 94.6ms remaining: 1.28s
69: learn: 0.4719413 total: 95.9ms remaining: 1.27s
70: learn: 0.4704084 total: 97ms remaining: 1.27s
71: learn: 0.4690388 total: 98.3ms remaining: 1.27s
72: learn: 0.4673602 total: 99.6ms remaining: 1.26s
73: learn: 0.4656115 total: 101ms remaining: 1.26s
74: learn: 0.4650345 total: 102ms remaining: 1.25s
75: learn: 0.4638694 total: 104ms remaining: 1.26s
76: learn: 0.4623378 total: 106ms remaining: 1.26s
77: learn: 0.4609729 total: 107ms remaining: 1.27s
78: learn: 0.4594286 total: 108ms remaining: 1.26s
79: learn: 0.4582962 total: 110ms remaining: 1.26s
80: learn: 0.4571799 total: 111ms remaining: 1.26s
81: learn: 0.4564801 total: 112ms remaining: 1.26s
82: learn: 0.4553227 total: 114ms remaining: 1.26s
83: learn: 0.4541452 total: 117ms remaining: 1.27s
84: learn: 0.4529422 total: 118ms remaining: 1.27s
85: learn: 0.4516923 total: 120ms remaining: 1.27s
86: learn: 0.4503585 total: 122ms remaining: 1.27s
87: learn: 0.4489801 total: 123ms remaining: 1.27s
88: learn: 0.4477872 total: 125ms remaining: 1.28s
89: learn: 0.4467556 total: 127ms remaining: 1.28s
```

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90: learn: 0.4459394 total: 127ms remaining: 1.27s
91: learn: 0.4446519 total: 129ms remaining: 1.27s
92: learn: 0.4434546 total: 131ms remaining: 1.27s
93: learn: 0.4425913 total: 133ms remaining: 1.28s
94: learn: 0.4416759 total: 134ms remaining: 1.28s
95: learn: 0.4406992 total: 136ms remaining: 1.28s
96: learn: 0.4398273 total: 138ms remaining: 1.28s
97: learn: 0.4388669 total: 140ms remaining: 1.28s
98: learn: 0.4376122 total: 141ms remaining: 1.28s
99: learn: 0.4369223 total: 142ms remaining: 1.28s
100: learn: 0.4360109 total: 144ms remaining: 1.28s
101: learn: 0.4351130 total: 145ms remaining: 1.28s
102: learn: 0.4342564 total: 147ms remaining: 1.28s
103: learn: 0.4337703 total: 148ms remaining: 1.27s
104: learn: 0.4330055 total: 150ms remaining: 1.28s
105: learn: 0.4321506 total: 152ms remaining: 1.28s
106: learn: 0.4312570 total: 154ms remaining: 1.28s
107: learn: 0.4305010 total: 155ms remaining: 1.28s
108: learn: 0.4299173 total: 156ms remaining: 1.27s
109: learn: 0.4289009 total: 157ms remaining: 1.27s
110: learn: 0.4283534 total: 159ms remaining: 1.27s
111: learn: 0.4276049 total: 160ms remaining: 1.27s
112: learn: 0.4265738 total: 162ms remaining: 1.27s
113: learn: 0.4257636 total: 164ms remaining: 1.27s
114: learn: 0.4249297 total: 166ms remaining: 1.27s
115: learn: 0.4239021 total: 167ms remaining: 1.27s
116: learn: 0.4230586 total: 169ms remaining: 1.27s
117: learn: 0.4224840 total: 171ms remaining: 1.28s
118: learn: 0.4220362 total: 173ms remaining: 1.28s
119: learn: 0.4213329 total: 176ms remaining: 1.29s
120: learn: 0.4205750 total: 177ms remaining: 1.29s
121: learn: 0.4201033 total: 179ms remaining: 1.29s
122: learn: 0.4195237 total: 181ms remaining: 1.29s
123: learn: 0.4189211 total: 182ms remaining: 1.29s
124: learn: 0.4181540 total: 184ms remaining: 1.29s
125: learn: 0.4173870 total: 186ms remaining: 1.29s
126: learn: 0.4169089 total: 188ms remaining: 1.29s
127: learn: 0.4162295 total: 190ms remaining: 1.29s
128: learn: 0.4156363 total: 191ms remaining: 1.29s
129: learn: 0.4149096 total: 193ms remaining: 1.29s
130: learn: 0.4141923 total: 195ms remaining: 1.29s
131: learn: 0.4134593 total: 197ms remaining: 1.29s
132: learn: 0.4129573 total: 199ms remaining: 1.29s
133: learn: 0.4123650 total: 200ms remaining: 1.29s
134: learn: 0.4119312 total: 202ms remaining: 1.29s
135: learn: 0.4116918 total: 203ms remaining: 1.29s
136: learn: 0.4113386 total: 205ms remaining: 1.29s
137: learn: 0.4108136 total: 206ms remaining: 1.29s
138: learn: 0.4103609 total: 208ms remaining: 1.29s
139: learn: 0.4096689 total: 209ms remaining: 1.28s
140: learn: 0.4092065 total: 210ms remaining: 1.28s
141: learn: 0.4087552 total: 212ms remaining: 1.28s
142: learn: 0.4082381 total: 213ms remaining: 1.28s
143: learn: 0.4078256 total: 215ms remaining: 1.28s
144: learn: 0.4072436 total: 216ms remaining: 1.27s
145: learn: 0.4066652 total: 218ms remaining: 1.27s
146: learn: 0.4061881 total: 219ms remaining: 1.27s
147: learn: 0.4058820 total: 221ms remaining: 1.27s
148: learn: 0.4055033 total: 222ms remaining: 1.27s
149: learn: 0.4050586 total: 224ms remaining: 1.27s
150: learn: 0.4046713 total: 225ms remaining: 1.26s
151: learn: 0.4043505 total: 226ms remaining: 1.26s
152: learn: 0.4039052 total: 227ms remaining: 1.26s
153: learn: 0.4031885 total: 229ms remaining: 1.26s
154: learn: 0.4027490 total: 231ms remaining: 1.26s
155: learn: 0.4022510 total: 233ms remaining: 1.26s
156: learn: 0.4019172 total: 234ms remaining: 1.25s
157: learn: 0.4015846 total: 235ms remaining: 1.25s
158: learn: 0.4012709 total: 236ms remaining: 1.25s
159: learn: 0.4009858 total: 237ms remaining: 1.25s
160: learn: 0.4006109 total: 238ms remaining: 1.24s
161: learn: 0.4002014 total: 240ms remaining: 1.24s
```

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162: learn: 0.3997602 total: 242ms remaining: 1.24s
163: learn: 0.3994028 total: 243ms remaining: 1.24s
164: learn: 0.3991531 total: 244ms remaining: 1.24s
165: learn: 0.3989224 total: 246ms remaining: 1.23s
166: learn: 0.3983053 total: 247ms remaining: 1.23s
167: learn: 0.3978019 total: 248ms remaining: 1.23s
168: learn: 0.3975614 total: 250ms remaining: 1.23s
169: learn: 0.3973005 total: 251ms remaining: 1.22s
170: learn: 0.3970489 total: 252ms remaining: 1.22s
171: learn: 0.3966501 total: 254ms remaining: 1.22s
172: learn: 0.3961467 total: 255ms remaining: 1.22s
173: learn: 0.3958017 total: 257ms remaining: 1.22s
174: learn: 0.3953174 total: 258ms remaining: 1.22s
175: learn: 0.3949356 total: 259ms remaining: 1.21s
176: learn: 0.3946778 total: 261ms remaining: 1.21s
177: learn: 0.3942222 total: 262ms remaining: 1.21s
178: learn: 0.3938144 total: 263ms remaining: 1.21s
179: learn: 0.3935029 total: 264ms remaining: 1.2s
180: learn: 0.3930452 total: 265ms remaining: 1.2s
181: learn: 0.3927362 total: 267ms remaining: 1.2s
182: learn: 0.3925963 total: 268ms remaining: 1.2s
183: learn: 0.3922489 total: 270ms remaining: 1.2s
184: learn: 0.3918166 total: 271ms remaining: 1.19s
185: learn: 0.3915642 total: 273ms remaining: 1.19s
186: learn: 0.3913406 total: 274ms remaining: 1.19s
187: learn: 0.3908940 total: 275ms remaining: 1.19s
188: learn: 0.3905419 total: 277ms remaining: 1.19s
189: learn: 0.3903672 total: 278ms remaining: 1.19s
190: learn: 0.3900544 total: 280ms remaining: 1.19s
191: learn: 0.3897586 total: 281ms remaining: 1.18s
192: learn: 0.3893223 total: 283ms remaining: 1.18s
193: learn: 0.3889984 total: 285ms remaining: 1.18s
194: learn: 0.3887312 total: 286ms remaining: 1.18s
195: learn: 0.3884354 total: 288ms remaining: 1.18s
196: learn: 0.3881777 total: 289ms remaining: 1.18s
197: learn: 0.3880575 total: 291ms remaining: 1.18s
198: learn: 0.3878692 total: 293ms remaining: 1.18s
199: learn: 0.3874252 total: 294ms remaining: 1.18s
200: learn: 0.3871245 total: 295ms remaining: 1.17s
201: learn: 0.3867519 total: 296ms remaining: 1.17s
202: learn: 0.3864762 total: 298ms remaining: 1.17s
203: learn: 0.3860081 total: 300ms remaining: 1.17s
204: learn: 0.3858659 total: 301ms remaining: 1.17s
205: learn: 0.3857217 total: 302ms remaining: 1.16s
206: learn: 0.3853711 total: 303ms remaining: 1.16s
207: learn: 0.3850784 total: 305ms remaining: 1.16s
208: learn: 0.3847925 total: 306ms remaining: 1.16s
209: learn: 0.3844765 total: 308ms remaining: 1.16s
210: learn: 0.3841367 total: 309ms remaining: 1.16s
211: learn: 0.3837396 total: 311ms remaining: 1.16s
212: learn: 0.3836086 total: 312ms remaining: 1.15s
213: learn: 0.3832419 total: 313ms remaining: 1.15s
214: learn: 0.3831074 total: 315ms remaining: 1.15s
215: learn: 0.3827142 total: 316ms remaining: 1.15s
216: learn: 0.3823014 total: 318ms remaining: 1.15s
217: learn: 0.3820503 total: 320ms remaining: 1.15s
218: learn: 0.3817209 total: 321ms remaining: 1.15s
219: learn: 0.3813355 total: 323ms remaining: 1.14s
220: learn: 0.3810011 total: 324ms remaining: 1.14s
221: learn: 0.3807843 total: 325ms remaining: 1.14s
222: learn: 0.3804812 total: 326ms remaining: 1.14s
223: learn: 0.3802492 total: 328ms remaining: 1.14s
224: learn: 0.3798757 total: 330ms remaining: 1.14s
225: learn: 0.3797155 total: 331ms remaining: 1.13s
226: learn: 0.3795135 total: 333ms remaining: 1.14s
227: learn: 0.3792915 total: 335ms remaining: 1.14s
228: learn: 0.3791202 total: 337ms remaining: 1.13s
229: learn: 0.3788800 total: 338ms remaining: 1.13s
230: learn: 0.3788051 total: 340ms remaining: 1.13s
231: learn: 0.3784846 total: 341ms remaining: 1.13s
232: learn: 0.3782419 total: 343ms remaining: 1.13s
233: learn: 0.3778921 total: 344ms remaining: 1.13s
```

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234: learn: 0.3776746 total: 347ms remaining: 1.13s
235: learn: 0.3775272 total: 348ms remaining: 1.13s
236: learn: 0.3773040 total: 350ms remaining: 1.13s
237: learn: 0.3769488 total: 352ms remaining: 1.13s
238: learn: 0.3767993 total: 353ms remaining: 1.13s
239: learn: 0.3764858 total: 355ms remaining: 1.12s
240: learn: 0.3763183 total: 358ms remaining: 1.13s
241: learn: 0.3760418 total: 360ms remaining: 1.13s
242: learn: 0.3757713 total: 362ms remaining: 1.13s
243: learn: 0.3755107 total: 363ms remaining: 1.12s
244: learn: 0.3753994 total: 364ms remaining: 1.12s
245: learn: 0.3753488 total: 364ms remaining: 1.12s
246: learn: 0.3750615 total: 365ms remaining: 1.11s
247: learn: 0.3747044 total: 366ms remaining: 1.11s
248: learn: 0.3744873 total: 367ms remaining: 1.11s
249: learn: 0.3742851 total: 368ms remaining: 1.1s
250: learn: 0.3741507 total: 369ms remaining: 1.1s
251: learn: 0.3739368 total: 370ms remaining: 1.1s
252: learn: 0.3735557 total: 372ms remaining: 1.1s
253: learn: 0.3734996 total: 372ms remaining: 1.09s
254: learn: 0.3734138 total: 374ms remaining: 1.09s
255: learn: 0.3731841 total: 376ms remaining: 1.09s
256: learn: 0.3729886 total: 377ms remaining: 1.09s
257: learn: 0.3728367 total: 379ms remaining: 1.09s
258: learn: 0.3725589 total: 380ms remaining: 1.09s
259: learn: 0.3724242 total: 381ms remaining: 1.08s
260: learn: 0.3721966 total: 382ms remaining: 1.08s
261: learn: 0.3721266 total: 383ms remaining: 1.08s
262: learn: 0.3717896 total: 386ms remaining: 1.08s
263: learn: 0.3716721 total: 387ms remaining: 1.08s
264: learn: 0.3714460 total: 389ms remaining: 1.08s
265: learn: 0.3711421 total: 390ms remaining: 1.08s
266: learn: 0.3709806 total: 391ms remaining: 1.07s
267: learn: 0.3709662 total: 392ms remaining: 1.07s
268: learn: 0.3707485 total: 393ms remaining: 1.07s
269: learn: 0.3706085 total: 394ms remaining: 1.07s
270: learn: 0.3703507 total: 396ms remaining: 1.06s
271: learn: 0.3702372 total: 396ms remaining: 1.06s
272: learn: 0.3699510 total: 397ms remaining: 1.06s
273: learn: 0.3698494 total: 398ms remaining: 1.05s
274: learn: 0.3696358 total: 399ms remaining: 1.05s
275: learn: 0.3695376 total: 400ms remaining: 1.05s
276: learn: 0.3692961 total: 401ms remaining: 1.04s
277: learn: 0.3690288 total: 402ms remaining: 1.04s
278: learn: 0.3687372 total: 404ms remaining: 1.04s
279: learn: 0.3685887 total: 405ms remaining: 1.04s
280: learn: 0.3684805 total: 406ms remaining: 1.04s
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283: learn: 0.3677844 total: 410ms remaining: 1.03s
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286: learn: 0.3671436 total: 415ms remaining: 1.03s
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289: learn: 0.3664425 total: 419ms remaining: 1.02s
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297: learn: 0.3649185 total: 429ms remaining: 1.01s
298: learn: 0.3648247 total: 430ms remaining: 1.01s
299: learn: 0.3647330 total: 432ms remaining: 1.01s
300: learn: 0.3645150 total: 433ms remaining: 1.01s
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302: learn: 0.3640392 total: 436ms remaining: 1s
303: learn: 0.3639563 total: 438ms remaining: 1s
304: learn: 0.3638699 total: 439ms remaining: 1000ms
305: learn: 0.3636044 total: 440ms remaining: 998ms
```

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377: learn: 0.3530018 total: 548ms remaining: 902ms
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```

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```

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677: learn: 0.3176131 total: 999ms remaining: 474ms
678: learn: 0.3175340 total: 1s remaining: 473ms
679: learn: 0.3173975 total: 1s remaining: 472ms
680: learn: 0.3172574 total: 1s remaining: 470ms
681: learn: 0.3170920 total: 1s remaining: 469ms
682: learn: 0.3169563 total: 1.01s remaining: 467ms
683: learn: 0.3167804 total: 1.01s remaining: 466ms
684: learn: 0.3165834 total: 1.01s remaining: 465ms
685: learn: 0.3164803 total: 1.01s remaining: 463ms
686: learn: 0.3163416 total: 1.01s remaining: 462ms
687: learn: 0.3161978 total: 1.01s remaining: 460ms
688: learn: 0.3161769 total: 1.02s remaining: 459ms
689: learn: 0.3160358 total: 1.02s remaining: 457ms
690: learn: 0.3158900 total: 1.02s remaining: 456ms
691: learn: 0.3158178 total: 1.02s remaining: 455ms
692: learn: 0.3157585 total: 1.02s remaining: 454ms
693: learn: 0.3154663 total: 1.03s remaining: 453ms
694: learn: 0.3154102 total: 1.03s remaining: 451ms
695: learn: 0.3152654 total: 1.03s remaining: 450ms
696: learn: 0.3151902 total: 1.03s remaining: 448ms
697: learn: 0.3150708 total: 1.03s remaining: 447ms
698: learn: 0.3150460 total: 1.03s remaining: 445ms
699: learn: 0.3149910 total: 1.04s remaining: 444ms
700: learn: 0.3148769 total: 1.04s remaining: 443ms
701: learn: 0.3147081 total: 1.04s remaining: 442ms
702: learn: 0.3146784 total: 1.04s remaining: 440ms
703: learn: 0.3146058 total: 1.04s remaining: 439ms
704: learn: 0.3144742 total: 1.04s remaining: 437ms
705: learn: 0.3143772 total: 1.05s remaining: 436ms
706: learn: 0.3142128 total: 1.05s remaining: 434ms
707: learn: 0.3141424 total: 1.05s remaining: 433ms
708: learn: 0.3140073 total: 1.05s remaining: 431ms
709: learn: 0.3138228 total: 1.05s remaining: 430ms
710: learn: 0.3136698 total: 1.05s remaining: 428ms
711: learn: 0.3136301 total: 1.05s remaining: 427ms
712: learn: 0.3135035 total: 1.06s remaining: 425ms
713: learn: 0.3133970 total: 1.06s remaining: 424ms
714: learn: 0.3133843 total: 1.06s remaining: 422ms
715: learn: 0.3133370 total: 1.06s remaining: 421ms
716: learn: 0.3131505 total: 1.06s remaining: 420ms
717: learn: 0.3130757 total: 1.06s remaining: 418ms
718: learn: 0.3129620 total: 1.07s remaining: 417ms
719: learn: 0.3127704 total: 1.07s remaining: 415ms
720: learn: 0.3126680 total: 1.07s remaining: 414ms
721: learn: 0.3126141 total: 1.07s remaining: 413ms
722: learn: 0.3124907 total: 1.07s remaining: 411ms
723: learn: 0.3124160 total: 1.07s remaining: 410ms
724: learn: 0.3123528 total: 1.07s remaining: 408ms
725: learn: 0.3122713 total: 1.08s remaining: 407ms
726: learn: 0.3122417 total: 1.08s remaining: 405ms
727: learn: 0.3121281 total: 1.08s remaining: 403ms
728: learn: 0.3120291 total: 1.08s remaining: 402ms
729: learn: 0.3119227 total: 1.08s remaining: 400ms
730: learn: 0.3118013 total: 1.08s remaining: 399ms
731: learn: 0.3117127 total: 1.08s remaining: 397ms
732: learn: 0.3117050 total: 1.09s remaining: 396ms
733: learn: 0.3115990 total: 1.09s remaining: 394ms
734: learn: 0.3114708 total: 1.09s remaining: 393ms
735: learn: 0.3113493 total: 1.09s remaining: 391ms
736: learn: 0.3113248 total: 1.09s remaining: 390ms
737: learn: 0.3112741 total: 1.09s remaining: 389ms
```

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738: learn: 0.3111885 total: 1.1s remaining: 387ms
739: learn: 0.3111415 total: 1.1s remaining: 386ms
740: learn: 0.3109447 total: 1.1s remaining: 385ms
741: learn: 0.3108582 total: 1.1s remaining: 383ms
742: learn: 0.3108109 total: 1.1s remaining: 382ms
743: learn: 0.3106988 total: 1.1s remaining: 380ms
744: learn: 0.3105638 total: 1.11s remaining: 379ms
745: learn: 0.3104275 total: 1.11s remaining: 377ms
746: learn: 0.3103729 total: 1.11s remaining: 376ms
747: learn: 0.3102337 total: 1.11s remaining: 374ms
748: learn: 0.3101014 total: 1.11s remaining: 373ms
749: learn: 0.3100365 total: 1.11s remaining: 372ms
750: learn: 0.3100272 total: 1.12s remaining: 370ms
751: learn: 0.3099572 total: 1.12s remaining: 369ms
752: learn: 0.3098360 total: 1.12s remaining: 367ms
753: learn: 0.3097785 total: 1.12s remaining: 366ms
754: learn: 0.3097290 total: 1.12s remaining: 365ms
755: learn: 0.3096489 total: 1.13s remaining: 363ms
756: learn: 0.3094987 total: 1.13s remaining: 362ms
757: learn: 0.3093695 total: 1.13s remaining: 360ms
758: learn: 0.3092504 total: 1.13s remaining: 358ms
759: learn: 0.3091370 total: 1.13s remaining: 357ms
760: learn: 0.3091060 total: 1.13s remaining: 355ms
761: learn: 0.3089283 total: 1.13s remaining: 354ms
762: learn: 0.3088235 total: 1.13s remaining: 353ms
763: learn: 0.3086380 total: 1.14s remaining: 351ms
764: learn: 0.3084945 total: 1.14s remaining: 350ms
765: learn: 0.3084782 total: 1.14s remaining: 348ms
766: learn: 0.3082710 total: 1.14s remaining: 347ms
767: learn: 0.3081999 total: 1.14s remaining: 345ms
768: learn: 0.3081165 total: 1.15s remaining: 344ms
769: learn: 0.3080194 total: 1.15s remaining: 342ms
770: learn: 0.3079311 total: 1.15s remaining: 341ms
771: learn: 0.3079118 total: 1.15s remaining: 339ms
772: learn: 0.3077844 total: 1.15s remaining: 338ms
773: learn: 0.3076802 total: 1.15s remaining: 337ms
774: learn: 0.3076323 total: 1.16s remaining: 335ms
775: learn: 0.3075652 total: 1.16s remaining: 334ms
776: learn: 0.3075381 total: 1.16s remaining: 332ms
777: learn: 0.3074570 total: 1.16s remaining: 331ms
778: learn: 0.3074291 total: 1.16s remaining: 329ms
779: learn: 0.3073172 total: 1.16s remaining: 328ms
780: learn: 0.3072555 total: 1.16s remaining: 326ms
781: learn: 0.3071765 total: 1.16s remaining: 325ms
782: learn: 0.3070945 total: 1.17s remaining: 323ms
783: learn: 0.3069355 total: 1.17s remaining: 322ms
784: learn: 0.3066700 total: 1.17s remaining: 320ms
785: learn: 0.3066361 total: 1.17s remaining: 319ms
786: learn: 0.3065440 total: 1.17s remaining: 317ms
787: learn: 0.3065038 total: 1.17s remaining: 316ms
788: learn: 0.3064686 total: 1.18s remaining: 314ms
789: learn: 0.3063717 total: 1.18s remaining: 313ms
790: learn: 0.3062604 total: 1.18s remaining: 311ms
791: learn: 0.3061046 total: 1.18s remaining: 310ms
792: learn: 0.3058174 total: 1.18s remaining: 308ms
793: learn: 0.3057398 total: 1.18s remaining: 307ms
794: learn: 0.3055771 total: 1.18s remaining: 305ms
795: learn: 0.3054082 total: 1.19s remaining: 304ms
796: learn: 0.3053111 total: 1.19s remaining: 302ms
797: learn: 0.3051250 total: 1.19s remaining: 301ms
798: learn: 0.3050158 total: 1.19s remaining: 299ms
799: learn: 0.3049167 total: 1.19s remaining: 298ms
800: learn: 0.3048382 total: 1.2s remaining: 297ms
801: learn: 0.3047371 total: 1.2s remaining: 296ms
802: learn: 0.3046852 total: 1.2s remaining: 294ms
803: learn: 0.3045582 total: 1.2s remaining: 293ms
804: learn: 0.3044233 total: 1.2s remaining: 291ms
805: learn: 0.3042653 total: 1.2s remaining: 290ms
806: learn: 0.3041781 total: 1.21s remaining: 288ms
807: learn: 0.3041476 total: 1.21s remaining: 287ms
808: learn: 0.3040859 total: 1.21s remaining: 285ms
809: learn: 0.3038976 total: 1.21s remaining: 284ms
```

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810: learn: 0.3038655 total: 1.21s remaining: 282ms
811: learn: 0.3037964 total: 1.21s remaining: 281ms
812: learn: 0.3037276 total: 1.21s remaining: 279ms
813: learn: 0.3036118 total: 1.22s remaining: 278ms
814: learn: 0.3034310 total: 1.22s remaining: 277ms
815: learn: 0.3033538 total: 1.22s remaining: 275ms
816: learn: 0.3032007 total: 1.22s remaining: 274ms
817: learn: 0.3031575 total: 1.22s remaining: 272ms
818: learn: 0.3029810 total: 1.22s remaining: 271ms
819: learn: 0.3028976 total: 1.23s remaining: 269ms
820: learn: 0.3027403 total: 1.23s remaining: 268ms
821: learn: 0.3026086 total: 1.23s remaining: 266ms
822: learn: 0.3025277 total: 1.23s remaining: 264ms
823: learn: 0.3024022 total: 1.23s remaining: 263ms
824: learn: 0.3023550 total: 1.23s remaining: 261ms
825: learn: 0.3022810 total: 1.23s remaining: 260ms
826: learn: 0.3021984 total: 1.24s remaining: 259ms
827: learn: 0.3021196 total: 1.24s remaining: 257ms
828: learn: 0.3020312 total: 1.24s remaining: 256ms
829: learn: 0.3019646 total: 1.24s remaining: 254ms
830: learn: 0.3018472 total: 1.24s remaining: 253ms
831: learn: 0.3018434 total: 1.25s remaining: 251ms
832: learn: 0.3017245 total: 1.25s remaining: 250ms
833: learn: 0.3016244 total: 1.25s remaining: 249ms
834: learn: 0.3015042 total: 1.25s remaining: 247ms
835: learn: 0.3014659 total: 1.25s remaining: 246ms
836: learn: 0.3013999 total: 1.25s remaining: 244ms
837: learn: 0.3013745 total: 1.25s remaining: 242ms
838: learn: 0.3012831 total: 1.25s remaining: 241ms
839: learn: 0.3012179 total: 1.26s remaining: 239ms
840: learn: 0.3011460 total: 1.26s remaining: 238ms
841: learn: 0.3009935 total: 1.26s remaining: 236ms
842: learn: 0.3009564 total: 1.26s remaining: 235ms
843: learn: 0.3007555 total: 1.26s remaining: 233ms
844: learn: 0.3007316 total: 1.26s remaining: 232ms
845: learn: 0.3006045 total: 1.27s remaining: 231ms
846: learn: 0.3004859 total: 1.27s remaining: 229ms
847: learn: 0.3004151 total: 1.27s remaining: 228ms
848: learn: 0.3001806 total: 1.27s remaining: 226ms
849: learn: 0.3000761 total: 1.27s remaining: 225ms
850: learn: 0.2999579 total: 1.27s remaining: 223ms
851: learn: 0.2996855 total: 1.28s remaining: 222ms
852: learn: 0.2994374 total: 1.28s remaining: 220ms
853: learn: 0.2992340 total: 1.28s remaining: 219ms
854: learn: 0.2991619 total: 1.28s remaining: 217ms
855: learn: 0.2991045 total: 1.28s remaining: 216ms
856: learn: 0.2990527 total: 1.28s remaining: 215ms
857: learn: 0.2988553 total: 1.29s remaining: 213ms
858: learn: 0.2988121 total: 1.29s remaining: 212ms
859: learn: 0.2987529 total: 1.29s remaining: 210ms
860: learn: 0.2987356 total: 1.29s remaining: 209ms
861: learn: 0.2987133 total: 1.29s remaining: 207ms
862: learn: 0.2986019 total: 1.29s remaining: 206ms
863: learn: 0.2985506 total: 1.3s remaining: 204ms
864: learn: 0.2985206 total: 1.3s remaining: 203ms
865: learn: 0.2983480 total: 1.3s remaining: 201ms
866: learn: 0.2982875 total: 1.3s remaining: 200ms
867: learn: 0.2981581 total: 1.3s remaining: 198ms
868: learn: 0.2980455 total: 1.31s remaining: 197ms
869: learn: 0.2978701 total: 1.31s remaining: 195ms
870: learn: 0.2977883 total: 1.31s remaining: 194ms
871: learn: 0.2977332 total: 1.31s remaining: 192ms
872: learn: 0.2975250 total: 1.31s remaining: 191ms
873: learn: 0.2974171 total: 1.31s remaining: 189ms
874: learn: 0.2972958 total: 1.31s remaining: 188ms
875: learn: 0.2972507 total: 1.32s remaining: 186ms
876: learn: 0.2971696 total: 1.32s remaining: 185ms
877: learn: 0.2970684 total: 1.32s remaining: 183ms
878: learn: 0.2969561 total: 1.32s remaining: 182ms
879: learn: 0.2969224 total: 1.32s remaining: 180ms
880: learn: 0.2967974 total: 1.32s remaining: 179ms
881: learn: 0.2967219 total: 1.32s remaining: 177ms
```

```
882: learn: 0.2966540 total: 1.32s remaining: 176ms
883: learn: 0.2965454 total: 1.33s remaining: 174ms
884: learn: 0.2964897 total: 1.33s remaining: 173ms
885: learn: 0.2963961 total: 1.33s remaining: 171ms
886: learn: 0.2963254 total: 1.33s remaining: 170ms
887: learn: 0.2961332 total: 1.33s remaining: 168ms
888: learn: 0.2960820 total: 1.33s remaining: 167ms
889: learn: 0.2959206 total: 1.34s remaining: 165ms
890: learn: 0.2958621 total: 1.34s remaining: 164ms
891: learn: 0.2956967 total: 1.34s remaining: 162ms
892: learn: 0.2956296 total: 1.34s remaining: 161ms
893: learn: 0.2955670 total: 1.34s remaining: 159ms
894: learn: 0.2954991 total: 1.34s remaining: 158ms
895: learn: 0.2953110 total: 1.34s remaining: 156ms
896: learn: 0.2952475 total: 1.35s remaining: 155ms
897: learn: 0.2951058 total: 1.35s remaining: 153ms
898: learn: 0.2949943 total: 1.35s remaining: 152ms
899: learn: 0.2949473 total: 1.35s remaining: 150ms
900: learn: 0.2948221 total: 1.35s remaining: 149ms
901: learn: 0.2946752 total: 1.35s remaining: 147ms
902: learn: 0.2945646 total: 1.36s remaining: 146ms
903: learn: 0.2945091 total: 1.36s remaining: 144ms
904: learn: 0.2944641 total: 1.36s remaining: 143ms
905: learn: 0.2943766 total: 1.36s remaining: 141ms
906: learn: 0.2942053 total: 1.36s remaining: 140ms
907: learn: 0.2940319 total: 1.36s remaining: 138ms
908: learn: 0.2939657 total: 1.37s remaining: 137ms
909: learn: 0.2938884 total: 1.37s remaining: 135ms
910: learn: 0.2937949 total: 1.37s remaining: 134ms
911: learn: 0.2937348 total: 1.37s remaining: 132ms
912: learn: 0.2936311 total: 1.37s remaining: 131ms
913: learn: 0.2935796 total: 1.37s remaining: 129ms
914: learn: 0.2935287 total: 1.37s remaining: 128ms
915: learn: 0.2934737 total: 1.38s remaining: 126ms
916: learn: 0.2934425 total: 1.38s remaining: 125ms
917: learn: 0.2933117 total: 1.38s remaining: 123ms
918: learn: 0.2932508 total: 1.38s remaining: 122ms
919: learn: 0.2931451 total: 1.38s remaining: 120ms
920: learn: 0.2929175 total: 1.38s remaining: 119ms
921: learn: 0.2928891 total: 1.38s remaining: 117ms
922: learn: 0.2928297 total: 1.39s remaining: 116ms
923: learn: 0.2927526 total: 1.39s remaining: 114ms
924: learn: 0.2926362 total: 1.39s remaining: 113ms
925: learn: 0.2925069 total: 1.39s remaining: 111ms
926: learn: 0.2924543 total: 1.4s remaining: 110ms
927: learn: 0.2923215 total: 1.4s remaining: 109ms
928: learn: 0.2922484 total: 1.4s remaining: 107ms
929: learn: 0.2922325 total: 1.4s remaining: 105ms
930: learn: 0.2920946 total: 1.4s remaining: 104ms
931: learn: 0.2920391 total: 1.4s remaining: 102ms
932: learn: 0.2919830 total: 1.41s remaining: 101ms
933: learn: 0.2918362 total: 1.41s remaining: 99.5ms
934: learn: 0.2916514 total: 1.41s remaining: 97.9ms
935: learn: 0.2914741 total: 1.41s remaining: 96.4ms
936: learn: 0.2913659 total: 1.41s remaining: 95ms
937: learn: 0.2913421 total: 1.41s remaining: 93.5ms
938: learn: 0.2912195 total: 1.42s remaining: 92ms
939: learn: 0.2910886 total: 1.42s remaining: 90.4ms
940: learn: 0.2910256 total: 1.42s remaining: 88.9ms
941: learn: 0.2909522 total: 1.42s remaining: 87.3ms
942: learn: 0.2909484 total: 1.42s remaining: 85.8ms
943: learn: 0.2907093 total: 1.42s remaining: 84.2ms
944: learn: 0.2905844 total: 1.42s remaining: 82.7ms
945: learn: 0.2904932 total: 1.42s remaining: 81.2ms
946: learn: 0.2904213 total: 1.42s remaining: 79.7ms
947: learn: 0.2902951 total: 1.42s remaining: 78.1ms
948: learn: 0.2902114 total: 1.43s remaining: 76.6ms
949: learn: 0.2899917 total: 1.43s remaining: 75.1ms
950: learn: 0.2899300 total: 1.43s remaining: 73.6ms
951: learn: 0.2897598 total: 1.43s remaining: 72.1ms
952: learn: 0.2897300 total: 1.43s remaining: 70.6ms
953: learn: 0.2895930 total: 1.43s remaining: 69.1ms
```

```
954: learn: 0.2894834 total: 1.43s remaining: 67.6ms
955: learn: 0.2893749 total: 1.43s remaining: 66ms
956: learn: 0.2893005 total: 1.44s remaining: 64.5ms
957: learn: 0.2891860 total: 1.44s remaining: 63ms
958: learn: 0.2890698 total: 1.44s remaining: 61.5ms
959: learn: 0.2889885 total: 1.44s remaining: 60ms
960: learn: 0.2889449 total: 1.44s remaining: 58.5ms
961: learn: 0.2888781 total: 1.44s remaining: 57ms
962: learn: 0.2887160 total: 1.45s remaining: 55.5ms
963: learn: 0.2886128 total: 1.45s remaining: 54ms
964: learn: 0.2885095 total: 1.45s remaining: 52.5ms
965: learn: 0.2884465 total: 1.45s remaining: 51ms
966: learn: 0.2884018 total: 1.45s remaining: 49.5ms
967: learn: 0.2883151 total: 1.45s remaining: 48ms
968: learn: 0.2882751 total: 1.45s remaining: 46.5ms
969: learn: 0.2882401 total: 1.45s remaining: 45ms
970: learn: 0.2880500 total: 1.46s remaining: 43.5ms
971: learn: 0.2879985 total: 1.46s remaining: 42ms
972: learn: 0.2879284 total: 1.46s remaining: 40.5ms
973: learn: 0.2878474 total: 1.46s remaining: 39ms
974: learn: 0.2877816 total: 1.46s remaining: 37.5ms
975: learn: 0.2877059 total: 1.46s remaining: 36ms
976: learn: 0.2876760 total: 1.46s remaining: 34.5ms
977: learn: 0.2876002 total: 1.47s remaining: 33ms
978: learn: 0.2874926 total: 1.47s remaining: 31.5ms
979: learn: 0.2874273 total: 1.47s remaining: 30ms
980: learn: 0.2873523 total: 1.47s remaining: 28.5ms
981: learn: 0.2872262 total: 1.47s remaining: 27ms
982: learn: 0.2872093 total: 1.47s remaining: 25.5ms
983: learn: 0.2869866 total: 1.48s remaining: 24ms
984: learn: 0.2868114 total: 1.48s remaining: 22.5ms
985: learn: 0.2867605 total: 1.48s remaining: 21ms
986: learn: 0.2865794 total: 1.48s remaining: 19.5ms
987: learn: 0.2865362 total: 1.48s remaining: 18ms
988: learn: 0.2864124 total: 1.48s remaining: 16.5ms
989: learn: 0.2863599 total: 1.48s remaining: 15ms
990: learn: 0.2862981 total: 1.49s remaining: 13.5ms
991: learn: 0.2862592 total: 1.49s remaining: 12ms
992: learn: 0.2860490 total: 1.49s remaining: 10.5ms
993: learn: 0.2858808 total: 1.49s remaining: 9ms
994: learn: 0.2856984 total: 1.49s remaining: 7.5ms
995: learn: 0.2855439 total: 1.49s remaining: 6ms
996: learn: 0.2854598 total: 1.5s remaining: 4.5ms
997: learn: 0.2853169 total: 1.5s remaining: 3ms
998: learn: 0.2851496 total: 1.5s remaining: 1.5ms
999: learn: 0.2850584 total: 1.5s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6867228 total: 1.5ms remaining: 1.5s
1: learn: 0.6832765 total: 2.39ms remaining: 1.19s
2: learn: 0.6783173 total: 3.39ms remaining: 1.13s
3: learn: 0.6737638 total: 4.38ms remaining: 1.09s
4: learn: 0.6687924 total: 6.66ms remaining: 1.32s
5: learn: 0.6632521 total: 8.45ms remaining: 1.4s
6: learn: 0.6575288 total: 9.8ms remaining: 1.39s
7: learn: 0.6515982 total: 12ms remaining: 1.49s
8: learn: 0.6467883 total: 13.7ms remaining: 1.51s
9: learn: 0.6414694 total: 15.3ms remaining: 1.51s
10: learn: 0.6360234 total: 17.2ms remaining: 1.54s
11: learn: 0.6307969 total: 18.6ms remaining: 1.53s
12: learn: 0.6260650 total: 20.7ms remaining: 1.57s
13: learn: 0.6217357 total: 22ms remaining: 1.55s
14: learn: 0.6174747 total: 23.6ms remaining: 1.55s
15: learn: 0.6133424 total: 25ms remaining: 1.54s
16: learn: 0.6089263 total: 27ms remaining: 1.56s
17: learn: 0.6052535 total: 28.8ms remaining: 1.57s
18: learn: 0.6015505 total: 30.1ms remaining: 1.55s
19: learn: 0.5976408 total: 31.4ms remaining: 1.54s
20: learn: 0.5930024 total: 32.7ms remaining: 1.52s
21: learn: 0.5888466 total: 34ms remaining: 1.51s
22: learn: 0.5848182 total: 35.6ms remaining: 1.51s
23: learn: 0.5808345 total: 37.6ms remaining: 1.53s
24: learn: 0.5778236 total: 39.3ms remaining: 1.53s
```

```
25: learn: 0.5745259 total: 40.5ms remaining: 1.52s
26: learn: 0.5713754 total: 42.2ms remaining: 1.52s
27: learn: 0.5695223 total: 43ms remaining: 1.49s
28: learn: 0.5659652 total: 44.4ms remaining: 1.49s
29: learn: 0.5624129 total: 46.6ms remaining: 1.51s
30: learn: 0.5590910 total: 48.2ms remaining: 1.51s
31: learn: 0.5558862 total: 49.6ms remaining: 1.5s
32: learn: 0.5532856 total: 50.7ms remaining: 1.49s
33: learn: 0.5506818 total: 51.6ms remaining: 1.47s
34: learn: 0.5478309 total: 53ms remaining: 1.46s
35: learn: 0.5444049 total: 54.4ms remaining: 1.46s
36: learn: 0.5427476 total: 55.6ms remaining: 1.45s
37: learn: 0.5398817 total: 57ms remaining: 1.44s
38: learn: 0.5367079 total: 58.4ms remaining: 1.44s
39: learn: 0.5340959 total: 59.7ms remaining: 1.43s
40: learn: 0.5309998 total: 61.1ms remaining: 1.43s
41: learn: 0.5285470 total: 62.3ms remaining: 1.42s
42: learn: 0.5256885 total: 63.9ms remaining: 1.42s
43: learn: 0.5230867 total: 65.5ms remaining: 1.42s
44: learn: 0.5200491 total: 67.5ms remaining: 1.43s
45: learn: 0.5171651 total: 68.9ms remaining: 1.43s
46: learn: 0.5147910 total: 70.4ms remaining: 1.43s
47: learn: 0.5126697 total: 71.5ms remaining: 1.42s
48: learn: 0.5103598 total: 72.7ms remaining: 1.41s
49: learn: 0.5082072 total: 73.9ms remaining: 1.4s
50: learn: 0.5055356 total: 75.1ms remaining: 1.4s
51: learn: 0.5041853 total: 75.8ms remaining: 1.38s
52: learn: 0.5016975 total: 77.5ms remaining: 1.38s
53: learn: 0.4998534 total: 78.5ms remaining: 1.37s
54: learn: 0.4980160 total: 79.6ms remaining: 1.37s
55: learn: 0.4960924 total: 80.8ms remaining: 1.36s
56: learn: 0.4940881 total: 82.2ms remaining: 1.36s
57: learn: 0.4917561 total: 83.5ms remaining: 1.35s
58: learn: 0.4898060 total: 84.8ms remaining: 1.35s
59: learn: 0.4876478 total: 86.1ms remaining: 1.35s
60: learn: 0.4857896 total: 87.4ms remaining: 1.35s
61: learn: 0.4841938 total: 88.6ms remaining: 1.34s
62: learn: 0.4823183 total: 90ms remaining: 1.34s
63: learn: 0.4806592 total: 91.2ms remaining: 1.33s
64: learn: 0.4792165 total: 92.3ms remaining: 1.33s
65: learn: 0.4772564 total: 93.2ms remaining: 1.32s
66: learn: 0.4758458 total: 94.4ms remaining: 1.31s
67: learn: 0.4747235 total: 95.4ms remaining: 1.31s
68: learn: 0.4739002 total: 96.4ms remaining: 1.3s
69: learn: 0.4724077 total: 97.6ms remaining: 1.3s
70: learn: 0.4710322 total: 99.1ms remaining: 1.3s
71: learn: 0.4691326 total: 100ms remaining: 1.29s
72: learn: 0.4674599 total: 102ms remaining: 1.29s
73: learn: 0.4662745 total: 103ms remaining: 1.29s
74: learn: 0.4646316 total: 105ms remaining: 1.29s
75: learn: 0.4631054 total: 107ms remaining: 1.3s
76: learn: 0.4613627 total: 109ms remaining: 1.3s
77: learn: 0.4599992 total: 110ms remaining: 1.3s
78: learn: 0.4583952 total: 112ms remaining: 1.31s
79: learn: 0.4574014 total: 114ms remaining: 1.31s
80: learn: 0.4562770 total: 115ms remaining: 1.31s
81: learn: 0.4548553 total: 117ms remaining: 1.31s
82: learn: 0.4538027 total: 119ms remaining: 1.31s
83: learn: 0.4526945 total: 120ms remaining: 1.31s
84: learn: 0.4515245 total: 121ms remaining: 1.31s
85: learn: 0.4505741 total: 123ms remaining: 1.3s
86: learn: 0.4493677 total: 124ms remaining: 1.3s
87: learn: 0.4483326 total: 125ms remaining: 1.29s
88: learn: 0.4469672 total: 126ms remaining: 1.29s
89: learn: 0.4458444 total: 127ms remaining: 1.29s
90: learn: 0.4446375 total: 128ms remaining: 1.28s
91: learn: 0.4437930 total: 129ms remaining: 1.28s
92: learn: 0.4425878 total: 131ms remaining: 1.28s
93: learn: 0.4414807 total: 132ms remaining: 1.28s
94: learn: 0.4403326 total: 134ms remaining: 1.27s
95: learn: 0.4393239 total: 135ms remaining: 1.27s
96: learn: 0.4384646 total: 136ms remaining: 1.27s
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97: learn: 0.4377032 total: 138ms remaining: 1.27s
98: learn: 0.4368839 total: 139ms remaining: 1.27s
99: learn: 0.4358662 total: 141ms remaining: 1.27s
100: learn: 0.4348885 total: 143ms remaining: 1.27s
101: learn: 0.4342714 total: 144ms remaining: 1.27s
102: learn: 0.4337301 total: 146ms remaining: 1.27s
103: learn: 0.4328736 total: 147ms remaining: 1.27s
104: learn: 0.4318225 total: 149ms remaining: 1.27s
105: learn: 0.4308224 total: 151ms remaining: 1.27s
106: learn: 0.4300008 total: 152ms remaining: 1.27s
107: learn: 0.4291874 total: 154ms remaining: 1.27s
108: learn: 0.4281482 total: 155ms remaining: 1.27s
109: learn: 0.4272447 total: 156ms remaining: 1.26s
110: learn: 0.4263470 total: 158ms remaining: 1.26s
111: learn: 0.4254601 total: 159ms remaining: 1.26s
112: learn: 0.4247835 total: 160ms remaining: 1.26s
113: learn: 0.4240124 total: 162ms remaining: 1.25s
114: learn: 0.4230515 total: 163ms remaining: 1.26s
115: learn: 0.4222429 total: 165ms remaining: 1.25s
116: learn: 0.4216542 total: 166ms remaining: 1.25s
117: learn: 0.4210667 total: 167ms remaining: 1.25s
118: learn: 0.4205603 total: 169ms remaining: 1.25s
119: learn: 0.4200162 total: 170ms remaining: 1.25s
120: learn: 0.4194606 total: 172ms remaining: 1.25s
121: learn: 0.4187977 total: 173ms remaining: 1.25s
122: learn: 0.4180219 total: 175ms remaining: 1.24s
123: learn: 0.4173028 total: 176ms remaining: 1.24s
124: learn: 0.4166850 total: 178ms remaining: 1.25s
125: learn: 0.4160005 total: 180ms remaining: 1.25s
126: learn: 0.4154545 total: 181ms remaining: 1.25s
127: learn: 0.4149847 total: 183ms remaining: 1.25s
128: learn: 0.4146016 total: 184ms remaining: 1.24s
129: learn: 0.4138736 total: 186ms remaining: 1.24s
130: learn: 0.4130664 total: 187ms remaining: 1.24s
131: learn: 0.4127018 total: 189ms remaining: 1.24s
132: learn: 0.4119298 total: 190ms remaining: 1.24s
133: learn: 0.4113258 total: 191ms remaining: 1.24s
134: learn: 0.4108035 total: 193ms remaining: 1.24s
135: learn: 0.4103204 total: 194ms remaining: 1.23s
136: learn: 0.4097764 total: 196ms remaining: 1.24s
137: learn: 0.4095147 total: 199ms remaining: 1.24s
138: learn: 0.4091512 total: 201ms remaining: 1.24s
139: learn: 0.4086709 total: 202ms remaining: 1.24s
140: learn: 0.4082409 total: 205ms remaining: 1.25s
141: learn: 0.4076925 total: 207ms remaining: 1.25s
142: learn: 0.4073327 total: 208ms remaining: 1.25s
143: learn: 0.4067616 total: 210ms remaining: 1.25s
144: learn: 0.4060920 total: 212ms remaining: 1.25s
145: learn: 0.4055673 total: 213ms remaining: 1.25s
146: learn: 0.4049542 total: 215ms remaining: 1.25s
147: learn: 0.4045568 total: 217ms remaining: 1.25s
148: learn: 0.4041748 total: 218ms remaining: 1.25s
149: learn: 0.4037794 total: 220ms remaining: 1.25s
150: learn: 0.4032580 total: 222ms remaining: 1.25s
151: learn: 0.4026045 total: 223ms remaining: 1.25s
152: learn: 0.4024176 total: 225ms remaining: 1.25s
153: learn: 0.4018101 total: 227ms remaining: 1.24s
154: learn: 0.4016745 total: 227ms remaining: 1.24s
155: learn: 0.4010508 total: 229ms remaining: 1.24s
156: learn: 0.4005968 total: 231ms remaining: 1.24s
157: learn: 0.4002601 total: 233ms remaining: 1.24s
158: learn: 0.3998087 total: 234ms remaining: 1.24s
159: learn: 0.3995030 total: 236ms remaining: 1.24s
160: learn: 0.3990176 total: 237ms remaining: 1.23s
161: learn: 0.3986733 total: 238ms remaining: 1.23s
162: learn: 0.3985094 total: 239ms remaining: 1.23s
163: learn: 0.3981641 total: 240ms remaining: 1.22s
164: learn: 0.3979441 total: 241ms remaining: 1.22s
165: learn: 0.3977208 total: 244ms remaining: 1.22s
166: learn: 0.3974086 total: 246ms remaining: 1.23s
167: learn: 0.3971029 total: 248ms remaining: 1.23s
168: learn: 0.3968692 total: 249ms remaining: 1.23s
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169: learn: 0.3965079 total: 251ms remaining: 1.22s
170: learn: 0.3962005 total: 253ms remaining: 1.23s
171: learn: 0.3957390 total: 254ms remaining: 1.22s
172: learn: 0.3952936 total: 256ms remaining: 1.22s
173: learn: 0.3949103 total: 257ms remaining: 1.22s
174: learn: 0.3944509 total: 258ms remaining: 1.22s
175: learn: 0.3941401 total: 260ms remaining: 1.22s
176: learn: 0.3939093 total: 261ms remaining: 1.21s
177: learn: 0.3935417 total: 262ms remaining: 1.21s
178: learn: 0.3931064 total: 264ms remaining: 1.21s
179: learn: 0.3927642 total: 265ms remaining: 1.21s
180: learn: 0.3926372 total: 266ms remaining: 1.2s
181: learn: 0.3921673 total: 267ms remaining: 1.2s
182: learn: 0.3919263 total: 268ms remaining: 1.2s
183: learn: 0.3917795 total: 270ms remaining: 1.2s
184: learn: 0.3910897 total: 271ms remaining: 1.2s
185: learn: 0.3909125 total: 273ms remaining: 1.2s
186: learn: 0.3905845 total: 275ms remaining: 1.19s
187: learn: 0.3901354 total: 276ms remaining: 1.19s
188: learn: 0.3899308 total: 278ms remaining: 1.19s
189: learn: 0.3896043 total: 279ms remaining: 1.19s
190: learn: 0.3892538 total: 281ms remaining: 1.19s
191: learn: 0.3889380 total: 283ms remaining: 1.19s
192: learn: 0.3885610 total: 284ms remaining: 1.19s
193: learn: 0.3882863 total: 286ms remaining: 1.19s
194: learn: 0.3878854 total: 287ms remaining: 1.19s
195: learn: 0.3875447 total: 288ms remaining: 1.18s
196: learn: 0.3874372 total: 289ms remaining: 1.18s
197: learn: 0.3870530 total: 291ms remaining: 1.18s
198: learn: 0.3868049 total: 293ms remaining: 1.18s
199: learn: 0.3865737 total: 294ms remaining: 1.18s
200: learn: 0.3863799 total: 296ms remaining: 1.18s
201: learn: 0.3858451 total: 298ms remaining: 1.18s
202: learn: 0.3856617 total: 301ms remaining: 1.18s
203: learn: 0.3854151 total: 302ms remaining: 1.18s
204: learn: 0.3852737 total: 304ms remaining: 1.18s
205: learn: 0.3850484 total: 306ms remaining: 1.18s
206: learn: 0.3848737 total: 308ms remaining: 1.18s
207: learn: 0.3846017 total: 309ms remaining: 1.18s
208: learn: 0.3843079 total: 311ms remaining: 1.18s
209: learn: 0.3840249 total: 312ms remaining: 1.17s
210: learn: 0.3835814 total: 314ms remaining: 1.17s
211: learn: 0.3834562 total: 315ms remaining: 1.17s
212: learn: 0.3832849 total: 317ms remaining: 1.17s
213: learn: 0.3829558 total: 319ms remaining: 1.17s
214: learn: 0.3825862 total: 320ms remaining: 1.17s
215: learn: 0.3822827 total: 322ms remaining: 1.17s
216: learn: 0.3819357 total: 323ms remaining: 1.16s
217: learn: 0.3817114 total: 325ms remaining: 1.16s
218: learn: 0.3813598 total: 326ms remaining: 1.16s
219: learn: 0.3811191 total: 328ms remaining: 1.16s
220: learn: 0.3810240 total: 329ms remaining: 1.16s
221: learn: 0.3807463 total: 331ms remaining: 1.16s
222: learn: 0.3805460 total: 332ms remaining: 1.16s
223: learn: 0.3802177 total: 334ms remaining: 1.16s
224: learn: 0.3800666 total: 335ms remaining: 1.15s
225: learn: 0.3798269 total: 336ms remaining: 1.15s
226: learn: 0.3793985 total: 338ms remaining: 1.15s
227: learn: 0.3790721 total: 339ms remaining: 1.15s
228: learn: 0.3786904 total: 340ms remaining: 1.15s
229: learn: 0.3784898 total: 342ms remaining: 1.15s
230: learn: 0.3783903 total: 344ms remaining: 1.14s
231: learn: 0.3780328 total: 345ms remaining: 1.14s
232: learn: 0.3778548 total: 346ms remaining: 1.14s
233: learn: 0.3775097 total: 347ms remaining: 1.14s
234: learn: 0.3773275 total: 349ms remaining: 1.14s
235: learn: 0.3770105 total: 350ms remaining: 1.13s
236: learn: 0.3767716 total: 351ms remaining: 1.13s
237: learn: 0.3767114 total: 352ms remaining: 1.13s
238: learn: 0.3764615 total: 354ms remaining: 1.13s
239: learn: 0.3762802 total: 355ms remaining: 1.12s
240: learn: 0.3760081 total: 357ms remaining: 1.12s
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241: learn: 0.3756641 total: 358ms remaining: 1.12s
242: learn: 0.3754938 total: 360ms remaining: 1.12s
243: learn: 0.3752206 total: 361ms remaining: 1.12s
244: learn: 0.3750089 total: 363ms remaining: 1.12s
245: learn: 0.3747303 total: 364ms remaining: 1.11s
246: learn: 0.3744595 total: 366ms remaining: 1.11s
247: learn: 0.3742590 total: 367ms remaining: 1.11s
248: learn: 0.3739645 total: 369ms remaining: 1.11s
249: learn: 0.3738469 total: 370ms remaining: 1.11s
250: learn: 0.3735435 total: 372ms remaining: 1.11s
251: learn: 0.3734369 total: 374ms remaining: 1.11s
252: learn: 0.3733170 total: 375ms remaining: 1.11s
253: learn: 0.3732054 total: 377ms remaining: 1.11s
254: learn: 0.3730261 total: 378ms remaining: 1.1s
255: learn: 0.3727287 total: 380ms remaining: 1.1s
256: learn: 0.3726284 total: 381ms remaining: 1.1s
257: learn: 0.3723686 total: 382ms remaining: 1.1s
258: learn: 0.3718880 total: 384ms remaining: 1.1s
259: learn: 0.3717001 total: 387ms remaining: 1.1s
260: learn: 0.3714900 total: 389ms remaining: 1.1s
261: learn: 0.3714231 total: 392ms remaining: 1.1s
262: learn: 0.3712471 total: 394ms remaining: 1.1s
263: learn: 0.3707569 total: 398ms remaining: 1.11s
264: learn: 0.3704522 total: 400ms remaining: 1.11s
265: learn: 0.3703470 total: 401ms remaining: 1.11s
266: learn: 0.3701631 total: 402ms remaining: 1.1s
267: learn: 0.3699508 total: 403ms remaining: 1.1s
268: learn: 0.3695868 total: 405ms remaining: 1.1s
269: learn: 0.3694010 total: 406ms remaining: 1.1s
270: learn: 0.3692719 total: 408ms remaining: 1.1s
271: learn: 0.3690948 total: 410ms remaining: 1.1s
272: learn: 0.3690314 total: 412ms remaining: 1.09s
273: learn: 0.3687061 total: 413ms remaining: 1.09s
274: learn: 0.3686732 total: 414ms remaining: 1.09s
275: learn: 0.3685631 total: 416ms remaining: 1.09s
276: learn: 0.3683384 total: 417ms remaining: 1.09s
277: learn: 0.3680407 total: 419ms remaining: 1.09s
278: learn: 0.3678471 total: 421ms remaining: 1.09s
279: learn: 0.3676178 total: 422ms remaining: 1.08s
280: learn: 0.3674435 total: 424ms remaining: 1.08s
281: learn: 0.3672920 total: 426ms remaining: 1.08s
282: learn: 0.3671225 total: 427ms remaining: 1.08s
283: learn: 0.3669922 total: 429ms remaining: 1.08s
284: learn: 0.3667081 total: 431ms remaining: 1.08s
285: learn: 0.3666265 total: 433ms remaining: 1.08s
286: learn: 0.3663534 total: 434ms remaining: 1.08s
287: learn: 0.3660859 total: 436ms remaining: 1.08s
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289: learn: 0.3657920 total: 439ms remaining: 1.07s
290: learn: 0.3656281 total: 440ms remaining: 1.07s
291: learn: 0.3653163 total: 442ms remaining: 1.07s
292: learn: 0.3651564 total: 444ms remaining: 1.07s
293: learn: 0.3649589 total: 446ms remaining: 1.07s
294: learn: 0.3648226 total: 448ms remaining: 1.07s
295: learn: 0.3645902 total: 450ms remaining: 1.07s
296: learn: 0.3644579 total: 451ms remaining: 1.07s
297: learn: 0.3643714 total: 453ms remaining: 1.07s
298: learn: 0.3641305 total: 455ms remaining: 1.06s
299: learn: 0.3640445 total: 456ms remaining: 1.06s
300: learn: 0.3639637 total: 458ms remaining: 1.06s
301: learn: 0.3637943 total: 460ms remaining: 1.06s
302: learn: 0.3637326 total: 462ms remaining: 1.06s
303: learn: 0.3635835 total: 464ms remaining: 1.06s
304: learn: 0.3634551 total: 468ms remaining: 1.06s
305: learn: 0.3632386 total: 470ms remaining: 1.07s
306: learn: 0.3631626 total: 473ms remaining: 1.07s
307: learn: 0.3629357 total: 475ms remaining: 1.07s
308: learn: 0.3628866 total: 478ms remaining: 1.07s
309: learn: 0.3627715 total: 480ms remaining: 1.07s
310: learn: 0.3626251 total: 482ms remaining: 1.07s
311: learn: 0.3626096 total: 484ms remaining: 1.07s
312: learn: 0.3624936 total: 485ms remaining: 1.06s
```

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313: learn: 0.3622954 total: 487ms remaining: 1.06s
314: learn: 0.3621254 total: 489ms remaining: 1.06s
315: learn: 0.3619557 total: 490ms remaining: 1.06s
316: learn: 0.3617591 total: 492ms remaining: 1.06s
317: learn: 0.3615950 total: 494ms remaining: 1.06s
318: learn: 0.3614097 total: 495ms remaining: 1.06s
319: learn: 0.3612930 total: 496ms remaining: 1.05s
320: learn: 0.3612175 total: 498ms remaining: 1.05s
321: learn: 0.3611082 total: 499ms remaining: 1.05s
322: learn: 0.3608556 total: 501ms remaining: 1.05s
323: learn: 0.3608406 total: 501ms remaining: 1.05s
324: learn: 0.3608393 total: 503ms remaining: 1.04s
325: learn: 0.3607951 total: 504ms remaining: 1.04s
326: learn: 0.3606779 total: 506ms remaining: 1.04s
327: learn: 0.3605516 total: 508ms remaining: 1.04s
328: learn: 0.3604407 total: 509ms remaining: 1.04s
329: learn: 0.3603070 total: 511ms remaining: 1.04s
330: learn: 0.3602304 total: 514ms remaining: 1.04s
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339: learn: 0.3591854 total: 530ms remaining: 1.03s
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350: learn: 0.3576036 total: 556ms remaining: 1.03s
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353: learn: 0.3573238 total: 560ms remaining: 1.02s
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356: learn: 0.3569700 total: 565ms remaining: 1.02s
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359: learn: 0.3567546 total: 569ms remaining: 1.01s
360: learn: 0.3564881 total: 570ms remaining: 1.01s
361: learn: 0.3563379 total: 571ms remaining: 1.01s
362: learn: 0.3560719 total: 573ms remaining: 1s
363: learn: 0.3559951 total: 574ms remaining: 1s
364: learn: 0.3559124 total: 577ms remaining: 1s
365: learn: 0.3557834 total: 579ms remaining: 1s
366: learn: 0.3555739 total: 581ms remaining: 1s
367: learn: 0.3554660 total: 583ms remaining: 1s
368: learn: 0.3552914 total: 585ms remaining: 1s
369: learn: 0.3551602 total: 587ms remaining: 999ms
370: learn: 0.3551124 total: 588ms remaining: 998ms
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373: learn: 0.3548575 total: 593ms remaining: 993ms
374: learn: 0.3547309 total: 595ms remaining: 992ms
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379: learn: 0.3537295 total: 605ms remaining: 987ms
380: learn: 0.3536052 total: 607ms remaining: 986ms
381: learn: 0.3534322 total: 609ms remaining: 986ms
382: learn: 0.3532317 total: 611ms remaining: 985ms
383: learn: 0.3530407 total: 613ms remaining: 983ms
384: learn: 0.3530220 total: 614ms remaining: 981ms
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385: learn: 0.3527908 total: 616ms remaining: 980ms
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387: learn: 0.3525300 total: 619ms remaining: 976ms
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394: learn: 0.3518815 total: 629ms remaining: 963ms
395: learn: 0.3516992 total: 630ms remaining: 961ms
396: learn: 0.3514507 total: 631ms remaining: 959ms
397: learn: 0.3512843 total: 633ms remaining: 957ms
398: learn: 0.3511843 total: 634ms remaining: 955ms
399: learn: 0.3510754 total: 635ms remaining: 953ms
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416: learn: 0.3492530 total: 660ms remaining: 922ms
417: learn: 0.3490196 total: 661ms remaining: 921ms
418: learn: 0.3489021 total: 663ms remaining: 919ms
419: learn: 0.3488263 total: 664ms remaining: 917ms
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423: learn: 0.3481565 total: 670ms remaining: 910ms
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425: learn: 0.3478757 total: 673ms remaining: 907ms
426: learn: 0.3478057 total: 674ms remaining: 905ms
427: learn: 0.3477260 total: 675ms remaining: 902ms
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433: learn: 0.3468537 total: 683ms remaining: 891ms
434: learn: 0.3466170 total: 685ms remaining: 890ms
435: learn: 0.3465063 total: 686ms remaining: 888ms
436: learn: 0.3463905 total: 688ms remaining: 886ms
437: learn: 0.3463188 total: 689ms remaining: 885ms
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454: learn: 0.3440714 total: 712ms remaining: 853ms
455: learn: 0.3440250 total: 714ms remaining: 852ms
456: learn: 0.3439470 total: 716ms remaining: 851ms
```

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```

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```

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824: learn: 0.3047650 total: 1.32s remaining: 281ms
825: learn: 0.3046548 total: 1.33s remaining: 279ms
826: learn: 0.3045741 total: 1.33s remaining: 278ms
827: learn: 0.3044105 total: 1.33s remaining: 276ms
828: learn: 0.3042720 total: 1.33s remaining: 274ms
829: learn: 0.3041899 total: 1.33s remaining: 273ms
830: learn: 0.3039934 total: 1.33s remaining: 271ms
831: learn: 0.3038754 total: 1.33s remaining: 270ms
832: learn: 0.3038440 total: 1.34s remaining: 268ms
833: learn: 0.3037903 total: 1.34s remaining: 267ms
834: learn: 0.3037473 total: 1.34s remaining: 265ms
835: learn: 0.3034984 total: 1.34s remaining: 263ms
836: learn: 0.3032751 total: 1.35s remaining: 262ms
837: learn: 0.3030758 total: 1.35s remaining: 261ms
838: learn: 0.3029958 total: 1.35s remaining: 259ms
839: learn: 0.3029739 total: 1.35s remaining: 258ms
840: learn: 0.3028560 total: 1.35s remaining: 256ms
841: learn: 0.3027153 total: 1.36s remaining: 255ms
842: learn: 0.3026453 total: 1.36s remaining: 253ms
843: learn: 0.3025015 total: 1.36s remaining: 251ms
844: learn: 0.3023484 total: 1.36s remaining: 250ms
845: learn: 0.3022939 total: 1.36s remaining: 248ms
846: learn: 0.3021236 total: 1.37s remaining: 247ms
847: learn: 0.3019524 total: 1.37s remaining: 245ms
848: learn: 0.3018402 total: 1.37s remaining: 244ms
849: learn: 0.3017370 total: 1.37s remaining: 242ms
850: learn: 0.3015868 total: 1.38s remaining: 241ms
851: learn: 0.3013701 total: 1.38s remaining: 239ms
852: learn: 0.3013258 total: 1.38s remaining: 238ms
853: learn: 0.3012563 total: 1.38s remaining: 236ms
854: learn: 0.3010529 total: 1.38s remaining: 234ms
855: learn: 0.3010051 total: 1.38s remaining: 233ms
856: learn: 0.3008890 total: 1.39s remaining: 231ms
857: learn: 0.3008483 total: 1.39s remaining: 230ms
858: learn: 0.3007844 total: 1.39s remaining: 228ms
859: learn: 0.3006602 total: 1.39s remaining: 226ms
860: learn: 0.3005718 total: 1.39s remaining: 225ms
861: learn: 0.3005219 total: 1.39s remaining: 223ms
862: learn: 0.3004329 total: 1.4s remaining: 221ms
863: learn: 0.3003559 total: 1.4s remaining: 220ms
864: learn: 0.3001592 total: 1.4s remaining: 218ms
865: learn: 0.2999801 total: 1.4s remaining: 217ms
866: learn: 0.2998704 total: 1.4s remaining: 215ms
867: learn: 0.2996464 total: 1.4s remaining: 214ms
868: learn: 0.2994913 total: 1.41s remaining: 212ms
869: learn: 0.2994520 total: 1.41s remaining: 210ms
870: learn: 0.2993243 total: 1.41s remaining: 209ms
871: learn: 0.2990616 total: 1.41s remaining: 207ms
872: learn: 0.2989432 total: 1.41s remaining: 206ms
873: learn: 0.2988237 total: 1.42s remaining: 204ms
874: learn: 0.2987411 total: 1.42s remaining: 203ms
875: learn: 0.2986353 total: 1.42s remaining: 201ms
876: learn: 0.2986016 total: 1.42s remaining: 199ms
877: learn: 0.2985261 total: 1.42s remaining: 198ms
878: learn: 0.2984933 total: 1.43s remaining: 196ms
879: learn: 0.2982706 total: 1.43s remaining: 195ms
880: learn: 0.2982054 total: 1.44s remaining: 194ms
881: learn: 0.2981800 total: 1.44s remaining: 192ms
882: learn: 0.2980432 total: 1.44s remaining: 191ms
883: learn: 0.2979234 total: 1.44s remaining: 189ms
884: learn: 0.2977725 total: 1.45s remaining: 188ms
885: learn: 0.2976101 total: 1.45s remaining: 186ms
886: learn: 0.2975008 total: 1.45s remaining: 185ms
887: learn: 0.2974071 total: 1.45s remaining: 183ms
888: learn: 0.2971836 total: 1.45s remaining: 182ms
```

```
889: learn: 0.2971120 total: 1.46s remaining: 180ms
890: learn: 0.2970463 total: 1.46s remaining: 178ms
891: learn: 0.2969911 total: 1.47s remaining: 177ms
892: learn: 0.2969233 total: 1.47s remaining: 176ms
893: learn: 0.2968461 total: 1.47s remaining: 175ms
894: learn: 0.2967693 total: 1.47s remaining: 173ms
895: learn: 0.2967488 total: 1.48s remaining: 172ms
896: learn: 0.2966949 total: 1.48s remaining: 170ms
897: learn: 0.2965729 total: 1.48s remaining: 168ms
898: learn: 0.2963859 total: 1.48s remaining: 167ms
899: learn: 0.2962101 total: 1.49s remaining: 165ms
900: learn: 0.2960450 total: 1.49s remaining: 163ms
901: learn: 0.2958847 total: 1.49s remaining: 162ms
902: learn: 0.2957328 total: 1.49s remaining: 160ms
903: learn: 0.2955944 total: 1.49s remaining: 159ms
904: learn: 0.2954794 total: 1.5s remaining: 157ms
905: learn: 0.2954135 total: 1.5s remaining: 155ms
906: learn: 0.2953295 total: 1.5s remaining: 154ms
907: learn: 0.2952524 total: 1.5s remaining: 152ms
908: learn: 0.2951761 total: 1.5s remaining: 150ms
909: learn: 0.2950953 total: 1.5s remaining: 149ms
910: learn: 0.2950088 total: 1.5s remaining: 147ms
911: learn: 0.2949356 total: 1.51s remaining: 146ms
912: learn: 0.2948414 total: 1.51s remaining: 144ms
913: learn: 0.2948075 total: 1.51s remaining: 142ms
914: learn: 0.2947313 total: 1.51s remaining: 141ms
915: learn: 0.2946884 total: 1.52s remaining: 139ms
916: learn: 0.2946202 total: 1.52s remaining: 138ms
917: learn: 0.2945472 total: 1.52s remaining: 136ms
918: learn: 0.2944472 total: 1.52s remaining: 134ms
919: learn: 0.2943843 total: 1.53s remaining: 133ms
920: learn: 0.2942975 total: 1.53s remaining: 131ms
921: learn: 0.2942359 total: 1.53s remaining: 130ms
922: learn: 0.2941814 total: 1.53s remaining: 128ms
923: learn: 0.2940696 total: 1.53s remaining: 126ms
924: learn: 0.2939733 total: 1.53s remaining: 125ms
925: learn: 0.2939345 total: 1.54s remaining: 123ms
926: learn: 0.2937861 total: 1.54s remaining: 121ms
927: learn: 0.2936961 total: 1.54s remaining: 120ms
928: learn: 0.2936360 total: 1.54s remaining: 118ms
929: learn: 0.2935900 total: 1.55s remaining: 116ms
930: learn: 0.2935105 total: 1.55s remaining: 115ms
931: learn: 0.2933967 total: 1.55s remaining: 113ms
932: learn: 0.2933282 total: 1.55s remaining: 111ms
933: learn: 0.2932028 total: 1.55s remaining: 110ms
934: learn: 0.2930712 total: 1.55s remaining: 108ms
935: learn: 0.2929937 total: 1.56s remaining: 106ms
936: learn: 0.2929241 total: 1.56s remaining: 105ms
937: learn: 0.2928770 total: 1.56s remaining: 103ms
938: learn: 0.2927836 total: 1.56s remaining: 101ms
939: learn: 0.2927347 total: 1.56s remaining: 99.7ms
940: learn: 0.2926288 total: 1.56s remaining: 98ms
941: learn: 0.2924868 total: 1.56s remaining: 96.3ms
942: learn: 0.2924515 total: 1.57s remaining: 94.7ms
943: learn: 0.2923798 total: 1.57s remaining: 93.1ms
944: learn: 0.2922451 total: 1.57s remaining: 91.4ms
945: learn: 0.2921760 total: 1.57s remaining: 89.8ms
946: learn: 0.2921145 total: 1.57s remaining: 88.1ms
947: learn: 0.2920611 total: 1.57s remaining: 86.4ms
948: learn: 0.2918803 total: 1.58s remaining: 84.8ms
949: learn: 0.2917292 total: 1.58s remaining: 83.1ms
950: learn: 0.2916504 total: 1.58s remaining: 81.5ms
951: learn: 0.2915321 total: 1.58s remaining: 79.9ms
952: learn: 0.2912550 total: 1.58s remaining: 78.2ms
953: learn: 0.2911744 total: 1.59s remaining: 76.6ms
954: learn: 0.2911045 total: 1.59s remaining: 74.9ms
955: learn: 0.2908918 total: 1.59s remaining: 73.3ms
956: learn: 0.2907989 total: 1.59s remaining: 71.6ms
957: learn: 0.2907326 total: 1.59s remaining: 69.9ms
958: learn: 0.2906733 total: 1.6s remaining: 68.3ms
959: learn: 0.2905895 total: 1.6s remaining: 66.6ms
960: learn: 0.2904119 total: 1.6s remaining: 65ms
```

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961: learn: 0.2903096 total: 1.6s remaining: 63.3ms
962: learn: 0.2901985 total: 1.6s remaining: 61.6ms
963: learn: 0.2901301 total: 1.61s remaining: 60ms
964: learn: 0.2900126 total: 1.61s remaining: 58.4ms
965: learn: 0.2899104 total: 1.61s remaining: 56.8ms
966: learn: 0.2898391 total: 1.61s remaining: 55.1ms
967: learn: 0.2898340 total: 1.61s remaining: 53.4ms
968: learn: 0.2897642 total: 1.62s remaining: 51.7ms
969: learn: 0.2897209 total: 1.62s remaining: 50.1ms
970: learn: 0.2896765 total: 1.62s remaining: 48.4ms
971: learn: 0.2896066 total: 1.62s remaining: 46.7ms
972: learn: 0.2895831 total: 1.62s remaining: 45.1ms
973: learn: 0.2895145 total: 1.63s remaining: 43.4ms
974: learn: 0.2893553 total: 1.63s remaining: 41.7ms
975: learn: 0.2891521 total: 1.63s remaining: 40.1ms
976: learn: 0.2890310 total: 1.63s remaining: 38.5ms
977: learn: 0.2889559 total: 1.64s remaining: 36.8ms
978: learn: 0.2889107 total: 1.64s remaining: 35.1ms
979: learn: 0.2888706 total: 1.64s remaining: 33.4ms
980: learn: 0.2887320 total: 1.64s remaining: 31.8ms
981: learn: 0.2886445 total: 1.64s remaining: 30.1ms
982: learn: 0.2885879 total: 1.64s remaining: 28.4ms
983: learn: 0.2884960 total: 1.65s remaining: 26.8ms
984: learn: 0.2884451 total: 1.65s remaining: 25.1ms
985: learn: 0.2882826 total: 1.65s remaining: 23.4ms
986: learn: 0.2881422 total: 1.65s remaining: 21.8ms
987: learn: 0.2880453 total: 1.65s remaining: 20.1ms
988: learn: 0.2879409 total: 1.66s remaining: 18.4ms
989: learn: 0.2879200 total: 1.66s remaining: 16.7ms
990: learn: 0.2878518 total: 1.66s remaining: 15.1ms
991: learn: 0.2877646 total: 1.66s remaining: 13.4ms
992: learn: 0.2877189 total: 1.66s remaining: 11.7ms
993: learn: 0.2876368 total: 1.67s remaining: 10.1ms
994: learn: 0.2875541 total: 1.67s remaining: 8.38ms
995: learn: 0.2875010 total: 1.67s remaining: 6.7ms
996: learn: 0.2873875 total: 1.67s remaining: 5.03ms
997: learn: 0.2873415 total: 1.68s remaining: 3.36ms
998: learn: 0.2872583 total: 1.68s remaining: 1.68ms
999: learn: 0.2871858 total: 1.68s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6863846 total: 1.52ms remaining: 1.52s
1: learn: 0.6828461 total: 2.39ms remaining: 1.19s
2: learn: 0.6785656 total: 3.76ms remaining: 1.25s
3: learn: 0.6738271 total: 5.13ms remaining: 1.28s
4: learn: 0.6673597 total: 6.72ms remaining: 1.34s
5: learn: 0.6615987 total: 8.07ms remaining: 1.34s
6: learn: 0.6558006 total: 10.8ms remaining: 1.53s
7: learn: 0.6499328 total: 12.3ms remaining: 1.53s
8: learn: 0.6446133 total: 14.3ms remaining: 1.57s
9: learn: 0.6394966 total: 16.3ms remaining: 1.62s
10: learn: 0.6361806 total: 17.9ms remaining: 1.61s
11: learn: 0.6316201 total: 19.5ms remaining: 1.61s
12: learn: 0.6268850 total: 20.9ms remaining: 1.59s
13: learn: 0.6221803 total: 22.2ms remaining: 1.57s
14: learn: 0.6174166 total: 24ms remaining: 1.57s
15: learn: 0.6135923 total: 25.7ms remaining: 1.58s
16: learn: 0.6087086 total: 27.1ms remaining: 1.57s
17: learn: 0.6040934 total: 29ms remaining: 1.58s
18: learn: 0.6003858 total: 30.4ms remaining: 1.57s
19: learn: 0.5960078 total: 31.8ms remaining: 1.56s
20: learn: 0.5917568 total: 33.5ms remaining: 1.56s
21: learn: 0.5895572 total: 34.6ms remaining: 1.54s
22: learn: 0.5854647 total: 36.5ms remaining: 1.55s
23: learn: 0.5813575 total: 38.7ms remaining: 1.57s
24: learn: 0.5769566 total: 40.1ms remaining: 1.56s
25: learn: 0.5740874 total: 41.7ms remaining: 1.56s
26: learn: 0.5699505 total: 43.3ms remaining: 1.56s
27: learn: 0.5661941 total: 44.8ms remaining: 1.55s
28: learn: 0.5639133 total: 46.6ms remaining: 1.56s
29: learn: 0.5599821 total: 48.6ms remaining: 1.57s
30: learn: 0.5565921 total: 50.5ms remaining: 1.58s
31: learn: 0.5528176 total: 53.2ms remaining: 1.61s
```

```
32: learn: 0.5494683 total: 55.6ms remaining: 1.63s
33: learn: 0.5463367 total: 58.2ms remaining: 1.65s
34: learn: 0.5426637 total: 60.4ms remaining: 1.66s
35: learn: 0.5395146 total: 62.8ms remaining: 1.68s
36: learn: 0.5363034 total: 64.8ms remaining: 1.69s
37: learn: 0.5330497 total: 67.7ms remaining: 1.71s
38: learn: 0.5303347 total: 69.8ms remaining: 1.72s
39: learn: 0.5278021 total: 70.9ms remaining: 1.7s
40: learn: 0.5254604 total: 72.3ms remaining: 1.69s
41: learn: 0.5229134 total: 73.6ms remaining: 1.68s
42: learn: 0.5204401 total: 75.3ms remaining: 1.68s
43: learn: 0.5191403 total: 76ms remaining: 1.65s
44: learn: 0.5163637 total: 77.6ms remaining: 1.65s
45: learn: 0.5136080 total: 79.4ms remaining: 1.65s
46: learn: 0.5108462 total: 81.5ms remaining: 1.65s
47: learn: 0.5096642 total: 82.6ms remaining: 1.64s
48: learn: 0.5071638 total: 84ms remaining: 1.63s
49: learn: 0.5046790 total: 86ms remaining: 1.63s
50: learn: 0.5020670 total: 88.2ms remaining: 1.64s
51: learn: 0.4994401 total: 90ms remaining: 1.64s
52: learn: 0.4970046 total: 91.4ms remaining: 1.63s
53: learn: 0.4951030 total: 94ms remaining: 1.65s
54: learn: 0.4932620 total: 95.9ms remaining: 1.65s
55: learn: 0.4911686 total: 99.6ms remaining: 1.68s
56: learn: 0.4890195 total: 101ms remaining: 1.68s
57: learn: 0.4865130 total: 104ms remaining: 1.69s
58: learn: 0.4845859 total: 105ms remaining: 1.68s
59: learn: 0.4829635 total: 107ms remaining: 1.68s
60: learn: 0.4812593 total: 110ms remaining: 1.69s
61: learn: 0.4791293 total: 113ms remaining: 1.71s
62: learn: 0.4771737 total: 115ms remaining: 1.71s
63: learn: 0.4751171 total: 118ms remaining: 1.73s
64: learn: 0.4736772 total: 120ms remaining: 1.73s
65: learn: 0.4716730 total: 123ms remaining: 1.74s
66: learn: 0.4701667 total: 125ms remaining: 1.74s
67: learn: 0.4683325 total: 128ms remaining: 1.76s
68: learn: 0.4663032 total: 132ms remaining: 1.78s
69: learn: 0.4643970 total: 135ms remaining: 1.79s
70: learn: 0.4625573 total: 139ms remaining: 1.82s
71: learn: 0.4606265 total: 141ms remaining: 1.82s
72: learn: 0.4587092 total: 145ms remaining: 1.84s
73: learn: 0.4574497 total: 146ms remaining: 1.83s
74: learn: 0.4560736 total: 149ms remaining: 1.83s
75: learn: 0.4545287 total: 151ms remaining: 1.84s
76: learn: 0.4531618 total: 153ms remaining: 1.83s
77: learn: 0.4515012 total: 155ms remaining: 1.83s
78: learn: 0.4505569 total: 157ms remaining: 1.82s
79: learn: 0.4488735 total: 161ms remaining: 1.85s
80: learn: 0.4476441 total: 164ms remaining: 1.86s
81: learn: 0.4463928 total: 167ms remaining: 1.87s
82: learn: 0.4451608 total: 169ms remaining: 1.86s
83: learn: 0.4440456 total: 171ms remaining: 1.86s
84: learn: 0.4430819 total: 172ms remaining: 1.85s
85: learn: 0.4414940 total: 179ms remaining: 1.9s
86: learn: 0.4403990 total: 181ms remaining: 1.9s
87: learn: 0.4394783 total: 183ms remaining: 1.89s
88: learn: 0.4384061 total: 184ms remaining: 1.89s
89: learn: 0.4369584 total: 186ms remaining: 1.88s
90: learn: 0.4360689 total: 189ms remaining: 1.89s
91: learn: 0.4350361 total: 191ms remaining: 1.89s
92: learn: 0.4342172 total: 196ms remaining: 1.91s
93: learn: 0.4331249 total: 200ms remaining: 1.93s
94: learn: 0.4323795 total: 206ms remaining: 1.96s
95: learn: 0.4314921 total: 208ms remaining: 1.96s
96: learn: 0.4303960 total: 210ms remaining: 1.95s
97: learn: 0.4300274 total: 211ms remaining: 1.95s
98: learn: 0.4293574 total: 213ms remaining: 1.94s
99: learn: 0.4286415 total: 216ms remaining: 1.94s
100: learn: 0.4276149 total: 218ms remaining: 1.94s
101: learn: 0.4267512 total: 220ms remaining: 1.93s
102: learn: 0.4258551 total: 221ms remaining: 1.93s
103: learn: 0.4250638 total: 223ms remaining: 1.92s
```

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104: learn: 0.4242015 total: 225ms remaining: 1.92s
105: learn: 0.4233017 total: 227ms remaining: 1.92s
106: learn: 0.4224163 total: 229ms remaining: 1.91s
107: learn: 0.4214594 total: 231ms remaining: 1.91s
108: learn: 0.4206729 total: 232ms remaining: 1.89s
109: learn: 0.4197603 total: 233ms remaining: 1.89s
110: learn: 0.4187970 total: 234ms remaining: 1.88s
111: learn: 0.4182438 total: 236ms remaining: 1.87s
112: learn: 0.4173537 total: 237ms remaining: 1.86s
113: learn: 0.4163899 total: 238ms remaining: 1.85s
114: learn: 0.4156666 total: 240ms remaining: 1.85s
115: learn: 0.4149208 total: 243ms remaining: 1.85s
116: learn: 0.4140050 total: 244ms remaining: 1.84s
117: learn: 0.4135220 total: 246ms remaining: 1.84s
118: learn: 0.4128048 total: 247ms remaining: 1.83s
119: learn: 0.4120957 total: 249ms remaining: 1.83s
120: learn: 0.4119626 total: 250ms remaining: 1.82s
121: learn: 0.4113937 total: 252ms remaining: 1.81s
122: learn: 0.4105380 total: 253ms remaining: 1.8s
123: learn: 0.4102363 total: 254ms remaining: 1.8s
124: learn: 0.4100296 total: 255ms remaining: 1.78s
125: learn: 0.4095359 total: 256ms remaining: 1.78s
126: learn: 0.4087203 total: 257ms remaining: 1.77s
127: learn: 0.4082867 total: 259ms remaining: 1.76s
128: learn: 0.4079931 total: 260ms remaining: 1.76s
129: learn: 0.4072937 total: 262ms remaining: 1.75s
130: learn: 0.4064859 total: 263ms remaining: 1.75s
131: learn: 0.4058645 total: 265ms remaining: 1.74s
132: learn: 0.4052609 total: 267ms remaining: 1.74s
133: learn: 0.4046920 total: 268ms remaining: 1.73s
134: learn: 0.4040456 total: 270ms remaining: 1.73s
135: learn: 0.4037046 total: 271ms remaining: 1.72s
136: learn: 0.4033211 total: 274ms remaining: 1.73s
137: learn: 0.4025765 total: 276ms remaining: 1.73s
138: learn: 0.4021219 total: 278ms remaining: 1.72s
139: learn: 0.4015948 total: 279ms remaining: 1.71s
140: learn: 0.4012847 total: 281ms remaining: 1.71s
141: learn: 0.4007420 total: 282ms remaining: 1.71s
142: learn: 0.4003508 total: 284ms remaining: 1.7s
143: learn: 0.3997628 total: 286ms remaining: 1.7s
144: learn: 0.3991634 total: 288ms remaining: 1.7s
145: learn: 0.3984172 total: 290ms remaining: 1.7s
146: learn: 0.3977468 total: 291ms remaining: 1.69s
147: learn: 0.3973055 total: 293ms remaining: 1.69s
148: learn: 0.3969206 total: 294ms remaining: 1.68s
149: learn: 0.3965601 total: 296ms remaining: 1.68s
150: learn: 0.3959588 total: 297ms remaining: 1.67s
151: learn: 0.3957052 total: 298ms remaining: 1.66s
152: learn: 0.3952730 total: 299ms remaining: 1.66s
153: learn: 0.3945927 total: 300ms remaining: 1.65s
154: learn: 0.3941823 total: 302ms remaining: 1.65s
155: learn: 0.3935390 total: 304ms remaining: 1.64s
156: learn: 0.3931319 total: 305ms remaining: 1.64s
157: learn: 0.3927103 total: 307ms remaining: 1.64s
158: learn: 0.3923945 total: 309ms remaining: 1.63s
159: learn: 0.3918895 total: 310ms remaining: 1.63s
160: learn: 0.3915955 total: 312ms remaining: 1.62s
161: learn: 0.3914177 total: 312ms remaining: 1.61s
162: learn: 0.3908409 total: 314ms remaining: 1.61s
163: learn: 0.3903865 total: 315ms remaining: 1.6s
164: learn: 0.3896620 total: 316ms remaining: 1.6s
165: learn: 0.3891090 total: 318ms remaining: 1.6s
166: learn: 0.3886846 total: 319ms remaining: 1.59s
167: learn: 0.3884974 total: 320ms remaining: 1.59s
168: learn: 0.3881731 total: 322ms remaining: 1.58s
169: learn: 0.3880911 total: 323ms remaining: 1.58s
170: learn: 0.3876291 total: 324ms remaining: 1.57s
171: learn: 0.3871897 total: 326ms remaining: 1.57s
172: learn: 0.3868802 total: 328ms remaining: 1.57s
173: learn: 0.3867839 total: 329ms remaining: 1.56s
174: learn: 0.3863581 total: 331ms remaining: 1.56s
175: learn: 0.3860178 total: 332ms remaining: 1.55s
```

```
176: learn: 0.3858008 total: 333ms remaining: 1.55s
177: learn: 0.3854511 total: 335ms remaining: 1.54s
178: learn: 0.3851571 total: 336ms remaining: 1.54s
179: learn: 0.3847453 total: 337ms remaining: 1.53s
180: learn: 0.3842593 total: 338ms remaining: 1.53s
181: learn: 0.3838828 total: 339ms remaining: 1.52s
182: learn: 0.3834501 total: 340ms remaining: 1.52s
183: learn: 0.3832375 total: 341ms remaining: 1.51s
184: learn: 0.3829076 total: 343ms remaining: 1.51s
185: learn: 0.3825343 total: 344ms remaining: 1.5s
186: learn: 0.3822131 total: 345ms remaining: 1.5s
187: learn: 0.3817425 total: 346ms remaining: 1.5s
188: learn: 0.3815099 total: 347ms remaining: 1.49s
189: learn: 0.3811408 total: 349ms remaining: 1.49s
190: learn: 0.3806911 total: 350ms remaining: 1.48s
191: learn: 0.3802553 total: 352ms remaining: 1.48s
192: learn: 0.3799202 total: 353ms remaining: 1.48s
193: learn: 0.3794444 total: 354ms remaining: 1.47s
194: learn: 0.3792336 total: 355ms remaining: 1.47s
195: learn: 0.3788714 total: 357ms remaining: 1.46s
196: learn: 0.3785905 total: 358ms remaining: 1.46s
197: learn: 0.3784269 total: 358ms remaining: 1.45s
198: learn: 0.3781372 total: 360ms remaining: 1.45s
199: learn: 0.3778529 total: 361ms remaining: 1.44s
200: learn: 0.3776693 total: 362ms remaining: 1.44s
201: learn: 0.3773131 total: 363ms remaining: 1.43s
202: learn: 0.3770443 total: 364ms remaining: 1.43s
203: learn: 0.3765878 total: 366ms remaining: 1.43s
204: learn: 0.3764694 total: 367ms remaining: 1.42s
205: learn: 0.3761124 total: 368ms remaining: 1.42s
206: learn: 0.3756817 total: 369ms remaining: 1.41s
207: learn: 0.3755571 total: 371ms remaining: 1.41s
208: learn: 0.3753337 total: 372ms remaining: 1.41s
209: learn: 0.3750645 total: 373ms remaining: 1.4s
210: learn: 0.3749541 total: 374ms remaining: 1.4s
211: learn: 0.3747360 total: 376ms remaining: 1.4s
212: learn: 0.3743760 total: 378ms remaining: 1.4s
213: learn: 0.3741446 total: 380ms remaining: 1.39s
214: learn: 0.3740263 total: 381ms remaining: 1.39s
215: learn: 0.3737502 total: 384ms remaining: 1.39s
216: learn: 0.3735957 total: 386ms remaining: 1.39s
217: learn: 0.3734228 total: 388ms remaining: 1.39s
218: learn: 0.3731446 total: 390ms remaining: 1.39s
219: learn: 0.3728735 total: 392ms remaining: 1.39s
220: learn: 0.3725326 total: 393ms remaining: 1.39s
221: learn: 0.3722814 total: 394ms remaining: 1.38s
222: learn: 0.3718962 total: 396ms remaining: 1.38s
223: learn: 0.3716794 total: 398ms remaining: 1.38s
224: learn: 0.3714581 total: 399ms remaining: 1.37s
225: learn: 0.3711691 total: 401ms remaining: 1.37s
226: learn: 0.3709826 total: 402ms remaining: 1.37s
227: learn: 0.3707051 total: 404ms remaining: 1.37s
228: learn: 0.3703966 total: 405ms remaining: 1.36s
229: learn: 0.3701807 total: 407ms remaining: 1.36s
230: learn: 0.3700276 total: 408ms remaining: 1.36s
231: learn: 0.3697845 total: 410ms remaining: 1.36s
232: learn: 0.3695055 total: 411ms remaining: 1.35s
233: learn: 0.3692557 total: 413ms remaining: 1.35s
234: learn: 0.3689322 total: 414ms remaining: 1.35s
235: learn: 0.3687009 total: 415ms remaining: 1.34s
236: learn: 0.3684057 total: 416ms remaining: 1.34s
237: learn: 0.3682305 total: 417ms remaining: 1.34s
238: learn: 0.3679897 total: 419ms remaining: 1.33s
239: learn: 0.3675998 total: 420ms remaining: 1.33s
240: learn: 0.3672045 total: 421ms remaining: 1.33s
241: learn: 0.3670243 total: 422ms remaining: 1.32s
242: learn: 0.3669029 total: 424ms remaining: 1.32s
243: learn: 0.3666563 total: 425ms remaining: 1.32s
244: learn: 0.3664208 total: 427ms remaining: 1.31s
245: learn: 0.3662161 total: 428ms remaining: 1.31s
246: learn: 0.3658429 total: 429ms remaining: 1.31s
247: learn: 0.3656162 total: 430ms remaining: 1.3s
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248: learn: 0.3652889 total: 431ms remaining: 1.3s
249: learn: 0.3650341 total: 432ms remaining: 1.29s
250: learn: 0.3648954 total: 433ms remaining: 1.29s
251: learn: 0.3646017 total: 434ms remaining: 1.29s
252: learn: 0.3642780 total: 435ms remaining: 1.28s
253: learn: 0.3640875 total: 437ms remaining: 1.28s
254: learn: 0.3638835 total: 438ms remaining: 1.28s
255: learn: 0.3637248 total: 439ms remaining: 1.27s
256: learn: 0.3635607 total: 440ms remaining: 1.27s
257: learn: 0.3632496 total: 441ms remaining: 1.27s
258: learn: 0.3630843 total: 442ms remaining: 1.26s
259: learn: 0.3628491 total: 444ms remaining: 1.26s
260: learn: 0.3627004 total: 445ms remaining: 1.26s
261: learn: 0.3623932 total: 447ms remaining: 1.26s
262: learn: 0.3622038 total: 448ms remaining: 1.25s
263: learn: 0.3620700 total: 449ms remaining: 1.25s
264: learn: 0.3617894 total: 450ms remaining: 1.25s
265: learn: 0.3615558 total: 451ms remaining: 1.25s
266: learn: 0.3613812 total: 453ms remaining: 1.24s
267: learn: 0.3610852 total: 454ms remaining: 1.24s
268: learn: 0.3607640 total: 455ms remaining: 1.24s
269: learn: 0.3605423 total: 457ms remaining: 1.23s
270: learn: 0.3602994 total: 458ms remaining: 1.23s
271: learn: 0.3600973 total: 459ms remaining: 1.23s
272: learn: 0.3598614 total: 460ms remaining: 1.23s
273: learn: 0.3595515 total: 462ms remaining: 1.22s
274: learn: 0.3591248 total: 463ms remaining: 1.22s
275: learn: 0.3588949 total: 465ms remaining: 1.22s
276: learn: 0.3587014 total: 466ms remaining: 1.22s
277: learn: 0.3585765 total: 467ms remaining: 1.21s
278: learn: 0.3584427 total: 468ms remaining: 1.21s
279: learn: 0.3583216 total: 469ms remaining: 1.21s
280: learn: 0.3581143 total: 470ms remaining: 1.2s
281: learn: 0.3579955 total: 472ms remaining: 1.2s
282: learn: 0.3578405 total: 473ms remaining: 1.2s
283: learn: 0.3575608 total: 474ms remaining: 1.2s
284: learn: 0.3574529 total: 476ms remaining: 1.19s
285: learn: 0.3574113 total: 478ms remaining: 1.19s
286: learn: 0.3572600 total: 479ms remaining: 1.19s
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288: learn: 0.3570081 total: 482ms remaining: 1.19s
289: learn: 0.3568492 total: 483ms remaining: 1.18s
290: learn: 0.3566242 total: 485ms remaining: 1.18s
291: learn: 0.3564437 total: 486ms remaining: 1.18s
292: learn: 0.3562291 total: 487ms remaining: 1.18s
293: learn: 0.3561600 total: 489ms remaining: 1.17s
294: learn: 0.3559142 total: 490ms remaining: 1.17s
295: learn: 0.3557591 total: 491ms remaining: 1.17s
296: learn: 0.3556485 total: 493ms remaining: 1.17s
297: learn: 0.3555017 total: 494ms remaining: 1.16s
298: learn: 0.3553308 total: 496ms remaining: 1.16s
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300: learn: 0.3548900 total: 498ms remaining: 1.16s
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302: learn: 0.3544846 total: 500ms remaining: 1.15s
303: learn: 0.3542060 total: 501ms remaining: 1.15s
304: learn: 0.3540194 total: 502ms remaining: 1.14s
305: learn: 0.3538581 total: 504ms remaining: 1.14s
306: learn: 0.3537515 total: 505ms remaining: 1.14s
307: learn: 0.3536982 total: 507ms remaining: 1.14s
308: learn: 0.3535546 total: 508ms remaining: 1.14s
309: learn: 0.3533762 total: 510ms remaining: 1.13s
310: learn: 0.3533431 total: 510ms remaining: 1.13s
311: learn: 0.3531484 total: 512ms remaining: 1.13s
312: learn: 0.3529886 total: 513ms remaining: 1.13s
313: learn: 0.3528050 total: 514ms remaining: 1.12s
314: learn: 0.3526054 total: 515ms remaining: 1.12s
315: learn: 0.3524019 total: 517ms remaining: 1.12s
316: learn: 0.3521393 total: 518ms remaining: 1.11s
317: learn: 0.3519732 total: 519ms remaining: 1.11s
318: learn: 0.3517303 total: 520ms remaining: 1.11s
319: learn: 0.3515639 total: 521ms remaining: 1.11s
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320: learn: 0.3512889 total: 522ms remaining: 1.1s
321: learn: 0.3511312 total: 523ms remaining: 1.1s
322: learn: 0.3509578 total: 525ms remaining: 1.1s
323: learn: 0.3507527 total: 526ms remaining: 1.1s
324: learn: 0.3506157 total: 527ms remaining: 1.09s
325: learn: 0.3505015 total: 528ms remaining: 1.09s
326: learn: 0.3504818 total: 528ms remaining: 1.09s
327: learn: 0.3503647 total: 529ms remaining: 1.08s
328: learn: 0.3503396 total: 530ms remaining: 1.08s
329: learn: 0.3502359 total: 532ms remaining: 1.08s
330: learn: 0.3499521 total: 533ms remaining: 1.08s
331: learn: 0.3498077 total: 534ms remaining: 1.07s
332: learn: 0.3497827 total: 535ms remaining: 1.07s
333: learn: 0.3496325 total: 536ms remaining: 1.07s
334: learn: 0.3494746 total: 538ms remaining: 1.07s
335: learn: 0.3493628 total: 539ms remaining: 1.06s
336: learn: 0.3492246 total: 540ms remaining: 1.06s
337: learn: 0.3491313 total: 541ms remaining: 1.06s
338: learn: 0.3489916 total: 542ms remaining: 1.06s
339: learn: 0.3489012 total: 543ms remaining: 1.05s
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341: learn: 0.3486963 total: 545ms remaining: 1.05s
342: learn: 0.3486906 total: 546ms remaining: 1.04s
343: learn: 0.3486198 total: 547ms remaining: 1.04s
344: learn: 0.3485483 total: 548ms remaining: 1.04s
345: learn: 0.3483590 total: 549ms remaining: 1.04s
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349: learn: 0.3475478 total: 554ms remaining: 1.03s
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353: learn: 0.3468957 total: 559ms remaining: 1.02s
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355: learn: 0.3465597 total: 562ms remaining: 1.02s
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359: learn: 0.3459769 total: 569ms remaining: 1.01s
360: learn: 0.3459034 total: 570ms remaining: 1.01s
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363: learn: 0.3454929 total: 573ms remaining: 1s
364: learn: 0.3453022 total: 575ms remaining: 1000ms
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366: learn: 0.3449881 total: 577ms remaining: 995ms
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368: learn: 0.3448840 total: 580ms remaining: 991ms
369: learn: 0.3447551 total: 581ms remaining: 989ms
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372: learn: 0.3442904 total: 585ms remaining: 984ms
373: learn: 0.3442628 total: 587ms remaining: 982ms
374: learn: 0.3442020 total: 588ms remaining: 981ms
375: learn: 0.3440265 total: 590ms remaining: 978ms
376: learn: 0.3439595 total: 591ms remaining: 977ms
377: learn: 0.3438163 total: 592ms remaining: 974ms
378: learn: 0.3436305 total: 594ms remaining: 973ms
379: learn: 0.3434105 total: 595ms remaining: 970ms
380: learn: 0.3432851 total: 596ms remaining: 968ms
381: learn: 0.3432579 total: 597ms remaining: 966ms
382: learn: 0.3431960 total: 598ms remaining: 963ms
383: learn: 0.3429891 total: 600ms remaining: 962ms
384: learn: 0.3428191 total: 601ms remaining: 961ms
385: learn: 0.3427661 total: 603ms remaining: 959ms
386: learn: 0.3426183 total: 604ms remaining: 957ms
387: learn: 0.3424969 total: 606ms remaining: 957ms
388: learn: 0.3422953 total: 608ms remaining: 955ms
389: learn: 0.3420787 total: 609ms remaining: 953ms
390: learn: 0.3419967 total: 611ms remaining: 952ms
391: learn: 0.3419765 total: 612ms remaining: 950ms
```

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392: learn: 0.3419201 total: 614ms remaining: 948ms
393: learn: 0.3418554 total: 615ms remaining: 946ms
394: learn: 0.3417984 total: 617ms remaining: 945ms
395: learn: 0.3417962 total: 618ms remaining: 943ms
396: learn: 0.3416791 total: 619ms remaining: 941ms
397: learn: 0.3415480 total: 621ms remaining: 940ms
398: learn: 0.3414649 total: 623ms remaining: 938ms
399: learn: 0.3414111 total: 624ms remaining: 936ms
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402: learn: 0.3410062 total: 629ms remaining: 932ms
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404: learn: 0.3406585 total: 632ms remaining: 928ms
405: learn: 0.3405226 total: 633ms remaining: 927ms
406: learn: 0.3404659 total: 635ms remaining: 925ms
407: learn: 0.3403840 total: 636ms remaining: 923ms
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415: learn: 0.3390844 total: 647ms remaining: 909ms
416: learn: 0.3389421 total: 649ms remaining: 907ms
417: learn: 0.3388832 total: 650ms remaining: 905ms
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431: learn: 0.3370433 total: 666ms remaining: 875ms
432: learn: 0.3370360 total: 668ms remaining: 874ms
433: learn: 0.3368500 total: 671ms remaining: 875ms
434: learn: 0.3366859 total: 674ms remaining: 875ms
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437: learn: 0.3362217 total: 684ms remaining: 877ms
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461: learn: 0.3337770 total: 718ms remaining: 836ms
462: learn: 0.3336443 total: 720ms remaining: 835ms
463: learn: 0.3334241 total: 721ms remaining: 833ms
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477: learn: 0.3319563 total: 745ms remaining: 813ms
478: learn: 0.3317906 total: 746ms remaining: 811ms
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480: learn: 0.3316960 total: 749ms remaining: 808ms
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482: learn: 0.3313909 total: 752ms remaining: 804ms
483: learn: 0.3312458 total: 753ms remaining: 803ms
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533: learn: 0.3257557 total: 813ms remaining: 710ms
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535: learn: 0.3254907 total: 816ms remaining: 706ms
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584: learn: 0.3204562 total: 873ms remaining: 619ms
585: learn: 0.3204138 total: 874ms remaining: 618ms
586: learn: 0.3203263 total: 875ms remaining: 616ms
587: learn: 0.3202910 total: 876ms remaining: 614ms
588: learn: 0.3201954 total: 877ms remaining: 612ms
589: learn: 0.3201293 total: 879ms remaining: 611ms
590: learn: 0.3201077 total: 880ms remaining: 609ms
591: learn: 0.3200210 total: 881ms remaining: 607ms
592: learn: 0.3199487 total: 883ms remaining: 606ms
593: learn: 0.3197593 total: 885ms remaining: 605ms
594: learn: 0.3195954 total: 887ms remaining: 603ms
595: learn: 0.3195481 total: 889ms remaining: 603ms
596: learn: 0.3195006 total: 891ms remaining: 601ms
597: learn: 0.3194088 total: 892ms remaining: 600ms
598: learn: 0.3193048 total: 894ms remaining: 598ms
599: learn: 0.3192069 total: 896ms remaining: 597ms
600: learn: 0.3191493 total: 897ms remaining: 595ms
601: learn: 0.3190227 total: 898ms remaining: 594ms
602: learn: 0.3189302 total: 900ms remaining: 592ms
603: learn: 0.3188910 total: 901ms remaining: 591ms
604: learn: 0.3188000 total: 902ms remaining: 589ms
605: learn: 0.3187352 total: 904ms remaining: 588ms
606: learn: 0.3186300 total: 905ms remaining: 586ms
607: learn: 0.3184298 total: 907ms remaining: 584ms
```

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608: learn: 0.3183568 total: 908ms remaining: 583ms
609: learn: 0.3182894 total: 909ms remaining: 581ms
610: learn: 0.3181426 total: 910ms remaining: 580ms
611: learn: 0.3179574 total: 912ms remaining: 578ms
612: learn: 0.3179223 total: 913ms remaining: 577ms
613: learn: 0.3178380 total: 914ms remaining: 575ms
614: learn: 0.3177596 total: 918ms remaining: 575ms
615: learn: 0.3175927 total: 919ms remaining: 573ms
616: learn: 0.3173668 total: 922ms remaining: 572ms
617: learn: 0.3173352 total: 923ms remaining: 571ms
618: learn: 0.3171120 total: 925ms remaining: 569ms
619: learn: 0.3170100 total: 927ms remaining: 568ms
620: learn: 0.3169220 total: 928ms remaining: 567ms
621: learn: 0.3167400 total: 930ms remaining: 565ms
622: learn: 0.3167001 total: 932ms remaining: 564ms
623: learn: 0.3166518 total: 933ms remaining: 562ms
624: learn: 0.3165660 total: 934ms remaining: 561ms
625: learn: 0.3164403 total: 937ms remaining: 560ms
626: learn: 0.3163727 total: 939ms remaining: 558ms
627: learn: 0.3162427 total: 940ms remaining: 557ms
628: learn: 0.3161733 total: 941ms remaining: 555ms
629: learn: 0.3160736 total: 943ms remaining: 554ms
630: learn: 0.3158818 total: 944ms remaining: 552ms
631: learn: 0.3158262 total: 946ms remaining: 551ms
632: learn: 0.3157412 total: 947ms remaining: 549ms
633: learn: 0.3156898 total: 948ms remaining: 547ms
634: learn: 0.3155679 total: 949ms remaining: 546ms
635: learn: 0.3154611 total: 951ms remaining: 544ms
636: learn: 0.3154427 total: 951ms remaining: 542ms
637: learn: 0.3153691 total: 953ms remaining: 541ms
638: learn: 0.3151784 total: 954ms remaining: 539ms
639: learn: 0.3150529 total: 955ms remaining: 537ms
640: learn: 0.3150282 total: 956ms remaining: 535ms
641: learn: 0.3148261 total: 957ms remaining: 534ms
642: learn: 0.3147875 total: 959ms remaining: 532ms
643: learn: 0.3147567 total: 960ms remaining: 531ms
644: learn: 0.3146322 total: 961ms remaining: 529ms
645: learn: 0.3145532 total: 963ms remaining: 528ms
646: learn: 0.3143133 total: 964ms remaining: 526ms
647: learn: 0.3140229 total: 965ms remaining: 524ms
648: learn: 0.3139425 total: 967ms remaining: 523ms
649: learn: 0.3138068 total: 969ms remaining: 522ms
650: learn: 0.3136153 total: 970ms remaining: 520ms
651: learn: 0.3135629 total: 972ms remaining: 519ms
652: learn: 0.3133985 total: 974ms remaining: 518ms
653: learn: 0.3133526 total: 976ms remaining: 516ms
654: learn: 0.3131318 total: 977ms remaining: 514ms
655: learn: 0.3130384 total: 978ms remaining: 513ms
656: learn: 0.3129302 total: 980ms remaining: 511ms
657: learn: 0.3127555 total: 981ms remaining: 510ms
658: learn: 0.3127486 total: 982ms remaining: 508ms
659: learn: 0.3127039 total: 983ms remaining: 506ms
660: learn: 0.3126001 total: 984ms remaining: 505ms
661: learn: 0.3124881 total: 985ms remaining: 503ms
662: learn: 0.3124353 total: 986ms remaining: 501ms
663: learn: 0.3122546 total: 988ms remaining: 500ms
664: learn: 0.3122239 total: 989ms remaining: 498ms
665: learn: 0.3121784 total: 991ms remaining: 497ms
666: learn: 0.3121267 total: 993ms remaining: 496ms
667: learn: 0.3120395 total: 994ms remaining: 494ms
668: learn: 0.3120127 total: 996ms remaining: 493ms
669: learn: 0.3119610 total: 997ms remaining: 491ms
670: learn: 0.3117913 total: 998ms remaining: 489ms
671: learn: 0.3116914 total: 999ms remaining: 488ms
672: learn: 0.3116547 total: 1s remaining: 486ms
673: learn: 0.3115684 total: 1s remaining: 484ms
674: learn: 0.3114941 total: 1s remaining: 483ms
675: learn: 0.3114510 total: 1s remaining: 481ms
676: learn: 0.3112203 total: 1s remaining: 480ms
677: learn: 0.3110508 total: 1.01s remaining: 478ms
678: learn: 0.3110102 total: 1.01s remaining: 477ms
679: learn: 0.3108967 total: 1.01s remaining: 475ms
```

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680: learn: 0.3108654 total: 1.01s remaining: 473ms
681: learn: 0.3106962 total: 1.01s remaining: 472ms
682: learn: 0.3106458 total: 1.01s remaining: 471ms
683: learn: 0.3105959 total: 1.01s remaining: 469ms
684: learn: 0.3105300 total: 1.02s remaining: 468ms
685: learn: 0.3104842 total: 1.02s remaining: 466ms
686: learn: 0.3103326 total: 1.02s remaining: 465ms
687: learn: 0.3103258 total: 1.02s remaining: 463ms
688: learn: 0.3102945 total: 1.02s remaining: 461ms
689: learn: 0.3102384 total: 1.02s remaining: 460ms
690: learn: 0.3101594 total: 1.02s remaining: 458ms
691: learn: 0.3101370 total: 1.02s remaining: 457ms
692: learn: 0.3099302 total: 1.03s remaining: 455ms
693: learn: 0.3098841 total: 1.03s remaining: 454ms
694: learn: 0.3098660 total: 1.03s remaining: 452ms
695: learn: 0.3096396 total: 1.03s remaining: 451ms
696: learn: 0.3096292 total: 1.03s remaining: 449ms
697: learn: 0.3096060 total: 1.03s remaining: 447ms
698: learn: 0.3094642 total: 1.03s remaining: 446ms
699: learn: 0.3093648 total: 1.03s remaining: 444ms
700: learn: 0.3091002 total: 1.04s remaining: 442ms
701: learn: 0.3088913 total: 1.04s remaining: 441ms
702: learn: 0.3087764 total: 1.04s remaining: 439ms
703: learn: 0.3087121 total: 1.04s remaining: 437ms
704: learn: 0.3085213 total: 1.04s remaining: 436ms
705: learn: 0.3084900 total: 1.04s remaining: 434ms
706: learn: 0.3082615 total: 1.04s remaining: 432ms
707: learn: 0.3082205 total: 1.04s remaining: 431ms
708: learn: 0.3081993 total: 1.04s remaining: 429ms
709: learn: 0.3081296 total: 1.05s remaining: 428ms
710: learn: 0.3080477 total: 1.05s remaining: 426ms
711: learn: 0.3079610 total: 1.05s remaining: 425ms
712: learn: 0.3078240 total: 1.05s remaining: 424ms
713: learn: 0.3076882 total: 1.05s remaining: 422ms
714: learn: 0.3075188 total: 1.05s remaining: 421ms
715: learn: 0.3073993 total: 1.06s remaining: 419ms
716: learn: 0.3073657 total: 1.06s remaining: 418ms
717: learn: 0.3072962 total: 1.06s remaining: 417ms
718: learn: 0.3071896 total: 1.06s remaining: 415ms
719: learn: 0.3070651 total: 1.06s remaining: 414ms
720: learn: 0.3069570 total: 1.06s remaining: 412ms
721: learn: 0.3068108 total: 1.07s remaining: 411ms
722: learn: 0.3067698 total: 1.07s remaining: 409ms
723: learn: 0.3066635 total: 1.07s remaining: 408ms
724: learn: 0.3065437 total: 1.07s remaining: 406ms
725: learn: 0.3064340 total: 1.07s remaining: 405ms
726: learn: 0.3063286 total: 1.07s remaining: 403ms
727: learn: 0.3062857 total: 1.07s remaining: 402ms
728: learn: 0.3061451 total: 1.07s remaining: 400ms
729: learn: 0.3061026 total: 1.08s remaining: 398ms
730: learn: 0.3060135 total: 1.08s remaining: 397ms
731: learn: 0.3059533 total: 1.08s remaining: 396ms
732: learn: 0.3058187 total: 1.08s remaining: 395ms
733: learn: 0.3055647 total: 1.09s remaining: 394ms
734: learn: 0.3054288 total: 1.09s remaining: 393ms
735: learn: 0.3053118 total: 1.09s remaining: 391ms
736: learn: 0.3052838 total: 1.09s remaining: 390ms
737: learn: 0.3051244 total: 1.09s remaining: 388ms
738: learn: 0.3050313 total: 1.09s remaining: 387ms
739: learn: 0.3049387 total: 1.1s remaining: 385ms
740: learn: 0.3048088 total: 1.1s remaining: 384ms
741: learn: 0.3047582 total: 1.1s remaining: 382ms
742: learn: 0.3045958 total: 1.1s remaining: 381ms
743: learn: 0.3045221 total: 1.1s remaining: 379ms
744: learn: 0.3044754 total: 1.1s remaining: 378ms
745: learn: 0.3044509 total: 1.1s remaining: 377ms
746: learn: 0.3043900 total: 1.11s remaining: 375ms
747: learn: 0.3040945 total: 1.11s remaining: 374ms
748: learn: 0.3038984 total: 1.11s remaining: 372ms
749: learn: 0.3038193 total: 1.11s remaining: 371ms
750: learn: 0.3037917 total: 1.11s remaining: 369ms
751: learn: 0.3037522 total: 1.11s remaining: 368ms
```

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752: learn: 0.3037488 total: 1.11s remaining: 366ms
753: learn: 0.3036769 total: 1.12s remaining: 364ms
754: learn: 0.3034860 total: 1.12s remaining: 363ms
755: learn: 0.3034095 total: 1.12s remaining: 362ms
756: learn: 0.3032959 total: 1.12s remaining: 360ms
757: learn: 0.3032625 total: 1.12s remaining: 359ms
758: learn: 0.3031721 total: 1.12s remaining: 357ms
759: learn: 0.3029812 total: 1.13s remaining: 356ms
760: learn: 0.3028624 total: 1.13s remaining: 354ms
761: learn: 0.3026988 total: 1.13s remaining: 353ms
762: learn: 0.3026261 total: 1.13s remaining: 351ms
763: learn: 0.3025886 total: 1.13s remaining: 350ms
764: learn: 0.3025497 total: 1.13s remaining: 349ms
765: learn: 0.3024441 total: 1.14s remaining: 347ms
766: learn: 0.3023359 total: 1.14s remaining: 346ms
767: learn: 0.3022810 total: 1.14s remaining: 344ms
768: learn: 0.3021258 total: 1.14s remaining: 343ms
769: learn: 0.3020787 total: 1.14s remaining: 341ms
770: learn: 0.3020204 total: 1.14s remaining: 340ms
771: learn: 0.3019782 total: 1.15s remaining: 339ms
772: learn: 0.3019046 total: 1.15s remaining: 337ms
773: learn: 0.3018975 total: 1.15s remaining: 336ms
774: learn: 0.3017271 total: 1.15s remaining: 334ms
775: learn: 0.3016557 total: 1.15s remaining: 333ms
776: learn: 0.3015515 total: 1.16s remaining: 332ms
777: learn: 0.3013313 total: 1.16s remaining: 330ms
778: learn: 0.3012939 total: 1.16s remaining: 329ms
779: learn: 0.3010758 total: 1.16s remaining: 327ms
780: learn: 0.3010431 total: 1.16s remaining: 326ms
781: learn: 0.3009258 total: 1.16s remaining: 324ms
782: learn: 0.3009216 total: 1.17s remaining: 323ms
783: learn: 0.3008427 total: 1.17s remaining: 322ms
784: learn: 0.3007548 total: 1.17s remaining: 320ms
785: learn: 0.3005491 total: 1.17s remaining: 319ms
786: learn: 0.3005279 total: 1.17s remaining: 317ms
787: learn: 0.3003096 total: 1.17s remaining: 316ms
788: learn: 0.2999912 total: 1.18s remaining: 314ms
789: learn: 0.2998416 total: 1.18s remaining: 313ms
790: learn: 0.2997929 total: 1.18s remaining: 312ms
791: learn: 0.2996743 total: 1.18s remaining: 310ms
792: learn: 0.2996138 total: 1.18s remaining: 309ms
793: learn: 0.2994341 total: 1.18s remaining: 307ms
794: learn: 0.2994057 total: 1.18s remaining: 306ms
795: learn: 0.2993378 total: 1.19s remaining: 304ms
796: learn: 0.2992334 total: 1.19s remaining: 302ms
797: learn: 0.2991282 total: 1.19s remaining: 301ms
798: learn: 0.2990434 total: 1.19s remaining: 300ms
799: learn: 0.2989803 total: 1.19s remaining: 298ms
800: learn: 0.2988832 total: 1.19s remaining: 297ms
801: learn: 0.2987511 total: 1.2s remaining: 295ms
802: learn: 0.2986104 total: 1.2s remaining: 294ms
803: learn: 0.2985682 total: 1.2s remaining: 292ms
804: learn: 0.2984331 total: 1.2s remaining: 291ms
805: learn: 0.2983828 total: 1.2s remaining: 290ms
806: learn: 0.2982940 total: 1.2s remaining: 288ms
807: learn: 0.2982009 total: 1.21s remaining: 287ms
808: learn: 0.2980899 total: 1.21s remaining: 285ms
809: learn: 0.2980265 total: 1.21s remaining: 284ms
810: learn: 0.2978279 total: 1.21s remaining: 282ms
811: learn: 0.2977527 total: 1.21s remaining: 281ms
812: learn: 0.2976333 total: 1.21s remaining: 279ms
813: learn: 0.2974487 total: 1.22s remaining: 278ms
814: learn: 0.2973761 total: 1.22s remaining: 277ms
815: learn: 0.2972528 total: 1.22s remaining: 275ms
816: learn: 0.2971873 total: 1.22s remaining: 274ms
817: learn: 0.2970880 total: 1.22s remaining: 272ms
818: learn: 0.2969595 total: 1.23s remaining: 271ms
819: learn: 0.2968560 total: 1.23s remaining: 270ms
820: learn: 0.2967460 total: 1.23s remaining: 268ms
821: learn: 0.2967110 total: 1.23s remaining: 267ms
822: learn: 0.2966457 total: 1.23s remaining: 265ms
823: learn: 0.2965711 total: 1.23s remaining: 264ms
```

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824: learn: 0.2965386 total: 1.24s remaining: 262ms
825: learn: 0.2964117 total: 1.24s remaining: 261ms
826: learn: 0.2963521 total: 1.24s remaining: 260ms
827: learn: 0.2963484 total: 1.24s remaining: 258ms
828: learn: 0.2963082 total: 1.24s remaining: 257ms
829: learn: 0.2961622 total: 1.25s remaining: 255ms
830: learn: 0.2959662 total: 1.25s remaining: 254ms
831: learn: 0.2958698 total: 1.25s remaining: 252ms
832: learn: 0.2957192 total: 1.25s remaining: 251ms
833: learn: 0.2955970 total: 1.25s remaining: 250ms
834: learn: 0.2955525 total: 1.26s remaining: 248ms
835: learn: 0.2954513 total: 1.26s remaining: 247ms
836: learn: 0.2953898 total: 1.26s remaining: 245ms
837: learn: 0.2952918 total: 1.26s remaining: 244ms
838: learn: 0.2951532 total: 1.26s remaining: 242ms
839: learn: 0.2950932 total: 1.26s remaining: 241ms
840: learn: 0.2950442 total: 1.27s remaining: 239ms
841: learn: 0.2949691 total: 1.27s remaining: 238ms
842: learn: 0.2948453 total: 1.27s remaining: 237ms
843: learn: 0.2948188 total: 1.27s remaining: 235ms
844: learn: 0.2947094 total: 1.27s remaining: 234ms
845: learn: 0.2946735 total: 1.27s remaining: 232ms
846: learn: 0.2944904 total: 1.27s remaining: 230ms
847: learn: 0.2944480 total: 1.28s remaining: 229ms
848: learn: 0.2942538 total: 1.28s remaining: 227ms
849: learn: 0.2941190 total: 1.28s remaining: 226ms
850: learn: 0.2940277 total: 1.28s remaining: 224ms
851: learn: 0.2938935 total: 1.28s remaining: 223ms
852: learn: 0.2938331 total: 1.29s remaining: 222ms
853: learn: 0.2937668 total: 1.29s remaining: 220ms
854: learn: 0.2937508 total: 1.29s remaining: 219ms
855: learn: 0.2935904 total: 1.29s remaining: 217ms
856: learn: 0.2934469 total: 1.29s remaining: 216ms
857: learn: 0.2933149 total: 1.29s remaining: 214ms
858: learn: 0.2932553 total: 1.3s remaining: 213ms
859: learn: 0.2932173 total: 1.3s remaining: 211ms
860: learn: 0.2930670 total: 1.3s remaining: 210ms
861: learn: 0.2929893 total: 1.3s remaining: 208ms
862: learn: 0.2929494 total: 1.3s remaining: 207ms
863: learn: 0.2929283 total: 1.3s remaining: 205ms
864: learn: 0.2928684 total: 1.31s remaining: 204ms
865: learn: 0.2926937 total: 1.31s remaining: 202ms
866: learn: 0.2926321 total: 1.31s remaining: 201ms
867: learn: 0.2926168 total: 1.31s remaining: 199ms
868: learn: 0.2924939 total: 1.31s remaining: 198ms
869: learn: 0.2923966 total: 1.31s remaining: 196ms
870: learn: 0.2922458 total: 1.31s remaining: 195ms
871: learn: 0.2921728 total: 1.31s remaining: 193ms
872: learn: 0.2921391 total: 1.32s remaining: 192ms
873: learn: 0.2920296 total: 1.32s remaining: 190ms
874: learn: 0.2919852 total: 1.32s remaining: 189ms
875: learn: 0.2918947 total: 1.32s remaining: 187ms
876: learn: 0.2917939 total: 1.32s remaining: 186ms
877: learn: 0.2917327 total: 1.32s remaining: 184ms
878: learn: 0.2916175 total: 1.33s remaining: 183ms
879: learn: 0.2915256 total: 1.33s remaining: 181ms
880: learn: 0.2914363 total: 1.33s remaining: 180ms
881: learn: 0.2913946 total: 1.33s remaining: 178ms
882: learn: 0.2912607 total: 1.33s remaining: 177ms
883: learn: 0.2910802 total: 1.33s remaining: 175ms
884: learn: 0.2908745 total: 1.34s remaining: 174ms
885: learn: 0.2908222 total: 1.34s remaining: 172ms
886: learn: 0.2907523 total: 1.34s remaining: 171ms
887: learn: 0.2906952 total: 1.34s remaining: 169ms
888: learn: 0.2905846 total: 1.34s remaining: 168ms
889: learn: 0.2904988 total: 1.35s remaining: 166ms
890: learn: 0.2904477 total: 1.35s remaining: 165ms
891: learn: 0.2904087 total: 1.35s remaining: 163ms
892: learn: 0.2902233 total: 1.35s remaining: 162ms
893: learn: 0.2901683 total: 1.35s remaining: 160ms
894: learn: 0.2900743 total: 1.35s remaining: 159ms
895: learn: 0.2900244 total: 1.36s remaining: 157ms
```

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896: learn: 0.2899848 total: 1.36s remaining: 156ms
897: learn: 0.2899228 total: 1.36s remaining: 154ms
898: learn: 0.2898580 total: 1.36s remaining: 153ms
899: learn: 0.2898256 total: 1.36s remaining: 151ms
900: learn: 0.2897648 total: 1.36s remaining: 150ms
901: learn: 0.2897234 total: 1.37s remaining: 148ms
902: learn: 0.2895791 total: 1.37s remaining: 147ms
903: learn: 0.2895279 total: 1.37s remaining: 145ms
904: learn: 0.2893212 total: 1.37s remaining: 144ms
905: learn: 0.2892788 total: 1.37s remaining: 142ms
906: learn: 0.2892550 total: 1.37s remaining: 141ms
907: learn: 0.2891745 total: 1.38s remaining: 139ms
908: learn: 0.2891331 total: 1.38s remaining: 138ms
909: learn: 0.2890255 total: 1.38s remaining: 136ms
910: learn: 0.2889269 total: 1.38s remaining: 135ms
911: learn: 0.2888795 total: 1.38s remaining: 134ms
912: learn: 0.2887919 total: 1.39s remaining: 132ms
913: learn: 0.2887043 total: 1.39s remaining: 131ms
914: learn: 0.2886470 total: 1.39s remaining: 129ms
915: learn: 0.2885852 total: 1.39s remaining: 128ms
916: learn: 0.2884671 total: 1.39s remaining: 126ms
917: learn: 0.2884255 total: 1.39s remaining: 125ms
918: learn: 0.2883287 total: 1.4s remaining: 123ms
919: learn: 0.2881742 total: 1.4s remaining: 122ms
920: learn: 0.2880698 total: 1.4s remaining: 120ms
921: learn: 0.2880249 total: 1.4s remaining: 119ms
922: learn: 0.2878405 total: 1.4s remaining: 117ms
923: learn: 0.2876034 total: 1.4s remaining: 115ms
924: learn: 0.2874412 total: 1.41s remaining: 114ms
925: learn: 0.2873574 total: 1.41s remaining: 112ms
926: learn: 0.2873126 total: 1.41s remaining: 111ms
927: learn: 0.2872236 total: 1.41s remaining: 109ms
928: learn: 0.2871712 total: 1.41s remaining: 108ms
929: learn: 0.2871467 total: 1.41s remaining: 106ms
930: learn: 0.2868042 total: 1.41s remaining: 105ms
931: learn: 0.2867723 total: 1.42s remaining: 103ms
932: learn: 0.2867100 total: 1.42s remaining: 102ms
933: learn: 0.2865136 total: 1.42s remaining: 100ms
934: learn: 0.2863650 total: 1.42s remaining: 98.7ms
935: learn: 0.2863036 total: 1.42s remaining: 97.1ms
936: learn: 0.2861177 total: 1.42s remaining: 95.6ms
937: learn: 0.2860613 total: 1.42s remaining: 94.1ms
938: learn: 0.2859212 total: 1.42s remaining: 92.5ms
939: learn: 0.2857834 total: 1.43s remaining: 91ms
940: learn: 0.2857225 total: 1.43s remaining: 89.5ms
941: learn: 0.2854482 total: 1.43s remaining: 87.9ms
942: learn: 0.2853694 total: 1.43s remaining: 86.4ms
943: learn: 0.2852942 total: 1.43s remaining: 85ms
944: learn: 0.2852140 total: 1.43s remaining: 83.5ms
945: learn: 0.2851066 total: 1.44s remaining: 81.9ms
946: learn: 0.2849074 total: 1.44s remaining: 80.5ms
947: learn: 0.2847520 total: 1.44s remaining: 79ms
948: learn: 0.2846852 total: 1.44s remaining: 77.5ms
949: learn: 0.2846367 total: 1.44s remaining: 76ms
950: learn: 0.2845546 total: 1.44s remaining: 74.4ms
951: learn: 0.2844788 total: 1.45s remaining: 72.9ms
952: learn: 0.2843056 total: 1.45s remaining: 71.4ms
953: learn: 0.2842155 total: 1.45s remaining: 69.9ms
954: learn: 0.2841214 total: 1.45s remaining: 68.4ms
955: learn: 0.2840876 total: 1.45s remaining: 66.9ms
956: learn: 0.2838532 total: 1.45s remaining: 65.3ms
957: learn: 0.2837543 total: 1.46s remaining: 63.8ms
958: learn: 0.2837030 total: 1.46s remaining: 62.3ms
959: learn: 0.2835953 total: 1.46s remaining: 60.8ms
960: learn: 0.2835261 total: 1.46s remaining: 59.2ms
961: learn: 0.2833405 total: 1.46s remaining: 57.7ms
962: learn: 0.2832567 total: 1.46s remaining: 56.2ms
963: learn: 0.2830934 total: 1.46s remaining: 54.7ms
964: learn: 0.2830666 total: 1.46s remaining: 53.1ms
965: learn: 0.2829776 total: 1.47s remaining: 51.6ms
966: learn: 0.2829546 total: 1.47s remaining: 50.1ms
967: learn: 0.2828191 total: 1.47s remaining: 48.6ms
```

```
968: learn: 0.2827603 total: 1.47s remaining: 47ms
969: learn: 0.2827374 total: 1.47s remaining: 45.5ms
970: learn: 0.2826834 total: 1.47s remaining: 44ms
971: learn: 0.2826231 total: 1.47s remaining: 42.5ms
972: learn: 0.2825228 total: 1.48s remaining: 41ms
973: learn: 0.2824184 total: 1.48s remaining: 39.5ms
974: learn: 0.2823403 total: 1.48s remaining: 38ms
975: learn: 0.2823246 total: 1.48s remaining: 36.4ms
976: learn: 0.2821549 total: 1.48s remaining: 34.9ms
977: learn: 0.2820771 total: 1.49s remaining: 33.4ms
978: learn: 0.2820127 total: 1.49s remaining: 31.9ms
979: learn: 0.2819544 total: 1.49s remaining: 30.4ms
980: learn: 0.2818645 total: 1.49s remaining: 28.9ms
981: learn: 0.2818258 total: 1.49s remaining: 27.4ms
982: learn: 0.2817772 total: 1.5s remaining: 25.9ms
983: learn: 0.2817285 total: 1.5s remaining: 24.3ms
984: learn: 0.2816921 total: 1.5s remaining: 22.8ms
985: learn: 0.2816313 total: 1.5s remaining: 21.3ms
986: learn: 0.2815814 total: 1.5s remaining: 19.8ms
987: learn: 0.2814146 total: 1.5s remaining: 18.3ms
988: learn: 0.2813165 total: 1.5s remaining: 16.7ms
989: learn: 0.2812160 total: 1.51s remaining: 15.2ms
990: learn: 0.2811625 total: 1.51s remaining: 13.7ms
991: learn: 0.2811167 total: 1.51s remaining: 12.2ms
992: learn: 0.2808898 total: 1.51s remaining: 10.7ms
993: learn: 0.2808451 total: 1.51s remaining: 9.13ms
994: learn: 0.2807924 total: 1.51s remaining: 7.61ms
995: learn: 0.2806391 total: 1.51s remaining: 6.09ms
996: learn: 0.2805538 total: 1.52s remaining: 4.57ms
997: learn: 0.2804488 total: 1.52s remaining: 3.04ms
998: learn: 0.2803980 total: 1.52s remaining: 1.52ms
999: learn: 0.2803647 total: 1.52s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6866195 total: 1.95ms remaining: 1.94s
1: learn: 0.6830486 total: 2.95ms remaining: 1.47s
2: learn: 0.6790198 total: 4.04ms remaining: 1.34s
3: learn: 0.6726807 total: 5.67ms remaining: 1.41s
4: learn: 0.6673342 total: 7.28ms remaining: 1.45s
5: learn: 0.6622718 total: 8.37ms remaining: 1.39s
6: learn: 0.6562079 total: 9.68ms remaining: 1.37s
7: learn: 0.6511429 total: 10.8ms remaining: 1.34s
8: learn: 0.6455573 total: 12.1ms remaining: 1.33s
9: learn: 0.6401726 total: 13.3ms remaining: 1.32s
10: learn: 0.6346298 total: 14.8ms remaining: 1.33s
11: learn: 0.6292118 total: 16.4ms remaining: 1.35s
12: learn: 0.6239073 total: 18ms remaining: 1.37s
13: learn: 0.6202443 total: 18.9ms remaining: 1.33s
14: learn: 0.6159690 total: 20.3ms remaining: 1.33s
15: learn: 0.6117906 total: 21.3ms remaining: 1.31s
16: learn: 0.6072605 total: 22.8ms remaining: 1.32s
17: learn: 0.6030086 total: 24.7ms remaining: 1.35s
18: learn: 0.5986898 total: 26.5ms remaining: 1.36s
19: learn: 0.5949173 total: 27.3ms remaining: 1.34s
20: learn: 0.5902145 total: 28.4ms remaining: 1.32s
21: learn: 0.5861836 total: 30.6ms remaining: 1.36s
22: learn: 0.5816903 total: 34.5ms remaining: 1.46s
23: learn: 0.5776044 total: 37.4ms remaining: 1.52s
24: learn: 0.5745750 total: 39.2ms remaining: 1.53s
25: learn: 0.5707212 total: 41.3ms remaining: 1.55s
26: learn: 0.5668505 total: 44.1ms remaining: 1.59s
27: learn: 0.5636220 total: 45.8ms remaining: 1.59s
28: learn: 0.5605202 total: 47.3ms remaining: 1.58s
29: learn: 0.5572274 total: 49.2ms remaining: 1.59s
30: learn: 0.5534219 total: 50.7ms remaining: 1.58s
31: learn: 0.5508176 total: 52.7ms remaining: 1.59s
32: learn: 0.5469576 total: 54.6ms remaining: 1.6s
33: learn: 0.5442349 total: 56.5ms remaining: 1.6s
34: learn: 0.5407492 total: 57.9ms remaining: 1.6s
35: learn: 0.5390379 total: 59.2ms remaining: 1.58s
36: learn: 0.5363508 total: 61ms remaining: 1.59s
37: learn: 0.5331841 total: 62.9ms remaining: 1.59s
38: learn: 0.5305444 total: 64.5ms remaining: 1.59s
```

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39: learn: 0.5274137 total: 66.6ms remaining: 1.6s
40: learn: 0.5250797 total: 68.4ms remaining: 1.6s
41: learn: 0.5219638 total: 70ms remaining: 1.6s
42: learn: 0.5194657 total: 71.4ms remaining: 1.59s
43: learn: 0.5163512 total: 73.4ms remaining: 1.59s
44: learn: 0.5136489 total: 74.8ms remaining: 1.59s
45: learn: 0.5112090 total: 76.5ms remaining: 1.59s
46: learn: 0.5090447 total: 77.9ms remaining: 1.58s
47: learn: 0.5066542 total: 79.6ms remaining: 1.58s
48: learn: 0.5042396 total: 81.3ms remaining: 1.58s
49: learn: 0.5014840 total: 83.2ms remaining: 1.58s
50: learn: 0.4991239 total: 84.6ms remaining: 1.57s
51: learn: 0.4968267 total: 85.9ms remaining: 1.57s
52: learn: 0.4944760 total: 87.3ms remaining: 1.56s
53: learn: 0.4926598 total: 89.1ms remaining: 1.56s
54: learn: 0.4906845 total: 90.5ms remaining: 1.55s
55: learn: 0.4886203 total: 91.7ms remaining: 1.55s
56: learn: 0.4863561 total: 92.9ms remaining: 1.54s
57: learn: 0.4844396 total: 94.4ms remaining: 1.53s
58: learn: 0.4828541 total: 96.2ms remaining: 1.53s
59: learn: 0.4807827 total: 97.5ms remaining: 1.53s
60: learn: 0.4786320 total: 98.8ms remaining: 1.52s
61: learn: 0.4766017 total: 100ms remaining: 1.51s
62: learn: 0.4752043 total: 101ms remaining: 1.5s
63: learn: 0.4732939 total: 102ms remaining: 1.5s
64: learn: 0.4712579 total: 104ms remaining: 1.49s
65: learn: 0.4701459 total: 104ms remaining: 1.48s
66: learn: 0.4688124 total: 105ms remaining: 1.47s
67: learn: 0.4675851 total: 106ms remaining: 1.46s
68: learn: 0.4659997 total: 108ms remaining: 1.46s
69: learn: 0.4643915 total: 109ms remaining: 1.45s
70: learn: 0.4636483 total: 110ms remaining: 1.44s
71: learn: 0.4619727 total: 111ms remaining: 1.44s
72: learn: 0.4612334 total: 112ms remaining: 1.42s
73: learn: 0.4596519 total: 114ms remaining: 1.42s
74: learn: 0.4580303 total: 116ms remaining: 1.43s
75: learn: 0.4565637 total: 117ms remaining: 1.42s
76: learn: 0.4550649 total: 119ms remaining: 1.43s
77: learn: 0.4537454 total: 121ms remaining: 1.43s
78: learn: 0.4525944 total: 123ms remaining: 1.43s
79: learn: 0.4513680 total: 124ms remaining: 1.43s
80: learn: 0.4499834 total: 126ms remaining: 1.43s
81: learn: 0.4487019 total: 127ms remaining: 1.43s
82: learn: 0.4477756 total: 129ms remaining: 1.42s
83: learn: 0.4465022 total: 130ms remaining: 1.42s
84: learn: 0.4450125 total: 131ms remaining: 1.42s
85: learn: 0.4437548 total: 133ms remaining: 1.41s
86: learn: 0.4427139 total: 134ms remaining: 1.41s
87: learn: 0.4416254 total: 136ms remaining: 1.41s
88: learn: 0.4407398 total: 137ms remaining: 1.4s
89: learn: 0.4395053 total: 138ms remaining: 1.4s
90: learn: 0.4386348 total: 140ms remaining: 1.39s
91: learn: 0.4379634 total: 140ms remaining: 1.38s
92: learn: 0.4368290 total: 141ms remaining: 1.38s
93: learn: 0.4357694 total: 143ms remaining: 1.38s
94: learn: 0.4348580 total: 144ms remaining: 1.37s
95: learn: 0.4340231 total: 146ms remaining: 1.37s
96: learn: 0.4329852 total: 147ms remaining: 1.37s
97: learn: 0.4316905 total: 148ms remaining: 1.36s
98: learn: 0.4307818 total: 149ms remaining: 1.36s
99: learn: 0.4296849 total: 151ms remaining: 1.36s
100: learn: 0.4289341 total: 152ms remaining: 1.36s
101: learn: 0.4279646 total: 154ms remaining: 1.35s
102: learn: 0.4271457 total: 155ms remaining: 1.35s
103: learn: 0.4262326 total: 157ms remaining: 1.35s
104: learn: 0.4252200 total: 159ms remaining: 1.35s
105: learn: 0.4244960 total: 163ms remaining: 1.37s
106: learn: 0.4236691 total: 164ms remaining: 1.37s
107: learn: 0.4228224 total: 166ms remaining: 1.37s
108: learn: 0.4221034 total: 167ms remaining: 1.36s
109: learn: 0.4209925 total: 169ms remaining: 1.36s
110: learn: 0.4200801 total: 170ms remaining: 1.36s
```

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111: learn: 0.4199587 total: 171ms remaining: 1.35s
112: learn: 0.4192668 total: 172ms remaining: 1.35s
113: learn: 0.4183431 total: 173ms remaining: 1.35s
114: learn: 0.4173795 total: 175ms remaining: 1.35s
115: learn: 0.4169132 total: 176ms remaining: 1.34s
116: learn: 0.4163967 total: 178ms remaining: 1.34s
117: learn: 0.4154140 total: 179ms remaining: 1.34s
118: learn: 0.4145678 total: 181ms remaining: 1.34s
119: learn: 0.4143107 total: 182ms remaining: 1.33s
120: learn: 0.4135496 total: 183ms remaining: 1.33s
121: learn: 0.4128062 total: 185ms remaining: 1.33s
122: learn: 0.4126958 total: 186ms remaining: 1.32s
123: learn: 0.4120971 total: 187ms remaining: 1.32s
124: learn: 0.4115527 total: 189ms remaining: 1.32s
125: learn: 0.4110694 total: 190ms remaining: 1.31s
126: learn: 0.4102904 total: 191ms remaining: 1.31s
127: learn: 0.4097802 total: 193ms remaining: 1.31s
128: learn: 0.4092013 total: 194ms remaining: 1.31s
129: learn: 0.4088846 total: 195ms remaining: 1.31s
130: learn: 0.4082062 total: 197ms remaining: 1.31s
131: learn: 0.4075754 total: 198ms remaining: 1.3s
132: learn: 0.4070450 total: 200ms remaining: 1.3s
133: learn: 0.4065437 total: 202ms remaining: 1.3s
134: learn: 0.4059541 total: 204ms remaining: 1.3s
135: learn: 0.4054952 total: 206ms remaining: 1.31s
136: learn: 0.4054271 total: 207ms remaining: 1.3s
137: learn: 0.4048718 total: 209ms remaining: 1.3s
138: learn: 0.4042364 total: 211ms remaining: 1.31s
139: learn: 0.4038379 total: 213ms remaining: 1.31s
140: learn: 0.4032558 total: 214ms remaining: 1.3s
141: learn: 0.4026401 total: 216ms remaining: 1.3s
142: learn: 0.4020033 total: 217ms remaining: 1.3s
143: learn: 0.4014755 total: 219ms remaining: 1.3s
144: learn: 0.4013256 total: 220ms remaining: 1.3s
145: learn: 0.4005641 total: 221ms remaining: 1.29s
146: learn: 0.4003015 total: 223ms remaining: 1.29s
147: learn: 0.4000010 total: 225ms remaining: 1.29s
148: learn: 0.3995228 total: 227ms remaining: 1.29s
149: learn: 0.3990489 total: 228ms remaining: 1.29s
150: learn: 0.3985094 total: 230ms remaining: 1.29s
151: learn: 0.3978033 total: 232ms remaining: 1.29s
152: learn: 0.3976494 total: 233ms remaining: 1.29s
153: learn: 0.3972909 total: 234ms remaining: 1.29s
154: learn: 0.3966713 total: 236ms remaining: 1.28s
155: learn: 0.3965564 total: 236ms remaining: 1.28s
156: learn: 0.3963035 total: 238ms remaining: 1.28s
157: learn: 0.3961756 total: 239ms remaining: 1.27s
158: learn: 0.3957698 total: 240ms remaining: 1.27s
159: learn: 0.3951069 total: 242ms remaining: 1.27s
160: learn: 0.3945967 total: 245ms remaining: 1.27s
161: learn: 0.3941427 total: 246ms remaining: 1.27s
162: learn: 0.3939123 total: 248ms remaining: 1.27s
163: learn: 0.3934175 total: 249ms remaining: 1.27s
164: learn: 0.3927296 total: 252ms remaining: 1.27s
165: learn: 0.3922757 total: 254ms remaining: 1.28s
166: learn: 0.3920153 total: 256ms remaining: 1.27s
167: learn: 0.3915777 total: 257ms remaining: 1.27s
168: learn: 0.3911573 total: 259ms remaining: 1.27s
169: learn: 0.3906534 total: 260ms remaining: 1.27s
170: learn: 0.3901787 total: 262ms remaining: 1.27s
171: learn: 0.3898649 total: 264ms remaining: 1.27s
172: learn: 0.3892792 total: 265ms remaining: 1.27s
173: learn: 0.3889433 total: 266ms remaining: 1.26s
174: learn: 0.3886791 total: 267ms remaining: 1.26s
175: learn: 0.3882002 total: 269ms remaining: 1.26s
176: learn: 0.3877696 total: 271ms remaining: 1.26s
177: learn: 0.3873188 total: 272ms remaining: 1.26s
178: learn: 0.3870090 total: 273ms remaining: 1.25s
179: learn: 0.3867099 total: 275ms remaining: 1.25s
180: learn: 0.3863518 total: 276ms remaining: 1.25s
181: learn: 0.3860285 total: 277ms remaining: 1.25s
182: learn: 0.3856154 total: 279ms remaining: 1.25s
```

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183: learn: 0.3853428 total: 280ms remaining: 1.24s
184: learn: 0.3850039 total: 282ms remaining: 1.24s
185: learn: 0.3847611 total: 284ms remaining: 1.24s
186: learn: 0.3845960 total: 286ms remaining: 1.24s
187: learn: 0.3843182 total: 287ms remaining: 1.24s
188: learn: 0.3839244 total: 288ms remaining: 1.24s
189: learn: 0.3835315 total: 289ms remaining: 1.23s
190: learn: 0.3830899 total: 291ms remaining: 1.23s
191: learn: 0.3826825 total: 292ms remaining: 1.23s
192: learn: 0.3822411 total: 293ms remaining: 1.23s
193: learn: 0.3818710 total: 295ms remaining: 1.23s
194: learn: 0.3814525 total: 296ms remaining: 1.22s
195: learn: 0.3811391 total: 298ms remaining: 1.22s
196: learn: 0.3807894 total: 299ms remaining: 1.22s
197: learn: 0.3805618 total: 301ms remaining: 1.22s
198: learn: 0.3802566 total: 304ms remaining: 1.22s
199: learn: 0.3798589 total: 305ms remaining: 1.22s
200: learn: 0.3796703 total: 307ms remaining: 1.22s
201: learn: 0.3792657 total: 309ms remaining: 1.22s
202: learn: 0.3790588 total: 310ms remaining: 1.22s
203: learn: 0.3789467 total: 311ms remaining: 1.21s
204: learn: 0.3785577 total: 312ms remaining: 1.21s
205: learn: 0.3780912 total: 314ms remaining: 1.21s
206: learn: 0.3778499 total: 315ms remaining: 1.21s
207: learn: 0.3774396 total: 316ms remaining: 1.2s
208: learn: 0.3771521 total: 318ms remaining: 1.2s
209: learn: 0.3769198 total: 319ms remaining: 1.2s
210: learn: 0.3765553 total: 321ms remaining: 1.2s
211: learn: 0.3762595 total: 322ms remaining: 1.2s
212: learn: 0.3759232 total: 323ms remaining: 1.19s
213: learn: 0.3758720 total: 324ms remaining: 1.19s
214: learn: 0.3755856 total: 326ms remaining: 1.19s
215: learn: 0.3754800 total: 327ms remaining: 1.19s
216: learn: 0.3752873 total: 328ms remaining: 1.18s
217: learn: 0.3750526 total: 330ms remaining: 1.18s
218: learn: 0.3746615 total: 332ms remaining: 1.18s
219: learn: 0.3744555 total: 333ms remaining: 1.18s
220: learn: 0.3742597 total: 335ms remaining: 1.18s
221: learn: 0.3741008 total: 336ms remaining: 1.18s
222: learn: 0.3737706 total: 337ms remaining: 1.17s
223: learn: 0.3734999 total: 338ms remaining: 1.17s
224: learn: 0.3733105 total: 340ms remaining: 1.17s
225: learn: 0.3731487 total: 341ms remaining: 1.17s
226: learn: 0.3729382 total: 342ms remaining: 1.17s
227: learn: 0.3727559 total: 343ms remaining: 1.16s
228: learn: 0.3724205 total: 345ms remaining: 1.16s
229: learn: 0.3722317 total: 346ms remaining: 1.16s
230: learn: 0.3720316 total: 347ms remaining: 1.16s
231: learn: 0.3718068 total: 349ms remaining: 1.16s
232: learn: 0.3716394 total: 350ms remaining: 1.15s
233: learn: 0.3714879 total: 352ms remaining: 1.15s
234: learn: 0.3712652 total: 353ms remaining: 1.15s
235: learn: 0.3709596 total: 355ms remaining: 1.15s
236: learn: 0.3707661 total: 357ms remaining: 1.15s
237: learn: 0.3706753 total: 358ms remaining: 1.15s
238: learn: 0.3703554 total: 361ms remaining: 1.15s
239: learn: 0.3700409 total: 362ms remaining: 1.15s
240: learn: 0.3697066 total: 364ms remaining: 1.14s
241: learn: 0.3695153 total: 365ms remaining: 1.14s
242: learn: 0.3691312 total: 367ms remaining: 1.14s
243: learn: 0.3689191 total: 368ms remaining: 1.14s
244: learn: 0.3686384 total: 370ms remaining: 1.14s
245: learn: 0.3684383 total: 371ms remaining: 1.14s
246: learn: 0.3682742 total: 373ms remaining: 1.14s
247: learn: 0.3679306 total: 375ms remaining: 1.14s
248: learn: 0.3676715 total: 378ms remaining: 1.14s
249: learn: 0.3675290 total: 380ms remaining: 1.14s
250: learn: 0.3671165 total: 383ms remaining: 1.14s
251: learn: 0.3668595 total: 386ms remaining: 1.14s
252: learn: 0.3666970 total: 388ms remaining: 1.15s
253: learn: 0.3664500 total: 390ms remaining: 1.15s
254: learn: 0.3661544 total: 392ms remaining: 1.14s
```

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255: learn: 0.3657782 total: 393ms remaining: 1.14s
256: learn: 0.3654276 total: 394ms remaining: 1.14s
257: learn: 0.3652367 total: 395ms remaining: 1.14s
258: learn: 0.3650510 total: 397ms remaining: 1.13s
259: learn: 0.3648333 total: 398ms remaining: 1.13s
260: learn: 0.3646737 total: 399ms remaining: 1.13s
261: learn: 0.3644343 total: 400ms remaining: 1.13s
262: learn: 0.3642339 total: 401ms remaining: 1.12s
263: learn: 0.3640813 total: 403ms remaining: 1.12s
264: learn: 0.3639111 total: 404ms remaining: 1.12s
265: learn: 0.3635973 total: 406ms remaining: 1.12s
266: learn: 0.3633802 total: 407ms remaining: 1.12s
267: learn: 0.3632228 total: 409ms remaining: 1.12s
268: learn: 0.3629278 total: 411ms remaining: 1.11s
269: learn: 0.3625939 total: 412ms remaining: 1.11s
270: learn: 0.3623259 total: 414ms remaining: 1.11s
271: learn: 0.3620510 total: 416ms remaining: 1.11s
272: learn: 0.3617372 total: 417ms remaining: 1.11s
273: learn: 0.3615327 total: 419ms remaining: 1.11s
274: learn: 0.3613311 total: 421ms remaining: 1.11s
275: learn: 0.3611464 total: 422ms remaining: 1.11s
276: learn: 0.3610044 total: 424ms remaining: 1.11s
277: learn: 0.3605678 total: 426ms remaining: 1.1s
278: learn: 0.3603746 total: 428ms remaining: 1.1s
279: learn: 0.3600480 total: 429ms remaining: 1.1s
280: learn: 0.3598359 total: 431ms remaining: 1.1s
281: learn: 0.3597060 total: 434ms remaining: 1.1s
282: learn: 0.3595685 total: 436ms remaining: 1.1s
283: learn: 0.3593609 total: 438ms remaining: 1.1s
284: learn: 0.3591541 total: 441ms remaining: 1.11s
285: learn: 0.3590056 total: 443ms remaining: 1.1s
286: learn: 0.3588499 total: 444ms remaining: 1.1s
287: learn: 0.3586139 total: 445ms remaining: 1.1s
288: learn: 0.3583894 total: 446ms remaining: 1.1s
289: learn: 0.3582225 total: 448ms remaining: 1.1s
290: learn: 0.3580020 total: 450ms remaining: 1.09s
291: learn: 0.3579349 total: 451ms remaining: 1.09s
292: learn: 0.3578378 total: 452ms remaining: 1.09s
293: learn: 0.3576967 total: 453ms remaining: 1.09s
294: learn: 0.3574916 total: 455ms remaining: 1.09s
295: learn: 0.3572732 total: 456ms remaining: 1.08s
296: learn: 0.3571019 total: 458ms remaining: 1.08s
297: learn: 0.3570283 total: 459ms remaining: 1.08s
298: learn: 0.3566709 total: 461ms remaining: 1.08s
299: learn: 0.3565648 total: 463ms remaining: 1.08s
300: learn: 0.3564510 total: 465ms remaining: 1.08s
301: learn: 0.3562912 total: 466ms remaining: 1.08s
302: learn: 0.3562210 total: 468ms remaining: 1.08s
303: learn: 0.3560909 total: 470ms remaining: 1.07s
304: learn: 0.3559267 total: 472ms remaining: 1.07s
305: learn: 0.3557206 total: 473ms remaining: 1.07s
306: learn: 0.3554435 total: 476ms remaining: 1.07s
307: learn: 0.3551846 total: 477ms remaining: 1.07s
308: learn: 0.3549816 total: 480ms remaining: 1.07s
309: learn: 0.3548369 total: 482ms remaining: 1.07s
310: learn: 0.3547044 total: 484ms remaining: 1.07s
311: learn: 0.3545818 total: 485ms remaining: 1.07s
312: learn: 0.3544547 total: 487ms remaining: 1.07s
313: learn: 0.3543028 total: 489ms remaining: 1.07s
314: learn: 0.3540673 total: 491ms remaining: 1.07s
315: learn: 0.3538790 total: 493ms remaining: 1.07s
316: learn: 0.3538015 total: 495ms remaining: 1.06s
317: learn: 0.3536947 total: 496ms remaining: 1.06s
318: learn: 0.3534338 total: 498ms remaining: 1.06s
319: learn: 0.3532377 total: 500ms remaining: 1.06s
320: learn: 0.3530746 total: 502ms remaining: 1.06s
321: learn: 0.3528650 total: 503ms remaining: 1.06s
322: learn: 0.3526113 total: 505ms remaining: 1.06s
323: learn: 0.3525236 total: 507ms remaining: 1.06s
324: learn: 0.3523055 total: 509ms remaining: 1.06s
325: learn: 0.3521193 total: 510ms remaining: 1.05s
326: learn: 0.3520217 total: 512ms remaining: 1.05s
```

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327: learn: 0.3518653 total: 513ms remaining: 1.05s
328: learn: 0.3517869 total: 515ms remaining: 1.05s
329: learn: 0.3516676 total: 516ms remaining: 1.05s
330: learn: 0.3515773 total: 517ms remaining: 1.04s
331: learn: 0.3515434 total: 518ms remaining: 1.04s
332: learn: 0.3514155 total: 520ms remaining: 1.04s
333: learn: 0.3511603 total: 522ms remaining: 1.04s
334: learn: 0.3509649 total: 523ms remaining: 1.04s
335: learn: 0.3508010 total: 524ms remaining: 1.03s
336: learn: 0.3506562 total: 525ms remaining: 1.03s
337: learn: 0.3505436 total: 528ms remaining: 1.03s
338: learn: 0.3505283 total: 529ms remaining: 1.03s
339: learn: 0.3504963 total: 530ms remaining: 1.03s
340: learn: 0.3504323 total: 532ms remaining: 1.03s
341: learn: 0.3503521 total: 534ms remaining: 1.03s
342: learn: 0.3502290 total: 536ms remaining: 1.03s
343: learn: 0.3500899 total: 538ms remaining: 1.02s
344: learn: 0.3500037 total: 539ms remaining: 1.02s
345: learn: 0.3499585 total: 541ms remaining: 1.02s
346: learn: 0.3498504 total: 542ms remaining: 1.02s
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```

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686: learn: 0.3134727 total: 1.08s remaining: 492ms
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735: learn: 0.3086947 total: 1.17s remaining: 418ms
736: learn: 0.3086439 total: 1.17s remaining: 416ms
737: learn: 0.3084598 total: 1.17s remaining: 415ms
738: learn: 0.3083291 total: 1.17s remaining: 414ms
739: learn: 0.3082233 total: 1.17s remaining: 412ms
740: learn: 0.3081775 total: 1.17s remaining: 411ms
741: learn: 0.3078753 total: 1.18s remaining: 409ms
742: learn: 0.3078064 total: 1.18s remaining: 408ms
743: learn: 0.3077601 total: 1.18s remaining: 406ms
744: learn: 0.3076994 total: 1.18s remaining: 404ms
745: learn: 0.3075686 total: 1.18s remaining: 403ms
746: learn: 0.3074945 total: 1.18s remaining: 401ms
747: learn: 0.3073620 total: 1.19s remaining: 400ms
748: learn: 0.3072325 total: 1.19s remaining: 398ms
749: learn: 0.3071529 total: 1.19s remaining: 397ms
750: learn: 0.3070762 total: 1.19s remaining: 395ms
751: learn: 0.3070312 total: 1.19s remaining: 394ms
752: learn: 0.3068895 total: 1.2s remaining: 392ms
753: learn: 0.3067622 total: 1.2s remaining: 390ms
754: learn: 0.3067245 total: 1.2s remaining: 389ms
755: learn: 0.3066409 total: 1.2s remaining: 387ms
756: learn: 0.3065950 total: 1.2s remaining: 386ms
757: learn: 0.3065289 total: 1.21s remaining: 385ms
758: learn: 0.3063719 total: 1.21s remaining: 383ms
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759: learn: 0.3062620 total: 1.21s remaining: 382ms
760: learn: 0.3060592 total: 1.21s remaining: 380ms
761: learn: 0.3059408 total: 1.21s remaining: 378ms
762: learn: 0.3059048 total: 1.21s remaining: 377ms
763: learn: 0.3058575 total: 1.22s remaining: 376ms
764: learn: 0.3057421 total: 1.22s remaining: 374ms
765: learn: 0.3056756 total: 1.22s remaining: 373ms
766: learn: 0.3055682 total: 1.22s remaining: 371ms
767: learn: 0.3055086 total: 1.22s remaining: 370ms
768: learn: 0.3054382 total: 1.23s remaining: 368ms
769: learn: 0.3053424 total: 1.23s remaining: 367ms
770: learn: 0.3052256 total: 1.23s remaining: 365ms
771: learn: 0.3051605 total: 1.23s remaining: 364ms
772: learn: 0.3050168 total: 1.23s remaining: 362ms
773: learn: 0.3049022 total: 1.24s remaining: 361ms
774: learn: 0.3046861 total: 1.24s remaining: 359ms
775: learn: 0.3046654 total: 1.24s remaining: 358ms
776: learn: 0.3046018 total: 1.24s remaining: 356ms
777: learn: 0.3045091 total: 1.24s remaining: 354ms
778: learn: 0.3044193 total: 1.24s remaining: 353ms
779: learn: 0.3043824 total: 1.25s remaining: 351ms
780: learn: 0.3042647 total: 1.25s remaining: 350ms
781: learn: 0.3040299 total: 1.25s remaining: 348ms
782: learn: 0.3040038 total: 1.25s remaining: 347ms
783: learn: 0.3037923 total: 1.25s remaining: 345ms
784: learn: 0.3035388 total: 1.25s remaining: 344ms
785: learn: 0.3034845 total: 1.26s remaining: 343ms
786: learn: 0.3033105 total: 1.26s remaining: 342ms
787: learn: 0.3032863 total: 1.26s remaining: 340ms
788: learn: 0.3031052 total: 1.27s remaining: 339ms
789: learn: 0.3030154 total: 1.27s remaining: 337ms
790: learn: 0.3028564 total: 1.27s remaining: 335ms
791: learn: 0.3026861 total: 1.27s remaining: 334ms
792: learn: 0.3026243 total: 1.27s remaining: 332ms
793: learn: 0.3025734 total: 1.27s remaining: 331ms
794: learn: 0.3023428 total: 1.28s remaining: 329ms
795: learn: 0.3022051 total: 1.28s remaining: 328ms
796: learn: 0.3020884 total: 1.28s remaining: 326ms
797: learn: 0.3019426 total: 1.28s remaining: 324ms
798: learn: 0.3018082 total: 1.28s remaining: 323ms
799: learn: 0.3015487 total: 1.28s remaining: 321ms
800: learn: 0.3014664 total: 1.29s remaining: 320ms
801: learn: 0.3013822 total: 1.29s remaining: 318ms
802: learn: 0.3012479 total: 1.29s remaining: 316ms
803: learn: 0.3011318 total: 1.29s remaining: 315ms
804: learn: 0.3010558 total: 1.29s remaining: 313ms
805: learn: 0.3008967 total: 1.29s remaining: 312ms
806: learn: 0.3008232 total: 1.3s remaining: 310ms
807: learn: 0.3006106 total: 1.3s remaining: 308ms
808: learn: 0.3004381 total: 1.3s remaining: 307ms
809: learn: 0.3003495 total: 1.3s remaining: 305ms
810: learn: 0.3002341 total: 1.3s remaining: 304ms
811: learn: 0.3000992 total: 1.3s remaining: 302ms
812: learn: 0.3000331 total: 1.31s remaining: 301ms
813: learn: 0.2999409 total: 1.31s remaining: 299ms
814: learn: 0.2998932 total: 1.31s remaining: 297ms
815: learn: 0.2997953 total: 1.31s remaining: 296ms
816: learn: 0.2996666 total: 1.31s remaining: 294ms
817: learn: 0.2995889 total: 1.31s remaining: 293ms
818: learn: 0.2993859 total: 1.32s remaining: 291ms
819: learn: 0.2992235 total: 1.32s remaining: 290ms
820: learn: 0.2990963 total: 1.32s remaining: 288ms
821: learn: 0.2989587 total: 1.32s remaining: 286ms
822: learn: 0.2989204 total: 1.32s remaining: 285ms
823: learn: 0.2986913 total: 1.32s remaining: 283ms
824: learn: 0.2985928 total: 1.33s remaining: 282ms
825: learn: 0.2984129 total: 1.33s remaining: 280ms
826: learn: 0.2981823 total: 1.33s remaining: 279ms
827: learn: 0.2981076 total: 1.33s remaining: 277ms
828: learn: 0.2979995 total: 1.34s remaining: 276ms
829: learn: 0.2979882 total: 1.34s remaining: 274ms
830: learn: 0.2978561 total: 1.34s remaining: 272ms
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831: learn: 0.2978098 total: 1.34s remaining: 271ms
832: learn: 0.2977222 total: 1.34s remaining: 269ms
833: learn: 0.2976653 total: 1.34s remaining: 268ms
834: learn: 0.2976096 total: 1.34s remaining: 266ms
835: learn: 0.2975586 total: 1.35s remaining: 264ms
836: learn: 0.2973637 total: 1.35s remaining: 263ms
837: learn: 0.2973013 total: 1.35s remaining: 261ms
838: learn: 0.2971877 total: 1.35s remaining: 260ms
839: learn: 0.2971159 total: 1.35s remaining: 258ms
840: learn: 0.2970226 total: 1.35s remaining: 256ms
841: learn: 0.2969026 total: 1.36s remaining: 255ms
842: learn: 0.2968614 total: 1.36s remaining: 253ms
843: learn: 0.2967497 total: 1.36s remaining: 251ms
844: learn: 0.2964618 total: 1.36s remaining: 250ms
845: learn: 0.2963867 total: 1.36s remaining: 248ms
846: learn: 0.2962326 total: 1.36s remaining: 247ms
847: learn: 0.2961894 total: 1.37s remaining: 245ms
848: learn: 0.2961348 total: 1.37s remaining: 243ms
849: learn: 0.2960599 total: 1.37s remaining: 242ms
850: learn: 0.2959284 total: 1.37s remaining: 240ms
851: learn: 0.2958045 total: 1.37s remaining: 239ms
852: learn: 0.2956923 total: 1.38s remaining: 237ms
853: learn: 0.2956400 total: 1.38s remaining: 235ms
854: learn: 0.2955586 total: 1.38s remaining: 234ms
855: learn: 0.2955036 total: 1.38s remaining: 232ms
856: learn: 0.2953912 total: 1.38s remaining: 231ms
857: learn: 0.2951286 total: 1.38s remaining: 229ms
858: learn: 0.2948849 total: 1.39s remaining: 227ms
859: learn: 0.2948177 total: 1.39s remaining: 226ms
860: learn: 0.2947008 total: 1.39s remaining: 224ms
861: learn: 0.2946270 total: 1.39s remaining: 223ms
862: learn: 0.2944653 total: 1.39s remaining: 221ms
863: learn: 0.2944124 total: 1.39s remaining: 219ms
864: learn: 0.2943001 total: 1.39s remaining: 218ms
865: learn: 0.2940991 total: 1.4s remaining: 216ms
866: learn: 0.2940367 total: 1.4s remaining: 214ms
867: learn: 0.2940124 total: 1.4s remaining: 213ms
868: learn: 0.2939354 total: 1.4s remaining: 211ms
869: learn: 0.2938886 total: 1.4s remaining: 209ms
870: learn: 0.2938123 total: 1.4s remaining: 208ms
871: learn: 0.2937345 total: 1.41s remaining: 206ms
872: learn: 0.2936818 total: 1.41s remaining: 205ms
873: learn: 0.2936051 total: 1.41s remaining: 203ms
874: learn: 0.2934713 total: 1.41s remaining: 202ms
875: learn: 0.2933896 total: 1.41s remaining: 200ms
876: learn: 0.2933527 total: 1.42s remaining: 198ms
877: learn: 0.2931135 total: 1.42s remaining: 197ms
878: learn: 0.2930718 total: 1.42s remaining: 195ms
879: learn: 0.2929925 total: 1.42s remaining: 194ms
880: learn: 0.2929322 total: 1.42s remaining: 192ms
881: learn: 0.2928890 total: 1.43s remaining: 191ms
882: learn: 0.2928421 total: 1.43s remaining: 189ms
883: learn: 0.2926685 total: 1.43s remaining: 188ms
884: learn: 0.2926397 total: 1.43s remaining: 186ms
885: learn: 0.2925845 total: 1.43s remaining: 184ms
886: learn: 0.2925255 total: 1.44s remaining: 183ms
887: learn: 0.2923931 total: 1.44s remaining: 181ms
888: learn: 0.2923175 total: 1.44s remaining: 180ms
889: learn: 0.2921866 total: 1.44s remaining: 178ms
890: learn: 0.2920952 total: 1.44s remaining: 176ms
891: learn: 0.2920057 total: 1.44s remaining: 175ms
892: learn: 0.2919761 total: 1.45s remaining: 173ms
893: learn: 0.2917063 total: 1.45s remaining: 172ms
894: learn: 0.2915896 total: 1.45s remaining: 170ms
895: learn: 0.2915334 total: 1.45s remaining: 168ms
896: learn: 0.2914824 total: 1.45s remaining: 167ms
897: learn: 0.2913352 total: 1.46s remaining: 165ms
898: learn: 0.2912859 total: 1.46s remaining: 164ms
899: learn: 0.2911065 total: 1.46s remaining: 162ms
900: learn: 0.2910385 total: 1.46s remaining: 161ms
901: learn: 0.2909672 total: 1.46s remaining: 159ms
902: learn: 0.2908888 total: 1.46s remaining: 157ms
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903: learn: 0.2907228 total: 1.47s remaining: 156ms
904: learn: 0.2905460 total: 1.47s remaining: 154ms
905: learn: 0.2904941 total: 1.47s remaining: 152ms
906: learn: 0.2903619 total: 1.47s remaining: 151ms
907: learn: 0.2902889 total: 1.47s remaining: 149ms
908: learn: 0.2902095 total: 1.47s remaining: 147ms
909: learn: 0.2901443 total: 1.48s remaining: 146ms
910: learn: 0.2900443 total: 1.48s remaining: 144ms
911: learn: 0.2899876 total: 1.48s remaining: 143ms
912: learn: 0.2899197 total: 1.48s remaining: 141ms
913: learn: 0.2898528 total: 1.48s remaining: 139ms
914: learn: 0.2897955 total: 1.48s remaining: 138ms
915: learn: 0.2897279 total: 1.49s remaining: 136ms
916: learn: 0.2896754 total: 1.49s remaining: 135ms
917: learn: 0.2895717 total: 1.49s remaining: 133ms
918: learn: 0.2894298 total: 1.49s remaining: 131ms
919: learn: 0.2893607 total: 1.49s remaining: 130ms
920: learn: 0.2892646 total: 1.49s remaining: 128ms
921: learn: 0.2891948 total: 1.5s remaining: 126ms
922: learn: 0.2889345 total: 1.5s remaining: 125ms
923: learn: 0.2888403 total: 1.5s remaining: 123ms
924: learn: 0.2887971 total: 1.5s remaining: 122ms
925: learn: 0.2887350 total: 1.5s remaining: 120ms
926: learn: 0.2886716 total: 1.5s remaining: 118ms
927: learn: 0.2886243 total: 1.5s remaining: 117ms
928: learn: 0.2885561 total: 1.5s remaining: 115ms
929: learn: 0.2885347 total: 1.51s remaining: 113ms
930: learn: 0.2884921 total: 1.51s remaining: 112ms
931: learn: 0.2884322 total: 1.51s remaining: 110ms
932: learn: 0.2882774 total: 1.51s remaining: 109ms
933: learn: 0.2882053 total: 1.51s remaining: 107ms
934: learn: 0.2881687 total: 1.51s remaining: 105ms
935: learn: 0.2880939 total: 1.52s remaining: 104ms
936: learn: 0.2880009 total: 1.52s remaining: 102ms
937: learn: 0.2879437 total: 1.52s remaining: 100ms
938: learn: 0.2878330 total: 1.52s remaining: 98.8ms
939: learn: 0.2878206 total: 1.52s remaining: 97.2ms
940: learn: 0.2876418 total: 1.52s remaining: 95.5ms
941: learn: 0.2875530 total: 1.52s remaining: 93.9ms
942: learn: 0.2873897 total: 1.53s remaining: 92.2ms
943: learn: 0.2873269 total: 1.53s remaining: 90.6ms
944: learn: 0.2872807 total: 1.53s remaining: 89ms
945: learn: 0.2871552 total: 1.53s remaining: 87.4ms
946: learn: 0.2870853 total: 1.53s remaining: 85.8ms
947: learn: 0.2870130 total: 1.53s remaining: 84.2ms
948: learn: 0.2869247 total: 1.54s remaining: 82.6ms
949: learn: 0.2868866 total: 1.54s remaining: 81ms
950: learn: 0.2868129 total: 1.54s remaining: 79.3ms
951: learn: 0.2866944 total: 1.54s remaining: 77.7ms
952: learn: 0.2866486 total: 1.54s remaining: 76.1ms
953: learn: 0.2864803 total: 1.54s remaining: 74.5ms
954: learn: 0.2864136 total: 1.55s remaining: 72.9ms
955: learn: 0.2862728 total: 1.55s remaining: 71.3ms
956: learn: 0.2862239 total: 1.55s remaining: 69.7ms
957: learn: 0.2861472 total: 1.55s remaining: 68.1ms
958: learn: 0.2861062 total: 1.55s remaining: 66.4ms
959: learn: 0.2859993 total: 1.55s remaining: 64.8ms
960: learn: 0.2859089 total: 1.56s remaining: 63.2ms
961: learn: 0.2856823 total: 1.56s remaining: 61.6ms
962: learn: 0.2856197 total: 1.56s remaining: 60ms
963: learn: 0.2855463 total: 1.56s remaining: 58.4ms
964: learn: 0.2855192 total: 1.56s remaining: 56.7ms
965: learn: 0.2854258 total: 1.56s remaining: 55.1ms
966: learn: 0.2853525 total: 1.57s remaining: 53.5ms
967: learn: 0.2853066 total: 1.57s remaining: 51.8ms
968: learn: 0.2852359 total: 1.57s remaining: 50.2ms
969: learn: 0.2850086 total: 1.57s remaining: 48.6ms
970: learn: 0.2849521 total: 1.57s remaining: 47ms
971: learn: 0.2848553 total: 1.57s remaining: 45.4ms
972: learn: 0.2848037 total: 1.58s remaining: 43.7ms
973: learn: 0.2847295 total: 1.58s remaining: 42.1ms
974: learn: 0.2846819 total: 1.58s remaining: 40.5ms
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975: learn: 0.2846198 total: 1.58s remaining: 38.9ms
976: learn: 0.2845671 total: 1.58s remaining: 37.3ms
977: learn: 0.2844993 total: 1.58s remaining: 35.6ms
978: learn: 0.2843743 total: 1.59s remaining: 34ms
979: learn: 0.2843128 total: 1.59s remaining: 32.4ms
980: learn: 0.2840623 total: 1.59s remaining: 30.8ms
981: learn: 0.2840514 total: 1.59s remaining: 29.1ms
982: learn: 0.2840145 total: 1.59s remaining: 27.5ms
983: learn: 0.2839967 total: 1.59s remaining: 25.9ms
984: learn: 0.2838395 total: 1.6s remaining: 24.3ms
985: learn: 0.2837598 total: 1.6s remaining: 22.7ms
986: learn: 0.2837132 total: 1.6s remaining: 21.1ms
987: learn: 0.2836889 total: 1.6s remaining: 19.5ms
988: learn: 0.2836337 total: 1.6s remaining: 17.8ms
989: learn: 0.2833141 total: 1.6s remaining: 16.2ms
990: learn: 0.2832138 total: 1.61s remaining: 14.6ms
991: learn: 0.2831989 total: 1.61s remaining: 13ms
992: learn: 0.2829877 total: 1.61s remaining: 11.4ms
993: learn: 0.2829547 total: 1.61s remaining: 9.73ms
994: learn: 0.2828232 total: 1.61s remaining: 8.11ms
995: learn: 0.2827713 total: 1.61s remaining: 6.48ms
996: learn: 0.2827584 total: 1.62s remaining: 4.86ms
997: learn: 0.2827028 total: 1.62s remaining: 3.24ms
998: learn: 0.2826194 total: 1.62s remaining: 1.62ms
999: learn: 0.2825716 total: 1.62s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6868865 total: 995us remaining: 994ms
1: learn: 0.6832344 total: 1.74ms remaining: 867ms
2: learn: 0.6777161 total: 2.81ms remaining: 935ms
3: learn: 0.6719894 total: 3.81ms remaining: 950ms
4: learn: 0.6666797 total: 4.7ms remaining: 936ms
5: learn: 0.6611946 total: 5.95ms remaining: 986ms
6: learn: 0.6567689 total: 7.25ms remaining: 1.03s
7: learn: 0.6507545 total: 9.12ms remaining: 1.13s
8: learn: 0.6456411 total: 10.6ms remaining: 1.17s
9: learn: 0.6398495 total: 12.6ms remaining: 1.25s
10: learn: 0.6343829 total: 14.8ms remaining: 1.33s
11: learn: 0.6293421 total: 16.6ms remaining: 1.36s
12: learn: 0.6238549 total: 18.2ms remaining: 1.38s
13: learn: 0.6197061 total: 19.6ms remaining: 1.38s
14: learn: 0.6152307 total: 20.8ms remaining: 1.36s
15: learn: 0.6105013 total: 22ms remaining: 1.35s
16: learn: 0.6060289 total: 23.9ms remaining: 1.38s
17: learn: 0.6020764 total: 25.2ms remaining: 1.37s
18: learn: 0.5978575 total: 26.4ms remaining: 1.36s
19: learn: 0.5932484 total: 27.8ms remaining: 1.36s
20: learn: 0.5893215 total: 28.7ms remaining: 1.34s
21: learn: 0.5851092 total: 30.2ms remaining: 1.34s
22: learn: 0.5817521 total: 31ms remaining: 1.32s
23: learn: 0.5783110 total: 31.8ms remaining: 1.29s
24: learn: 0.5744891 total: 33.5ms remaining: 1.31s
25: learn: 0.5713755 total: 34.4ms remaining: 1.29s
26: learn: 0.5681602 total: 35.7ms remaining: 1.29s
27: learn: 0.5646303 total: 37.5ms remaining: 1.3s
28: learn: 0.5609593 total: 40.3ms remaining: 1.35s
29: learn: 0.5574178 total: 42ms remaining: 1.36s
30: learn: 0.5539396 total: 43.6ms remaining: 1.36s
31: learn: 0.5512109 total: 44.5ms remaining: 1.34s
32: learn: 0.5484864 total: 45.6ms remaining: 1.34s
33: learn: 0.5455501 total: 47.2ms remaining: 1.34s
34: learn: 0.5420643 total: 48.9ms remaining: 1.35s
35: learn: 0.5391452 total: 50.3ms remaining: 1.35s
36: learn: 0.5369878 total: 51.7ms remaining: 1.35s
37: learn: 0.5339692 total: 53.4ms remaining: 1.35s
38: learn: 0.5315328 total: 54.5ms remaining: 1.34s
39: learn: 0.5291227 total: 56.1ms remaining: 1.34s
40: learn: 0.5260875 total: 57.9ms remaining: 1.35s
41: learn: 0.5235804 total: 59.3ms remaining: 1.35s
42: learn: 0.5207680 total: 60.5ms remaining: 1.35s
43: learn: 0.5180863 total: 61.4ms remaining: 1.33s
44: learn: 0.5153066 total: 62.3ms remaining: 1.32s
45: learn: 0.5126480 total: 63.4ms remaining: 1.31s
```

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46: learn: 0.5101284 total: 64.6ms remaining: 1.31s
47: learn: 0.5075470 total: 65.7ms remaining: 1.3s
48: learn: 0.5053253 total: 66.8ms remaining: 1.29s
49: learn: 0.5029296 total: 67.9ms remaining: 1.29s
50: learn: 0.5011376 total: 69.3ms remaining: 1.29s
51: learn: 0.4987913 total: 70.7ms remaining: 1.29s
52: learn: 0.4968810 total: 71.5ms remaining: 1.28s
53: learn: 0.4945649 total: 72.8ms remaining: 1.27s
54: learn: 0.4929788 total: 74.2ms remaining: 1.27s
55: learn: 0.4907337 total: 75.9ms remaining: 1.28s
56: learn: 0.4885653 total: 77.7ms remaining: 1.28s
57: learn: 0.4866361 total: 79.6ms remaining: 1.29s
58: learn: 0.4847099 total: 81.3ms remaining: 1.3s
59: learn: 0.4827315 total: 83.4ms remaining: 1.31s
60: learn: 0.4807343 total: 85.1ms remaining: 1.31s
61: learn: 0.4789536 total: 86.9ms remaining: 1.31s
62: learn: 0.4774879 total: 88.8ms remaining: 1.32s
63: learn: 0.4755451 total: 90.4ms remaining: 1.32s
64: learn: 0.4741494 total: 92.8ms remaining: 1.33s
65: learn: 0.4720601 total: 94.5ms remaining: 1.34s
66: learn: 0.4703599 total: 95.8ms remaining: 1.33s
67: learn: 0.4688478 total: 97.6ms remaining: 1.34s
68: learn: 0.4672364 total: 98.9ms remaining: 1.33s
69: learn: 0.4651851 total: 101ms remaining: 1.33s
70: learn: 0.4636605 total: 102ms remaining: 1.34s
71: learn: 0.4618878 total: 103ms remaining: 1.33s
72: learn: 0.4601870 total: 105ms remaining: 1.33s
73: learn: 0.4588052 total: 106ms remaining: 1.33s
74: learn: 0.4570467 total: 108ms remaining: 1.34s
75: learn: 0.4559565 total: 112ms remaining: 1.36s
76: learn: 0.4544084 total: 115ms remaining: 1.38s
77: learn: 0.4533607 total: 117ms remaining: 1.38s
78: learn: 0.4521723 total: 118ms remaining: 1.38s
79: learn: 0.4506973 total: 120ms remaining: 1.38s
80: learn: 0.4493612 total: 121ms remaining: 1.37s
81: learn: 0.4484291 total: 123ms remaining: 1.37s
82: learn: 0.4471849 total: 124ms remaining: 1.37s
83: learn: 0.4462136 total: 127ms remaining: 1.38s
84: learn: 0.4446593 total: 129ms remaining: 1.39s
85: learn: 0.4435303 total: 131ms remaining: 1.39s
86: learn: 0.4421544 total: 133ms remaining: 1.4s
87: learn: 0.4410065 total: 135ms remaining: 1.4s
88: learn: 0.4397311 total: 136ms remaining: 1.39s
89: learn: 0.4385367 total: 138ms remaining: 1.39s
90: learn: 0.4375670 total: 140ms remaining: 1.4s
91: learn: 0.4365242 total: 141ms remaining: 1.39s
92: learn: 0.4353319 total: 143ms remaining: 1.4s
93: learn: 0.4344239 total: 145ms remaining: 1.4s
94: learn: 0.4331873 total: 147ms remaining: 1.4s
95: learn: 0.4320096 total: 149ms remaining: 1.4s
96: learn: 0.4307776 total: 151ms remaining: 1.4s
97: learn: 0.4301817 total: 153ms remaining: 1.41s
98: learn: 0.4289484 total: 154ms remaining: 1.4s
99: learn: 0.4278984 total: 156ms remaining: 1.4s
100: learn: 0.4268334 total: 157ms remaining: 1.4s
101: learn: 0.4258849 total: 160ms remaining: 1.41s
102: learn: 0.4248854 total: 161ms remaining: 1.4s
103: learn: 0.4240424 total: 163ms remaining: 1.4s
104: learn: 0.4232328 total: 165ms remaining: 1.41s
105: learn: 0.4222054 total: 167ms remaining: 1.41s
106: learn: 0.4213988 total: 169ms remaining: 1.41s
107: learn: 0.4209715 total: 170ms remaining: 1.41s
108: learn: 0.4201731 total: 172ms remaining: 1.41s
109: learn: 0.4192426 total: 174ms remaining: 1.41s
110: learn: 0.4185889 total: 175ms remaining: 1.4s
111: learn: 0.4183019 total: 176ms remaining: 1.39s
112: learn: 0.4173340 total: 178ms remaining: 1.4s
113: learn: 0.4164223 total: 180ms remaining: 1.4s
114: learn: 0.4159228 total: 182ms remaining: 1.4s
115: learn: 0.4153835 total: 184ms remaining: 1.4s
116: learn: 0.4145623 total: 185ms remaining: 1.4s
117: learn: 0.4140508 total: 187ms remaining: 1.39s
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118: learn: 0.4136068 total: 188ms remaining: 1.39s
119: learn: 0.4129104 total: 190ms remaining: 1.39s
120: learn: 0.4120456 total: 192ms remaining: 1.39s
121: learn: 0.4113431 total: 193ms remaining: 1.39s
122: learn: 0.4107716 total: 195ms remaining: 1.39s
123: learn: 0.4099918 total: 197ms remaining: 1.39s
124: learn: 0.4092784 total: 198ms remaining: 1.39s
125: learn: 0.4086786 total: 200ms remaining: 1.38s
126: learn: 0.4080991 total: 202ms remaining: 1.39s
127: learn: 0.4072752 total: 204ms remaining: 1.39s
128: learn: 0.4067714 total: 206ms remaining: 1.39s
129: learn: 0.4060493 total: 210ms remaining: 1.41s
130: learn: 0.4055276 total: 213ms remaining: 1.41s
131: learn: 0.4048630 total: 216ms remaining: 1.42s
132: learn: 0.4041728 total: 217ms remaining: 1.42s
133: learn: 0.4037014 total: 219ms remaining: 1.42s
134: learn: 0.4030358 total: 221ms remaining: 1.42s
135: learn: 0.4023344 total: 224ms remaining: 1.42s
136: learn: 0.4018977 total: 226ms remaining: 1.42s
137: learn: 0.4014289 total: 227ms remaining: 1.42s
138: learn: 0.4009396 total: 230ms remaining: 1.42s
139: learn: 0.4003782 total: 232ms remaining: 1.42s
140: learn: 0.3998891 total: 233ms remaining: 1.42s
141: learn: 0.3993795 total: 234ms remaining: 1.42s
142: learn: 0.3988720 total: 236ms remaining: 1.41s
143: learn: 0.3984400 total: 237ms remaining: 1.41s
144: learn: 0.3977521 total: 239ms remaining: 1.41s
145: learn: 0.3973931 total: 240ms remaining: 1.41s
146: learn: 0.3970947 total: 242ms remaining: 1.4s
147: learn: 0.3968210 total: 243ms remaining: 1.4s
148: learn: 0.3962770 total: 245ms remaining: 1.4s
149: learn: 0.3957488 total: 246ms remaining: 1.4s
150: learn: 0.3955608 total: 247ms remaining: 1.39s
151: learn: 0.3948994 total: 249ms remaining: 1.39s
152: learn: 0.3943706 total: 250ms remaining: 1.38s
153: learn: 0.3939046 total: 251ms remaining: 1.38s
154: learn: 0.3933575 total: 253ms remaining: 1.38s
155: learn: 0.3928749 total: 254ms remaining: 1.37s
156: learn: 0.3924566 total: 255ms remaining: 1.37s
157: learn: 0.3920478 total: 257ms remaining: 1.37s
158: learn: 0.3916372 total: 259ms remaining: 1.37s
159: learn: 0.3911543 total: 260ms remaining: 1.36s
160: learn: 0.3905734 total: 261ms remaining: 1.36s
161: learn: 0.3899789 total: 263ms remaining: 1.36s
162: learn: 0.3897495 total: 265ms remaining: 1.36s
163: learn: 0.3896938 total: 266ms remaining: 1.36s
164: learn: 0.3891220 total: 268ms remaining: 1.36s
165: learn: 0.3887932 total: 270ms remaining: 1.35s
166: learn: 0.3882453 total: 272ms remaining: 1.35s
167: learn: 0.3877700 total: 274ms remaining: 1.35s
168: learn: 0.3875691 total: 276ms remaining: 1.35s
169: learn: 0.3872019 total: 277ms remaining: 1.35s
170: learn: 0.3869552 total: 279ms remaining: 1.35s
171: learn: 0.3865739 total: 282ms remaining: 1.36s
172: learn: 0.3862634 total: 285ms remaining: 1.36s
173: learn: 0.3858238 total: 287ms remaining: 1.36s
174: learn: 0.3854740 total: 289ms remaining: 1.36s
175: learn: 0.3851621 total: 291ms remaining: 1.36s
176: learn: 0.3848253 total: 293ms remaining: 1.36s
177: learn: 0.3843681 total: 294ms remaining: 1.36s
178: learn: 0.3839190 total: 296ms remaining: 1.36s
179: learn: 0.3835515 total: 298ms remaining: 1.36s
180: learn: 0.3833698 total: 300ms remaining: 1.36s
181: learn: 0.3830613 total: 302ms remaining: 1.36s
182: learn: 0.3826090 total: 304ms remaining: 1.36s
183: learn: 0.3822090 total: 306ms remaining: 1.35s
184: learn: 0.3818498 total: 307ms remaining: 1.35s
185: learn: 0.3814583 total: 309ms remaining: 1.35s
186: learn: 0.3810241 total: 311ms remaining: 1.35s
187: learn: 0.3808127 total: 313ms remaining: 1.35s
188: learn: 0.3807484 total: 314ms remaining: 1.35s
189: learn: 0.3806223 total: 315ms remaining: 1.34s
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190: learn: 0.3804205 total: 317ms remaining: 1.34s
191: learn: 0.3801022 total: 318ms remaining: 1.34s
192: learn: 0.3796658 total: 320ms remaining: 1.34s
193: learn: 0.3792942 total: 321ms remaining: 1.33s
194: learn: 0.3789338 total: 322ms remaining: 1.33s
195: learn: 0.3787183 total: 324ms remaining: 1.33s
196: learn: 0.3782812 total: 325ms remaining: 1.32s
197: learn: 0.3779153 total: 327ms remaining: 1.32s
198: learn: 0.3776952 total: 328ms remaining: 1.32s
199: learn: 0.3775920 total: 330ms remaining: 1.32s
200: learn: 0.3772967 total: 331ms remaining: 1.32s
201: learn: 0.3769829 total: 334ms remaining: 1.32s
202: learn: 0.3766619 total: 335ms remaining: 1.31s
203: learn: 0.3765402 total: 337ms remaining: 1.32s
204: learn: 0.3764252 total: 339ms remaining: 1.31s
205: learn: 0.3761774 total: 341ms remaining: 1.32s
206: learn: 0.3760730 total: 343ms remaining: 1.31s
207: learn: 0.3757560 total: 345ms remaining: 1.31s
208: learn: 0.3754334 total: 347ms remaining: 1.31s
209: learn: 0.3750247 total: 350ms remaining: 1.31s
210: learn: 0.3746862 total: 352ms remaining: 1.31s
211: learn: 0.3745985 total: 353ms remaining: 1.31s
212: learn: 0.3743963 total: 355ms remaining: 1.31s
213: learn: 0.3741917 total: 356ms remaining: 1.31s
214: learn: 0.3739254 total: 358ms remaining: 1.31s
215: learn: 0.3736638 total: 360ms remaining: 1.31s
216: learn: 0.3734097 total: 362ms remaining: 1.3s
217: learn: 0.3731287 total: 364ms remaining: 1.3s
218: learn: 0.3728263 total: 365ms remaining: 1.3s
219: learn: 0.3725166 total: 368ms remaining: 1.3s
220: learn: 0.3722866 total: 369ms remaining: 1.3s
221: learn: 0.3720103 total: 371ms remaining: 1.3s
222: learn: 0.3716920 total: 373ms remaining: 1.3s
223: learn: 0.3713451 total: 375ms remaining: 1.3s
224: learn: 0.3712128 total: 377ms remaining: 1.3s
225: learn: 0.3708933 total: 379ms remaining: 1.3s
226: learn: 0.3706897 total: 381ms remaining: 1.3s
227: learn: 0.3705345 total: 383ms remaining: 1.3s
228: learn: 0.3702051 total: 385ms remaining: 1.3s
229: learn: 0.3701337 total: 387ms remaining: 1.3s
230: learn: 0.3698624 total: 389ms remaining: 1.29s
231: learn: 0.3695767 total: 390ms remaining: 1.29s
232: learn: 0.3694460 total: 393ms remaining: 1.29s
233: learn: 0.3691529 total: 395ms remaining: 1.29s
234: learn: 0.3690428 total: 397ms remaining: 1.29s
235: learn: 0.3687912 total: 398ms remaining: 1.29s
236: learn: 0.3684812 total: 400ms remaining: 1.29s
237: learn: 0.3680848 total: 402ms remaining: 1.29s
238: learn: 0.3677788 total: 404ms remaining: 1.28s
239: learn: 0.3676076 total: 405ms remaining: 1.28s
240: learn: 0.3673507 total: 408ms remaining: 1.28s
241: learn: 0.3671259 total: 409ms remaining: 1.28s
242: learn: 0.3668697 total: 412ms remaining: 1.28s
243: learn: 0.3666872 total: 414ms remaining: 1.28s
244: learn: 0.3665358 total: 416ms remaining: 1.28s
245: learn: 0.3663223 total: 417ms remaining: 1.28s
246: learn: 0.3661948 total: 419ms remaining: 1.28s
247: learn: 0.3659794 total: 420ms remaining: 1.27s
248: learn: 0.3657653 total: 422ms remaining: 1.27s
249: learn: 0.3656366 total: 423ms remaining: 1.27s
250: learn: 0.3655403 total: 424ms remaining: 1.26s
251: learn: 0.3653552 total: 425ms remaining: 1.26s
252: learn: 0.3653307 total: 427ms remaining: 1.26s
253: learn: 0.3652966 total: 430ms remaining: 1.26s
254: learn: 0.3650983 total: 432ms remaining: 1.26s
255: learn: 0.3647747 total: 434ms remaining: 1.26s
256: learn: 0.3645738 total: 436ms remaining: 1.26s
257: learn: 0.3644382 total: 438ms remaining: 1.26s
258: learn: 0.3642551 total: 440ms remaining: 1.26s
259: learn: 0.3640645 total: 442ms remaining: 1.26s
260: learn: 0.3639318 total: 445ms remaining: 1.26s
261: learn: 0.3637373 total: 446ms remaining: 1.26s
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262: learn: 0.3636002 total: 448ms remaining: 1.25s
263: learn: 0.3633702 total: 449ms remaining: 1.25s
264: learn: 0.3631152 total: 451ms remaining: 1.25s
265: learn: 0.3629108 total: 452ms remaining: 1.25s
266: learn: 0.3628987 total: 453ms remaining: 1.24s
267: learn: 0.3626366 total: 455ms remaining: 1.24s
268: learn: 0.3624134 total: 458ms remaining: 1.24s
269: learn: 0.3621494 total: 460ms remaining: 1.24s
270: learn: 0.3620353 total: 462ms remaining: 1.24s
271: learn: 0.3618401 total: 464ms remaining: 1.24s
272: learn: 0.3617343 total: 466ms remaining: 1.24s
273: learn: 0.3614875 total: 469ms remaining: 1.24s
274: learn: 0.3613212 total: 471ms remaining: 1.24s
275: learn: 0.3610662 total: 473ms remaining: 1.24s
276: learn: 0.3609111 total: 475ms remaining: 1.24s
277: learn: 0.3606931 total: 478ms remaining: 1.24s
278: learn: 0.3604521 total: 479ms remaining: 1.24s
279: learn: 0.3601597 total: 480ms remaining: 1.24s
280: learn: 0.3600274 total: 482ms remaining: 1.23s
281: learn: 0.3599002 total: 483ms remaining: 1.23s
282: learn: 0.3596763 total: 484ms remaining: 1.23s
283: learn: 0.3595704 total: 486ms remaining: 1.23s
284: learn: 0.3592992 total: 489ms remaining: 1.23s
285: learn: 0.3592083 total: 490ms remaining: 1.22s
286: learn: 0.3590329 total: 492ms remaining: 1.22s
287: learn: 0.3588639 total: 494ms remaining: 1.22s
288: learn: 0.3586800 total: 496ms remaining: 1.22s
289: learn: 0.3584703 total: 498ms remaining: 1.22s
290: learn: 0.3582878 total: 500ms remaining: 1.22s
291: learn: 0.3580187 total: 502ms remaining: 1.22s
292: learn: 0.3578332 total: 505ms remaining: 1.22s
293: learn: 0.3576842 total: 507ms remaining: 1.22s
294: learn: 0.3575589 total: 509ms remaining: 1.22s
295: learn: 0.3572898 total: 512ms remaining: 1.22s
296: learn: 0.3570856 total: 515ms remaining: 1.22s
297: learn: 0.3568959 total: 517ms remaining: 1.22s
298: learn: 0.3567873 total: 519ms remaining: 1.22s
299: learn: 0.3565640 total: 521ms remaining: 1.21s
300: learn: 0.3562599 total: 523ms remaining: 1.21s
301: learn: 0.3559562 total: 524ms remaining: 1.21s
302: learn: 0.3558853 total: 526ms remaining: 1.21s
303: learn: 0.3557957 total: 528ms remaining: 1.21s
304: learn: 0.3555003 total: 529ms remaining: 1.21s
305: learn: 0.3552847 total: 531ms remaining: 1.2s
306: learn: 0.3552440 total: 532ms remaining: 1.2s
307: learn: 0.3551190 total: 534ms remaining: 1.2s
308: learn: 0.3550316 total: 535ms remaining: 1.2s
309: learn: 0.3548710 total: 536ms remaining: 1.19s
310: learn: 0.3547225 total: 539ms remaining: 1.19s
311: learn: 0.3545771 total: 541ms remaining: 1.19s
312: learn: 0.3545011 total: 543ms remaining: 1.19s
313: learn: 0.3543619 total: 545ms remaining: 1.19s
314: learn: 0.3540783 total: 547ms remaining: 1.19s
315: learn: 0.3538423 total: 549ms remaining: 1.19s
316: learn: 0.3538367 total: 550ms remaining: 1.19s
317: learn: 0.3537221 total: 552ms remaining: 1.18s
318: learn: 0.3536014 total: 553ms remaining: 1.18s
319: learn: 0.3534143 total: 555ms remaining: 1.18s
320: learn: 0.3533941 total: 557ms remaining: 1.18s
321: learn: 0.3533169 total: 559ms remaining: 1.18s
322: learn: 0.3532240 total: 561ms remaining: 1.18s
323: learn: 0.3531216 total: 563ms remaining: 1.17s
324: learn: 0.3530894 total: 565ms remaining: 1.17s
325: learn: 0.3529938 total: 566ms remaining: 1.17s
326: learn: 0.3529484 total: 568ms remaining: 1.17s
327: learn: 0.3527758 total: 569ms remaining: 1.17s
328: learn: 0.3526017 total: 572ms remaining: 1.17s
329: learn: 0.3524501 total: 574ms remaining: 1.17s
330: learn: 0.3522195 total: 577ms remaining: 1.17s
331: learn: 0.3520153 total: 579ms remaining: 1.17s
332: learn: 0.3519092 total: 581ms remaining: 1.16s
333: learn: 0.3516419 total: 583ms remaining: 1.16s
```

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334: learn: 0.3513860 total: 585ms remaining: 1.16s
335: learn: 0.3511335 total: 587ms remaining: 1.16s
336: learn: 0.3509722 total: 589ms remaining: 1.16s
337: learn: 0.3508435 total: 591ms remaining: 1.16s
338: learn: 0.3506884 total: 593ms remaining: 1.16s
339: learn: 0.3505579 total: 595ms remaining: 1.15s
340: learn: 0.3504095 total: 597ms remaining: 1.15s
341: learn: 0.3502630 total: 598ms remaining: 1.15s
342: learn: 0.3501119 total: 601ms remaining: 1.15s
343: learn: 0.3499834 total: 602ms remaining: 1.15s
344: learn: 0.3498332 total: 604ms remaining: 1.15s
345: learn: 0.3495697 total: 606ms remaining: 1.15s
346: learn: 0.3494089 total: 608ms remaining: 1.14s
347: learn: 0.3493200 total: 609ms remaining: 1.14s
348: learn: 0.3492554 total: 611ms remaining: 1.14s
349: learn: 0.3491206 total: 613ms remaining: 1.14s
350: learn: 0.3489334 total: 616ms remaining: 1.14s
351: learn: 0.3487320 total: 618ms remaining: 1.14s
352: learn: 0.3485571 total: 620ms remaining: 1.14s
353: learn: 0.3484079 total: 622ms remaining: 1.13s
354: learn: 0.3482563 total: 623ms remaining: 1.13s
355: learn: 0.3480234 total: 625ms remaining: 1.13s
356: learn: 0.3479369 total: 627ms remaining: 1.13s
357: learn: 0.3478446 total: 629ms remaining: 1.13s
358: learn: 0.3476643 total: 630ms remaining: 1.13s
359: learn: 0.3475239 total: 633ms remaining: 1.13s
360: learn: 0.3474423 total: 634ms remaining: 1.12s
361: learn: 0.3472077 total: 636ms remaining: 1.12s
362: learn: 0.3470455 total: 638ms remaining: 1.12s
363: learn: 0.3469012 total: 640ms remaining: 1.12s
364: learn: 0.3467709 total: 642ms remaining: 1.12s
365: learn: 0.3467357 total: 643ms remaining: 1.11s
366: learn: 0.3466006 total: 645ms remaining: 1.11s
367: learn: 0.3464419 total: 647ms remaining: 1.11s
368: learn: 0.3464078 total: 648ms remaining: 1.11s
369: learn: 0.3462126 total: 650ms remaining: 1.11s
370: learn: 0.3461676 total: 651ms remaining: 1.1s
371: learn: 0.3460484 total: 653ms remaining: 1.1s
372: learn: 0.3459525 total: 654ms remaining: 1.1s
373: learn: 0.3458316 total: 655ms remaining: 1.1s
374: learn: 0.3455661 total: 657ms remaining: 1.09s
375: learn: 0.3454596 total: 658ms remaining: 1.09s
376: learn: 0.3453355 total: 660ms remaining: 1.09s
377: learn: 0.3452260 total: 661ms remaining: 1.09s
378: learn: 0.3451884 total: 663ms remaining: 1.09s
379: learn: 0.3451056 total: 665ms remaining: 1.08s
380: learn: 0.3449744 total: 666ms remaining: 1.08s
381: learn: 0.3447401 total: 668ms remaining: 1.08s
382: learn: 0.3445725 total: 671ms remaining: 1.08s
383: learn: 0.3443773 total: 673ms remaining: 1.08s
384: learn: 0.3442460 total: 674ms remaining: 1.08s
385: learn: 0.3440787 total: 676ms remaining: 1.07s
386: learn: 0.3439847 total: 678ms remaining: 1.07s
387: learn: 0.3439452 total: 679ms remaining: 1.07s
388: learn: 0.3438921 total: 681ms remaining: 1.07s
389: learn: 0.3438028 total: 683ms remaining: 1.07s
390: learn: 0.3435773 total: 684ms remaining: 1.07s
391: learn: 0.3434679 total: 686ms remaining: 1.06s
392: learn: 0.3434118 total: 688ms remaining: 1.06s
393: learn: 0.3432918 total: 692ms remaining: 1.06s
394: learn: 0.3430860 total: 694ms remaining: 1.06s
395: learn: 0.3430222 total: 695ms remaining: 1.06s
396: learn: 0.3429117 total: 698ms remaining: 1.06s
397: learn: 0.3427606 total: 700ms remaining: 1.06s
398: learn: 0.3426145 total: 703ms remaining: 1.06s
399: learn: 0.3425395 total: 705ms remaining: 1.06s
400: learn: 0.3421755 total: 709ms remaining: 1.06s
401: learn: 0.3419898 total: 711ms remaining: 1.06s
402: learn: 0.3418092 total: 713ms remaining: 1.06s
403: learn: 0.3415344 total: 715ms remaining: 1.05s
404: learn: 0.3414100 total: 716ms remaining: 1.05s
405: learn: 0.3413624 total: 718ms remaining: 1.05s
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406: learn: 0.3411924 total: 720ms remaining: 1.05s
407: learn: 0.3411036 total: 721ms remaining: 1.05s
408: learn: 0.3410756 total: 723ms remaining: 1.04s
409: learn: 0.3410724 total: 724ms remaining: 1.04s
410: learn: 0.3408725 total: 727ms remaining: 1.04s
411: learn: 0.3407916 total: 729ms remaining: 1.04s
412: learn: 0.3406844 total: 731ms remaining: 1.04s
413: learn: 0.3404090 total: 732ms remaining: 1.04s
414: learn: 0.3403980 total: 734ms remaining: 1.03s
415: learn: 0.3402561 total: 736ms remaining: 1.03s
416: learn: 0.3400374 total: 737ms remaining: 1.03s
417: learn: 0.3399516 total: 739ms remaining: 1.03s
418: learn: 0.3398016 total: 742ms remaining: 1.03s
419: learn: 0.3396561 total: 744ms remaining: 1.03s
420: learn: 0.3395297 total: 745ms remaining: 1.02s
421: learn: 0.3395238 total: 746ms remaining: 1.02s
422: learn: 0.3394476 total: 748ms remaining: 1.02s
423: learn: 0.3391982 total: 750ms remaining: 1.02s
424: learn: 0.3390671 total: 752ms remaining: 1.02s
425: learn: 0.3389720 total: 754ms remaining: 1.01s
426: learn: 0.3387385 total: 756ms remaining: 1.01s
427: learn: 0.3386384 total: 758ms remaining: 1.01s
428: learn: 0.3383603 total: 760ms remaining: 1.01s
429: learn: 0.3381437 total: 763ms remaining: 1.01s
430: learn: 0.3379679 total: 764ms remaining: 1.01s
431: learn: 0.3377385 total: 766ms remaining: 1.01s
432: learn: 0.3376706 total: 768ms remaining: 1s
433: learn: 0.3375539 total: 771ms remaining: 1.01s
434: learn: 0.3373854 total: 774ms remaining: 1s
435: learn: 0.3373260 total: 777ms remaining: 1s
436: learn: 0.3371505 total: 779ms remaining: 1s
437: learn: 0.3370978 total: 781ms remaining: 1s
438: learn: 0.3370412 total: 783ms remaining: 1s
439: learn: 0.3368537 total: 784ms remaining: 997ms
440: learn: 0.3367726 total: 787ms remaining: 997ms
441: learn: 0.3365139 total: 790ms remaining: 997ms
442: learn: 0.3364019 total: 792ms remaining: 995ms
443: learn: 0.3363871 total: 795ms remaining: 995ms
444: learn: 0.3362310 total: 796ms remaining: 993ms
445: learn: 0.3360864 total: 798ms remaining: 992ms
446: learn: 0.3360674 total: 799ms remaining: 989ms
447: learn: 0.3360523 total: 800ms remaining: 986ms
448: learn: 0.3359644 total: 802ms remaining: 984ms
449: learn: 0.3357076 total: 805ms remaining: 984ms
450: learn: 0.3355539 total: 808ms remaining: 984ms
451: learn: 0.3355253 total: 811ms remaining: 983ms
452: learn: 0.3353724 total: 813ms remaining: 981ms
453: learn: 0.3351841 total: 814ms remaining: 979ms
454: learn: 0.3348289 total: 818ms remaining: 980ms
455: learn: 0.3347808 total: 820ms remaining: 978ms
456: learn: 0.3347785 total: 823ms remaining: 978ms
457: learn: 0.3345432 total: 826ms remaining: 977ms
458: learn: 0.3344062 total: 827ms remaining: 975ms
459: learn: 0.3342281 total: 829ms remaining: 973ms
460: learn: 0.3340434 total: 831ms remaining: 972ms
461: learn: 0.3339615 total: 834ms remaining: 971ms
462: learn: 0.3338418 total: 837ms remaining: 971ms
463: learn: 0.3336929 total: 839ms remaining: 969ms
464: learn: 0.3336128 total: 841ms remaining: 968ms
465: learn: 0.3334990 total: 844ms remaining: 967ms
466: learn: 0.3334211 total: 846ms remaining: 965ms
467: learn: 0.3333859 total: 847ms remaining: 963ms
468: learn: 0.3332399 total: 849ms remaining: 962ms
469: learn: 0.3330433 total: 852ms remaining: 960ms
470: learn: 0.3328191 total: 853ms remaining: 958ms
471: learn: 0.3326590 total: 856ms remaining: 957ms
472: learn: 0.3324292 total: 858ms remaining: 956ms
473: learn: 0.3322415 total: 859ms remaining: 954ms
474: learn: 0.3321949 total: 863ms remaining: 953ms
475: learn: 0.3320571 total: 865ms remaining: 952ms
476: learn: 0.3319982 total: 867ms remaining: 950ms
477: learn: 0.3318994 total: 869ms remaining: 949ms
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478: learn: 0.3318478 total: 871ms remaining: 947ms
479: learn: 0.3317739 total: 873ms remaining: 945ms
480: learn: 0.3316346 total: 874ms remaining: 943ms
481: learn: 0.3315226 total: 877ms remaining: 942ms
482: learn: 0.3312435 total: 878ms remaining: 940ms
483: learn: 0.3311126 total: 880ms remaining: 938ms
484: learn: 0.3311076 total: 881ms remaining: 936ms
485: learn: 0.3309333 total: 883ms remaining: 934ms
486: learn: 0.3307946 total: 885ms remaining: 932ms
487: learn: 0.3306953 total: 887ms remaining: 931ms
488: learn: 0.3305836 total: 888ms remaining: 928ms
489: learn: 0.3304824 total: 890ms remaining: 926ms
490: learn: 0.3304054 total: 892ms remaining: 925ms
491: learn: 0.3301009 total: 894ms remaining: 923ms
492: learn: 0.3299143 total: 896ms remaining: 922ms
493: learn: 0.3298060 total: 899ms remaining: 921ms
494: learn: 0.3297923 total: 901ms remaining: 919ms
495: learn: 0.3296617 total: 903ms remaining: 918ms
496: learn: 0.3295230 total: 905ms remaining: 916ms
497: learn: 0.3294305 total: 907ms remaining: 915ms
498: learn: 0.3293267 total: 909ms remaining: 913ms
499: learn: 0.3292260 total: 911ms remaining: 911ms
500: learn: 0.3291695 total: 914ms remaining: 910ms
501: learn: 0.3290367 total: 915ms remaining: 908ms
502: learn: 0.3289125 total: 918ms remaining: 907ms
503: learn: 0.3287147 total: 919ms remaining: 904ms
504: learn: 0.3284568 total: 921ms remaining: 903ms
505: learn: 0.3282816 total: 923ms remaining: 901ms
506: learn: 0.3281568 total: 925ms remaining: 899ms
507: learn: 0.3280350 total: 926ms remaining: 897ms
508: learn: 0.3279372 total: 929ms remaining: 896ms
509: learn: 0.3277389 total: 931ms remaining: 895ms
510: learn: 0.3275036 total: 933ms remaining: 893ms
511: learn: 0.3274198 total: 935ms remaining: 891ms
512: learn: 0.3272569 total: 937ms remaining: 890ms
513: learn: 0.3271109 total: 939ms remaining: 887ms
514: learn: 0.3269047 total: 940ms remaining: 885ms
515: learn: 0.3267371 total: 942ms remaining: 884ms
516: learn: 0.3267142 total: 943ms remaining: 881ms
517: learn: 0.3266242 total: 946ms remaining: 880ms
518: learn: 0.3265950 total: 947ms remaining: 878ms
519: learn: 0.3264563 total: 950ms remaining: 877ms
520: learn: 0.3263865 total: 952ms remaining: 876ms
521: learn: 0.3263723 total: 953ms remaining: 873ms
522: learn: 0.3263014 total: 955ms remaining: 871ms
523: learn: 0.3261901 total: 957ms remaining: 869ms
524: learn: 0.3259344 total: 959ms remaining: 868ms
525: learn: 0.3257857 total: 961ms remaining: 866ms
526: learn: 0.3257319 total: 962ms remaining: 864ms
527: learn: 0.3257272 total: 964ms remaining: 861ms
528: learn: 0.3256990 total: 965ms remaining: 859ms
529: learn: 0.3255492 total: 967ms remaining: 857ms
530: learn: 0.3254324 total: 968ms remaining: 855ms
531: learn: 0.3252718 total: 970ms remaining: 854ms
532: learn: 0.3251023 total: 972ms remaining: 851ms
533: learn: 0.3250383 total: 973ms remaining: 849ms
534: learn: 0.3250001 total: 974ms remaining: 846ms
535: learn: 0.3248772 total: 975ms remaining: 844ms
536: learn: 0.3248679 total: 976ms remaining: 842ms
537: learn: 0.3247401 total: 977ms remaining: 839ms
538: learn: 0.3245467 total: 980ms remaining: 838ms
539: learn: 0.3244075 total: 982ms remaining: 836ms
540: learn: 0.3242072 total: 984ms remaining: 835ms
541: learn: 0.3241604 total: 985ms remaining: 833ms
542: learn: 0.3239865 total: 987ms remaining: 830ms
543: learn: 0.3239303 total: 988ms remaining: 828ms
544: learn: 0.3237366 total: 990ms remaining: 826ms
545: learn: 0.3236592 total: 991ms remaining: 824ms
546: learn: 0.3236312 total: 992ms remaining: 822ms
547: learn: 0.3235756 total: 994ms remaining: 820ms
548: learn: 0.3235134 total: 995ms remaining: 818ms
549: learn: 0.3233803 total: 997ms remaining: 816ms
```

```
550: learn: 0.3232700 total: 999ms remaining: 814ms
551: learn: 0.3231477 total: 1s remaining: 812ms
552: learn: 0.3229937 total: 1s remaining: 810ms
553: learn: 0.3228533 total: 1s remaining: 808ms
554: learn: 0.3226956 total: 1s remaining: 806ms
555: learn: 0.3226020 total: 1.01s remaining: 804ms
556: learn: 0.3224511 total: 1.01s remaining: 802ms
557: learn: 0.3224130 total: 1.01s remaining: 800ms
558: learn: 0.3223973 total: 1.01s remaining: 798ms
559: learn: 0.3222775 total: 1.01s remaining: 796ms
560: learn: 0.3220496 total: 1.01s remaining: 794ms
561: learn: 0.3218755 total: 1.02s remaining: 792ms
562: learn: 0.3215259 total: 1.02s remaining: 791ms
563: learn: 0.3213698 total: 1.02s remaining: 789ms
564: learn: 0.3212526 total: 1.02s remaining: 787ms
565: learn: 0.3211272 total: 1.02s remaining: 786ms
566: learn: 0.3209535 total: 1.03s remaining: 784ms
567: learn: 0.3207994 total: 1.03s remaining: 782ms
568: learn: 0.3207422 total: 1.03s remaining: 780ms
569: learn: 0.3206127 total: 1.03s remaining: 779ms
570: learn: 0.3205936 total: 1.03s remaining: 777ms
571: learn: 0.3204866 total: 1.04s remaining: 775ms
572: learn: 0.3204183 total: 1.04s remaining: 773ms
573: learn: 0.3203474 total: 1.04s remaining: 771ms
574: learn: 0.3202713 total: 1.04s remaining: 769ms
575: learn: 0.3202101 total: 1.04s remaining: 767ms
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577: learn: 0.3200909 total: 1.04s remaining: 763ms
578: learn: 0.3199674 total: 1.05s remaining: 761ms
579: learn: 0.3199108 total: 1.05s remaining: 759ms
580: learn: 0.3198089 total: 1.05s remaining: 757ms
581: learn: 0.3195951 total: 1.05s remaining: 755ms
582: learn: 0.3195147 total: 1.05s remaining: 753ms
583: learn: 0.3194242 total: 1.05s remaining: 751ms
584: learn: 0.3190798 total: 1.05s remaining: 749ms
585: learn: 0.3190288 total: 1.06s remaining: 746ms
586: learn: 0.3188976 total: 1.06s remaining: 744ms
587: learn: 0.3188765 total: 1.06s remaining: 742ms
588: learn: 0.3187575 total: 1.06s remaining: 740ms
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590: learn: 0.3184708 total: 1.06s remaining: 736ms
591: learn: 0.3184306 total: 1.06s remaining: 733ms
592: learn: 0.3183230 total: 1.06s remaining: 731ms
593: learn: 0.3182491 total: 1.07s remaining: 729ms
594: learn: 0.3182318 total: 1.07s remaining: 726ms
595: learn: 0.3181439 total: 1.07s remaining: 724ms
596: learn: 0.3180614 total: 1.07s remaining: 723ms
597: learn: 0.3180123 total: 1.07s remaining: 721ms
598: learn: 0.3177561 total: 1.07s remaining: 719ms
599: learn: 0.3175489 total: 1.07s remaining: 717ms
600: learn: 0.3174418 total: 1.08s remaining: 715ms
601: learn: 0.3173537 total: 1.08s remaining: 713ms
602: learn: 0.3172617 total: 1.08s remaining: 711ms
603: learn: 0.3170294 total: 1.08s remaining: 709ms
604: learn: 0.3169547 total: 1.08s remaining: 707ms
605: learn: 0.3168110 total: 1.08s remaining: 705ms
606: learn: 0.3166694 total: 1.08s remaining: 703ms
607: learn: 0.3165433 total: 1.09s remaining: 701ms
608: learn: 0.3164237 total: 1.09s remaining: 699ms
609: learn: 0.3162366 total: 1.09s remaining: 697ms
610: learn: 0.3162153 total: 1.09s remaining: 695ms
611: learn: 0.3161184 total: 1.09s remaining: 693ms
612: learn: 0.3160552 total: 1.09s remaining: 691ms
613: learn: 0.3159109 total: 1.09s remaining: 689ms
614: learn: 0.3157323 total: 1.1s remaining: 686ms
615: learn: 0.3156013 total: 1.1s remaining: 684ms
616: learn: 0.3154942 total: 1.1s remaining: 682ms
617: learn: 0.3153963 total: 1.1s remaining: 680ms
618: learn: 0.3153261 total: 1.1s remaining: 678ms
619: learn: 0.3151864 total: 1.1s remaining: 676ms
620: learn: 0.3150941 total: 1.1s remaining: 674ms
621: learn: 0.3150400 total: 1.1s remaining: 672ms
```

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622: learn: 0.3148917 total: 1.11s remaining: 670ms
623: learn: 0.3148012 total: 1.11s remaining: 668ms
624: learn: 0.3147183 total: 1.11s remaining: 665ms
625: learn: 0.3145877 total: 1.11s remaining: 663ms
626: learn: 0.3144785 total: 1.11s remaining: 661ms
627: learn: 0.3144121 total: 1.11s remaining: 659ms
628: learn: 0.3142342 total: 1.11s remaining: 657ms
629: learn: 0.3141814 total: 1.11s remaining: 655ms
630: learn: 0.3138583 total: 1.12s remaining: 653ms
631: learn: 0.3136936 total: 1.12s remaining: 651ms
632: learn: 0.3135712 total: 1.12s remaining: 649ms
633: learn: 0.3134026 total: 1.12s remaining: 647ms
634: learn: 0.3132855 total: 1.12s remaining: 645ms
635: learn: 0.3132401 total: 1.12s remaining: 643ms
636: learn: 0.3131976 total: 1.12s remaining: 641ms
637: learn: 0.3131361 total: 1.13s remaining: 639ms
638: learn: 0.3129682 total: 1.13s remaining: 637ms
639: learn: 0.3127431 total: 1.13s remaining: 635ms
640: learn: 0.3126377 total: 1.13s remaining: 633ms
641: learn: 0.3125716 total: 1.13s remaining: 631ms
642: learn: 0.3124050 total: 1.13s remaining: 629ms
643: learn: 0.3123534 total: 1.13s remaining: 627ms
644: learn: 0.3123235 total: 1.14s remaining: 625ms
645: learn: 0.3121958 total: 1.14s remaining: 623ms
646: learn: 0.3121154 total: 1.14s remaining: 621ms
647: learn: 0.3120537 total: 1.14s remaining: 619ms
648: learn: 0.3119129 total: 1.14s remaining: 617ms
649: learn: 0.3117262 total: 1.14s remaining: 615ms
650: learn: 0.3116444 total: 1.14s remaining: 613ms
651: learn: 0.3114279 total: 1.15s remaining: 611ms
652: learn: 0.3112185 total: 1.15s remaining: 610ms
653: learn: 0.3110805 total: 1.15s remaining: 608ms
654: learn: 0.3109194 total: 1.15s remaining: 606ms
655: learn: 0.3107704 total: 1.15s remaining: 604ms
656: learn: 0.3106633 total: 1.15s remaining: 603ms
657: learn: 0.3105898 total: 1.16s remaining: 601ms
658: learn: 0.3104445 total: 1.16s remaining: 599ms
659: learn: 0.3103228 total: 1.16s remaining: 597ms
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662: learn: 0.3099786 total: 1.16s remaining: 592ms
663: learn: 0.3099071 total: 1.17s remaining: 590ms
664: learn: 0.3098321 total: 1.17s remaining: 588ms
665: learn: 0.3098036 total: 1.17s remaining: 586ms
666: learn: 0.3097948 total: 1.17s remaining: 584ms
667: learn: 0.3094490 total: 1.17s remaining: 582ms
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669: learn: 0.3092607 total: 1.17s remaining: 578ms
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673: learn: 0.3086986 total: 1.18s remaining: 570ms
674: learn: 0.3085733 total: 1.18s remaining: 568ms
675: learn: 0.3085015 total: 1.18s remaining: 567ms
676: learn: 0.3084932 total: 1.18s remaining: 565ms
677: learn: 0.3084243 total: 1.19s remaining: 563ms
678: learn: 0.3082752 total: 1.19s remaining: 561ms
679: learn: 0.3080299 total: 1.19s remaining: 560ms
680: learn: 0.3078960 total: 1.19s remaining: 558ms
681: learn: 0.3077504 total: 1.19s remaining: 556ms
682: learn: 0.3076155 total: 1.19s remaining: 554ms
683: learn: 0.3075337 total: 1.2s remaining: 552ms
684: learn: 0.3074955 total: 1.2s remaining: 550ms
685: learn: 0.3073535 total: 1.2s remaining: 548ms
686: learn: 0.3071900 total: 1.2s remaining: 546ms
687: learn: 0.3071315 total: 1.2s remaining: 544ms
688: learn: 0.3069493 total: 1.2s remaining: 542ms
689: learn: 0.3067549 total: 1.2s remaining: 540ms
690: learn: 0.3066155 total: 1.2s remaining: 538ms
691: learn: 0.3064510 total: 1.21s remaining: 536ms
692: learn: 0.3063159 total: 1.21s remaining: 534ms
693: learn: 0.3060764 total: 1.21s remaining: 533ms
```

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694: learn: 0.3060397 total: 1.21s remaining: 531ms
695: learn: 0.3059184 total: 1.21s remaining: 529ms
696: learn: 0.3057752 total: 1.21s remaining: 527ms
697: learn: 0.3056935 total: 1.21s remaining: 525ms
698: learn: 0.3056300 total: 1.21s remaining: 523ms
699: learn: 0.3054107 total: 1.22s remaining: 521ms
700: learn: 0.3054041 total: 1.22s remaining: 519ms
701: learn: 0.3053077 total: 1.22s remaining: 517ms
702: learn: 0.3050396 total: 1.22s remaining: 515ms
703: learn: 0.3049391 total: 1.22s remaining: 514ms
704: learn: 0.3048246 total: 1.22s remaining: 512ms
705: learn: 0.3046969 total: 1.23s remaining: 510ms
706: learn: 0.3046460 total: 1.23s remaining: 508ms
707: learn: 0.3044492 total: 1.23s remaining: 507ms
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709: learn: 0.3042980 total: 1.23s remaining: 503ms
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712: learn: 0.3038695 total: 1.24s remaining: 498ms
713: learn: 0.3038015 total: 1.24s remaining: 496ms
714: learn: 0.3036952 total: 1.24s remaining: 494ms
715: learn: 0.3035222 total: 1.24s remaining: 493ms
716: learn: 0.3033379 total: 1.24s remaining: 491ms
717: learn: 0.3032242 total: 1.24s remaining: 489ms
718: learn: 0.3031498 total: 1.25s remaining: 487ms
719: learn: 0.3030495 total: 1.25s remaining: 486ms
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721: learn: 0.3027491 total: 1.25s remaining: 482ms
722: learn: 0.3026036 total: 1.25s remaining: 481ms
723: learn: 0.3025227 total: 1.26s remaining: 479ms
724: learn: 0.3023726 total: 1.26s remaining: 477ms
725: learn: 0.3022744 total: 1.26s remaining: 476ms
726: learn: 0.3022026 total: 1.26s remaining: 474ms
727: learn: 0.3021086 total: 1.26s remaining: 472ms
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729: learn: 0.3019005 total: 1.27s remaining: 469ms
730: learn: 0.3018544 total: 1.27s remaining: 467ms
731: learn: 0.3017226 total: 1.27s remaining: 465ms
732: learn: 0.3015917 total: 1.27s remaining: 463ms
733: learn: 0.3014741 total: 1.27s remaining: 461ms
734: learn: 0.3013960 total: 1.27s remaining: 460ms
735: learn: 0.3012053 total: 1.28s remaining: 458ms
736: learn: 0.3011712 total: 1.28s remaining: 456ms
737: learn: 0.3009547 total: 1.28s remaining: 454ms
738: learn: 0.3008765 total: 1.28s remaining: 452ms
739: learn: 0.3007502 total: 1.28s remaining: 450ms
740: learn: 0.3006930 total: 1.28s remaining: 448ms
741: learn: 0.3006390 total: 1.28s remaining: 447ms
742: learn: 0.3003314 total: 1.28s remaining: 445ms
743: learn: 0.3001027 total: 1.29s remaining: 443ms
744: learn: 0.3000372 total: 1.29s remaining: 441ms
745: learn: 0.2999881 total: 1.29s remaining: 439ms
746: learn: 0.2999574 total: 1.29s remaining: 437ms
747: learn: 0.2997630 total: 1.29s remaining: 436ms
748: learn: 0.2996787 total: 1.29s remaining: 434ms
749: learn: 0.2995545 total: 1.29s remaining: 432ms
750: learn: 0.2995179 total: 1.29s remaining: 430ms
751: learn: 0.2994739 total: 1.3s remaining: 428ms
752: learn: 0.2993872 total: 1.3s remaining: 426ms
753: learn: 0.2992157 total: 1.3s remaining: 424ms
754: learn: 0.2991628 total: 1.3s remaining: 423ms
755: learn: 0.2991576 total: 1.3s remaining: 421ms
756: learn: 0.2990008 total: 1.3s remaining: 419ms
757: learn: 0.2988494 total: 1.31s remaining: 417ms
758: learn: 0.2986718 total: 1.31s remaining: 415ms
759: learn: 0.2985325 total: 1.31s remaining: 414ms
760: learn: 0.2984411 total: 1.31s remaining: 412ms
761: learn: 0.2983349 total: 1.31s remaining: 410ms
762: learn: 0.2981147 total: 1.31s remaining: 408ms
763: learn: 0.2979948 total: 1.31s remaining: 406ms
764: learn: 0.2978382 total: 1.32s remaining: 405ms
765: learn: 0.2977684 total: 1.32s remaining: 404ms
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766: learn: 0.2977158 total: 1.32s remaining: 402ms
767: learn: 0.2976796 total: 1.33s remaining: 401ms
768: learn: 0.2975278 total: 1.33s remaining: 399ms
769: learn: 0.2974358 total: 1.33s remaining: 398ms
770: learn: 0.2972221 total: 1.33s remaining: 397ms
771: learn: 0.2971601 total: 1.34s remaining: 395ms
772: learn: 0.2969826 total: 1.34s remaining: 393ms
773: learn: 0.2968065 total: 1.34s remaining: 392ms
774: learn: 0.2965433 total: 1.34s remaining: 390ms
775: learn: 0.2964414 total: 1.34s remaining: 388ms
776: learn: 0.2963118 total: 1.35s remaining: 387ms
777: learn: 0.2960789 total: 1.35s remaining: 385ms
778: learn: 0.2958735 total: 1.35s remaining: 384ms
779: learn: 0.2957492 total: 1.35s remaining: 382ms
780: learn: 0.2956211 total: 1.35s remaining: 380ms
781: learn: 0.2955372 total: 1.36s remaining: 378ms
782: learn: 0.2954782 total: 1.36s remaining: 377ms
783: learn: 0.2953753 total: 1.36s remaining: 375ms
784: learn: 0.2953486 total: 1.36s remaining: 373ms
785: learn: 0.2951487 total: 1.36s remaining: 372ms
786: learn: 0.2950441 total: 1.37s remaining: 370ms
787: learn: 0.2949594 total: 1.37s remaining: 368ms
788: learn: 0.2948643 total: 1.37s remaining: 367ms
789: learn: 0.2947557 total: 1.37s remaining: 365ms
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795: learn: 0.2940819 total: 1.38s remaining: 355ms
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797: learn: 0.2938948 total: 1.39s remaining: 351ms
798: learn: 0.2938157 total: 1.39s remaining: 350ms
799: learn: 0.2937849 total: 1.39s remaining: 348ms
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802: learn: 0.2933761 total: 1.4s remaining: 342ms
803: learn: 0.2933268 total: 1.4s remaining: 341ms
804: learn: 0.2932328 total: 1.4s remaining: 339ms
805: learn: 0.2931541 total: 1.4s remaining: 337ms
806: learn: 0.2930431 total: 1.4s remaining: 336ms
807: learn: 0.2928664 total: 1.41s remaining: 334ms
808: learn: 0.2927760 total: 1.41s remaining: 332ms
809: learn: 0.2925667 total: 1.41s remaining: 331ms
810: learn: 0.2924140 total: 1.41s remaining: 329ms
811: learn: 0.2923620 total: 1.41s remaining: 328ms
812: learn: 0.2923114 total: 1.42s remaining: 326ms
813: learn: 0.2921857 total: 1.42s remaining: 324ms
814: learn: 0.2921198 total: 1.42s remaining: 323ms
815: learn: 0.2920114 total: 1.42s remaining: 321ms
816: learn: 0.2918151 total: 1.42s remaining: 319ms
817: learn: 0.2917210 total: 1.43s remaining: 317ms
818: learn: 0.2916808 total: 1.43s remaining: 316ms
819: learn: 0.2915799 total: 1.43s remaining: 314ms
820: learn: 0.2914968 total: 1.43s remaining: 312ms
821: learn: 0.2914303 total: 1.43s remaining: 310ms
822: learn: 0.2913280 total: 1.44s remaining: 309ms
823: learn: 0.2911574 total: 1.44s remaining: 307ms
824: learn: 0.2910669 total: 1.44s remaining: 305ms
825: learn: 0.2908270 total: 1.44s remaining: 304ms
826: learn: 0.2906955 total: 1.44s remaining: 302ms
827: learn: 0.2906195 total: 1.45s remaining: 300ms
828: learn: 0.2905731 total: 1.45s remaining: 298ms
829: learn: 0.2904447 total: 1.45s remaining: 297ms
830: learn: 0.2903536 total: 1.45s remaining: 295ms
831: learn: 0.2902524 total: 1.45s remaining: 293ms
832: learn: 0.2902063 total: 1.45s remaining: 291ms
833: learn: 0.2901534 total: 1.45s remaining: 289ms
834: learn: 0.2900632 total: 1.46s remaining: 288ms
835: learn: 0.2900065 total: 1.46s remaining: 286ms
836: learn: 0.2899374 total: 1.46s remaining: 284ms
837: learn: 0.2898568 total: 1.46s remaining: 282ms
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838: learn: 0.2897979 total: 1.46s remaining: 281ms
839: learn: 0.2897601 total: 1.46s remaining: 279ms
840: learn: 0.2896012 total: 1.46s remaining: 277ms
841: learn: 0.2895210 total: 1.47s remaining: 275ms
842: learn: 0.2893467 total: 1.47s remaining: 273ms
843: learn: 0.2892090 total: 1.47s remaining: 272ms
844: learn: 0.2890116 total: 1.47s remaining: 270ms
845: learn: 0.2887473 total: 1.47s remaining: 268ms
846: learn: 0.2886007 total: 1.47s remaining: 266ms
847: learn: 0.2885379 total: 1.48s remaining: 264ms
848: learn: 0.2884625 total: 1.48s remaining: 263ms
849: learn: 0.2884256 total: 1.48s remaining: 261ms
850: learn: 0.2883630 total: 1.48s remaining: 259ms
851: learn: 0.2882381 total: 1.48s remaining: 257ms
852: learn: 0.2882126 total: 1.48s remaining: 256ms
853: learn: 0.2880335 total: 1.49s remaining: 254ms
854: learn: 0.2879637 total: 1.49s remaining: 252ms
855: learn: 0.2878805 total: 1.49s remaining: 251ms
856: learn: 0.2878177 total: 1.49s remaining: 249ms
857: learn: 0.2876908 total: 1.49s remaining: 247ms
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859: learn: 0.2873698 total: 1.5s remaining: 244ms
860: learn: 0.2872261 total: 1.5s remaining: 242ms
861: learn: 0.2871165 total: 1.5s remaining: 241ms
862: learn: 0.2870274 total: 1.51s remaining: 240ms
863: learn: 0.2869010 total: 1.51s remaining: 238ms
864: learn: 0.2868181 total: 1.51s remaining: 236ms
865: learn: 0.2867183 total: 1.52s remaining: 235ms
866: learn: 0.2865942 total: 1.52s remaining: 233ms
867: learn: 0.2865104 total: 1.52s remaining: 231ms
868: learn: 0.2864252 total: 1.52s remaining: 229ms
869: learn: 0.2863068 total: 1.52s remaining: 228ms
870: learn: 0.2861963 total: 1.52s remaining: 226ms
871: learn: 0.2861424 total: 1.53s remaining: 224ms
872: learn: 0.2860560 total: 1.53s remaining: 222ms
873: learn: 0.2859687 total: 1.53s remaining: 221ms
874: learn: 0.2859082 total: 1.53s remaining: 219ms
875: learn: 0.2858538 total: 1.53s remaining: 217ms
876: learn: 0.2858078 total: 1.53s remaining: 215ms
877: learn: 0.2857463 total: 1.53s remaining: 213ms
878: learn: 0.2856800 total: 1.54s remaining: 212ms
879: learn: 0.2855043 total: 1.54s remaining: 210ms
880: learn: 0.2853746 total: 1.54s remaining: 208ms
881: learn: 0.2849959 total: 1.54s remaining: 206ms
882: learn: 0.2849551 total: 1.54s remaining: 205ms
883: learn: 0.2849224 total: 1.54s remaining: 203ms
884: learn: 0.2847906 total: 1.55s remaining: 201ms
885: learn: 0.2845678 total: 1.55s remaining: 199ms
886: learn: 0.2845471 total: 1.55s remaining: 197ms
887: learn: 0.2844078 total: 1.55s remaining: 196ms
888: learn: 0.2842765 total: 1.55s remaining: 194ms
889: learn: 0.2841951 total: 1.55s remaining: 192ms
890: learn: 0.2841335 total: 1.56s remaining: 190ms
891: learn: 0.2840352 total: 1.56s remaining: 189ms
892: learn: 0.2839585 total: 1.56s remaining: 187ms
893: learn: 0.2838457 total: 1.56s remaining: 185ms
894: learn: 0.2837659 total: 1.56s remaining: 183ms
895: learn: 0.2836424 total: 1.56s remaining: 182ms
896: learn: 0.2833619 total: 1.57s remaining: 180ms
897: learn: 0.2833071 total: 1.57s remaining: 178ms
898: learn: 0.2830808 total: 1.57s remaining: 176ms
899: learn: 0.2830227 total: 1.57s remaining: 175ms
900: learn: 0.2829258 total: 1.57s remaining: 173ms
901: learn: 0.2827161 total: 1.57s remaining: 171ms
902: learn: 0.2824735 total: 1.57s remaining: 169ms
903: learn: 0.2823216 total: 1.58s remaining: 168ms
904: learn: 0.2820460 total: 1.58s remaining: 166ms
905: learn: 0.2819463 total: 1.58s remaining: 164ms
906: learn: 0.2818345 total: 1.58s remaining: 162ms
907: learn: 0.2817070 total: 1.58s remaining: 160ms
908: learn: 0.2816144 total: 1.58s remaining: 159ms
909: learn: 0.2815185 total: 1.58s remaining: 157ms
```

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910: learn: 0.2814292 total: 1.59s remaining: 155ms
911: learn: 0.2813229 total: 1.59s remaining: 153ms
912: learn: 0.2812418 total: 1.59s remaining: 152ms
913: learn: 0.2811517 total: 1.59s remaining: 150ms
914: learn: 0.2809691 total: 1.59s remaining: 148ms
915: learn: 0.2809020 total: 1.59s remaining: 146ms
916: learn: 0.2808362 total: 1.6s remaining: 145ms
917: learn: 0.2807456 total: 1.6s remaining: 143ms
918: learn: 0.2806774 total: 1.6s remaining: 141ms
919: learn: 0.2805967 total: 1.6s remaining: 139ms
920: learn: 0.2804135 total: 1.6s remaining: 138ms
921: learn: 0.2802288 total: 1.6s remaining: 136ms
922: learn: 0.2801334 total: 1.61s remaining: 134ms
923: learn: 0.2799996 total: 1.61s remaining: 132ms
924: learn: 0.2798774 total: 1.61s remaining: 131ms
925: learn: 0.2797242 total: 1.61s remaining: 129ms
926: learn: 0.2795286 total: 1.61s remaining: 127ms
927: learn: 0.2794710 total: 1.61s remaining: 125ms
928: learn: 0.2793186 total: 1.61s remaining: 123ms
929: learn: 0.2792662 total: 1.62s remaining: 122ms
930: learn: 0.2791387 total: 1.62s remaining: 120ms
931: learn: 0.2788874 total: 1.62s remaining: 118ms
932: learn: 0.2787810 total: 1.62s remaining: 116ms
933: learn: 0.2785359 total: 1.62s remaining: 115ms
934: learn: 0.2782864 total: 1.63s remaining: 113ms
935: learn: 0.2782364 total: 1.63s remaining: 111ms
936: learn: 0.2781577 total: 1.63s remaining: 109ms
937: learn: 0.2781049 total: 1.63s remaining: 108ms
938: learn: 0.2780262 total: 1.63s remaining: 106ms
939: learn: 0.2779000 total: 1.63s remaining: 104ms
940: learn: 0.2778651 total: 1.63s remaining: 102ms
941: learn: 0.2777881 total: 1.64s remaining: 101ms
942: learn: 0.2775669 total: 1.64s remaining: 99ms
943: learn: 0.2774778 total: 1.64s remaining: 97.3ms
944: learn: 0.2773867 total: 1.64s remaining: 95.5ms
945: learn: 0.2773436 total: 1.64s remaining: 93.8ms
946: learn: 0.2772294 total: 1.64s remaining: 92ms
947: learn: 0.2770199 total: 1.65s remaining: 90.3ms
948: learn: 0.2769432 total: 1.65s remaining: 88.5ms
949: learn: 0.2768562 total: 1.65s remaining: 86.8ms
950: learn: 0.2767053 total: 1.65s remaining: 85ms
951: learn: 0.2765552 total: 1.65s remaining: 83.3ms
952: learn: 0.2764256 total: 1.65s remaining: 81.5ms
953: learn: 0.2763859 total: 1.65s remaining: 79.7ms
954: learn: 0.2763032 total: 1.65s remaining: 77.9ms
955: learn: 0.2762157 total: 1.66s remaining: 76.2ms
956: learn: 0.2761614 total: 1.66s remaining: 74.4ms
957: learn: 0.2760341 total: 1.66s remaining: 72.7ms
958: learn: 0.2758778 total: 1.66s remaining: 70.9ms
959: learn: 0.2758103 total: 1.66s remaining: 69.2ms
960: learn: 0.2757329 total: 1.66s remaining: 67.4ms
961: learn: 0.2756788 total: 1.66s remaining: 65.7ms
962: learn: 0.2755426 total: 1.66s remaining: 63.9ms
963: learn: 0.2754601 total: 1.67s remaining: 62.2ms
964: learn: 0.2754429 total: 1.67s remaining: 60.5ms
965: learn: 0.2753706 total: 1.67s remaining: 58.7ms
966: learn: 0.2753067 total: 1.67s remaining: 57ms
967: learn: 0.2752289 total: 1.67s remaining: 55.2ms
968: learn: 0.2750765 total: 1.67s remaining: 53.5ms
969: learn: 0.2750251 total: 1.67s remaining: 51.8ms
970: learn: 0.2749378 total: 1.68s remaining: 50ms
971: learn: 0.2748460 total: 1.68s remaining: 48.3ms
972: learn: 0.2747106 total: 1.68s remaining: 46.6ms
973: learn: 0.2746069 total: 1.68s remaining: 44.8ms
974: learn: 0.2745628 total: 1.68s remaining: 43.1ms
975: learn: 0.2743987 total: 1.68s remaining: 41.4ms
976: learn: 0.2742597 total: 1.69s remaining: 39.7ms
977: learn: 0.2742181 total: 1.69s remaining: 38ms
978: learn: 0.2741310 total: 1.69s remaining: 36.2ms
979: learn: 0.2739881 total: 1.69s remaining: 34.5ms
980: learn: 0.2739163 total: 1.69s remaining: 32.8ms
981: learn: 0.2738509 total: 1.69s remaining: 31ms
```

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982: learn: 0.2737787 total: 1.69s remaining: 29.3ms
983: learn: 0.2737311 total: 1.7s remaining: 27.6ms
984: learn: 0.2736076 total: 1.7s remaining: 25.8ms
985: learn: 0.2735421 total: 1.7s remaining: 24.1ms
986: learn: 0.2734852 total: 1.7s remaining: 22.4ms
987: learn: 0.2733917 total: 1.7s remaining: 20.6ms
988: learn: 0.2733293 total: 1.7s remaining: 18.9ms
989: learn: 0.2730990 total: 1.7s remaining: 17.2ms
990: learn: 0.2730365 total: 1.7s remaining: 15.5ms
991: learn: 0.2729485 total: 1.71s remaining: 13.8ms
992: learn: 0.2727718 total: 1.71s remaining: 12ms
993: learn: 0.2727012 total: 1.71s remaining: 10.3ms
994: learn: 0.2726062 total: 1.71s remaining: 8.59ms
995: learn: 0.2724622 total: 1.71s remaining: 6.87ms
996: learn: 0.2722898 total: 1.71s remaining: 5.15ms
997: learn: 0.2721951 total: 1.71s remaining: 3.43ms
998: learn: 0.2720596 total: 1.72s remaining: 1.72ms
999: learn: 0.2719870 total: 1.72s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6870720 total: 1.22ms remaining: 1.22s
1: learn: 0.6836316 total: 1.83ms remaining: 914ms
2: learn: 0.6782466 total: 3.11ms remaining: 1.03s
3: learn: 0.6726155 total: 4.52ms remaining: 1.13s
4: learn: 0.6672615 total: 5.54ms remaining: 1.1s
5: learn: 0.6620676 total: 7.13ms remaining: 1.18s
6: learn: 0.6577458 total: 8.08ms remaining: 1.15s
7: learn: 0.6523884 total: 9.22ms remaining: 1.14s
8: learn: 0.6473924 total: 10.6ms remaining: 1.16s
9: learn: 0.6417101 total: 12ms remaining: 1.19s
10: learn: 0.6363925 total: 13.3ms remaining: 1.2s
11: learn: 0.6315151 total: 14.3ms remaining: 1.18s
12: learn: 0.6270662 total: 15.1ms remaining: 1.14s
13: learn: 0.6226990 total: 16.2ms remaining: 1.14s
14: learn: 0.6185230 total: 16.9ms remaining: 1.11s
15: learn: 0.6142648 total: 18.1ms remaining: 1.11s
16: learn: 0.6099159 total: 19.4ms remaining: 1.12s
17: learn: 0.6061084 total: 20.7ms remaining: 1.13s
18: learn: 0.6020574 total: 22.1ms remaining: 1.14s
19: learn: 0.5974126 total: 23.6ms remaining: 1.16s
20: learn: 0.5935405 total: 24.6ms remaining: 1.15s
21: learn: 0.5893255 total: 25.8ms remaining: 1.15s
22: learn: 0.5853872 total: 27.5ms remaining: 1.17s
23: learn: 0.5814954 total: 29.4ms remaining: 1.19s
24: learn: 0.5775641 total: 30.9ms remaining: 1.21s
25: learn: 0.5736709 total: 32.1ms remaining: 1.2s
26: learn: 0.5700531 total: 33.1ms remaining: 1.19s
27: learn: 0.5664320 total: 34.6ms remaining: 1.2s
28: learn: 0.5627143 total: 36.1ms remaining: 1.21s
29: learn: 0.5594237 total: 37.7ms remaining: 1.22s
30: learn: 0.5559559 total: 39.1ms remaining: 1.22s
31: learn: 0.5532708 total: 40ms remaining: 1.21s
32: learn: 0.5501841 total: 41.2ms remaining: 1.21s
33: learn: 0.5475768 total: 42.7ms remaining: 1.21s
34: learn: 0.5456383 total: 44.2ms remaining: 1.22s
35: learn: 0.5431224 total: 45.4ms remaining: 1.22s
36: learn: 0.5408347 total: 46.2ms remaining: 1.2s
37: learn: 0.5376886 total: 47.8ms remaining: 1.21s
38: learn: 0.5349569 total: 49.1ms remaining: 1.21s
39: learn: 0.5323619 total: 50.6ms remaining: 1.21s
40: learn: 0.5302200 total: 52.2ms remaining: 1.22s
41: learn: 0.5288894 total: 53ms remaining: 1.21s
42: learn: 0.5256725 total: 54.6ms remaining: 1.21s
43: learn: 0.5230611 total: 56ms remaining: 1.22s
44: learn: 0.5203702 total: 57.3ms remaining: 1.22s
45: learn: 0.5176744 total: 58.7ms remaining: 1.22s
46: learn: 0.5156881 total: 60.4ms remaining: 1.23s
47: learn: 0.5129313 total: 61.8ms remaining: 1.23s
48: learn: 0.5106715 total: 63.1ms remaining: 1.22s
49: learn: 0.5083803 total: 64.5ms remaining: 1.22s
50: learn: 0.5065186 total: 65.7ms remaining: 1.22s
51: learn: 0.5042916 total: 67.3ms remaining: 1.23s
52: learn: 0.5021545 total: 68.7ms remaining: 1.23s
```

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53: learn: 0.5002735 total: 70.3ms remaining: 1.23s
54: learn: 0.4983232 total: 72.2ms remaining: 1.24s
55: learn: 0.4964379 total: 74.2ms remaining: 1.25s
56: learn: 0.4942771 total: 75.8ms remaining: 1.25s
57: learn: 0.4921228 total: 77.8ms remaining: 1.26s
58: learn: 0.4905165 total: 79.3ms remaining: 1.26s
59: learn: 0.4890143 total: 80.4ms remaining: 1.26s
60: learn: 0.4870678 total: 82.5ms remaining: 1.27s
61: learn: 0.4853801 total: 83.8ms remaining: 1.27s
62: learn: 0.4835807 total: 85.7ms remaining: 1.27s
63: learn: 0.4816805 total: 87.5ms remaining: 1.28s
64: learn: 0.4803813 total: 89.3ms remaining: 1.28s
65: learn: 0.4784449 total: 90.8ms remaining: 1.28s
66: learn: 0.4768813 total: 92.3ms remaining: 1.28s
67: learn: 0.4753175 total: 93.8ms remaining: 1.28s
68: learn: 0.4738060 total: 95.6ms remaining: 1.29s
69: learn: 0.4721525 total: 97.2ms remaining: 1.29s
70: learn: 0.4704949 total: 98.9ms remaining: 1.29s
71: learn: 0.4688355 total: 100ms remaining: 1.29s
72: learn: 0.4675127 total: 102ms remaining: 1.29s
73: learn: 0.4661282 total: 105ms remaining: 1.31s
74: learn: 0.4644363 total: 106ms remaining: 1.31s
75: learn: 0.4631644 total: 108ms remaining: 1.31s
76: learn: 0.4617190 total: 110ms remaining: 1.31s
77: learn: 0.4608319 total: 111ms remaining: 1.31s
78: learn: 0.4598351 total: 113ms remaining: 1.31s
79: learn: 0.4585495 total: 114ms remaining: 1.31s
80: learn: 0.4572515 total: 115ms remaining: 1.31s
81: learn: 0.4558086 total: 117ms remaining: 1.31s
82: learn: 0.4544961 total: 118ms remaining: 1.31s
83: learn: 0.4536558 total: 120ms remaining: 1.31s
84: learn: 0.4525595 total: 122ms remaining: 1.31s
85: learn: 0.4514230 total: 123ms remaining: 1.31s
86: learn: 0.4500229 total: 125ms remaining: 1.31s
87: learn: 0.4489631 total: 127ms remaining: 1.32s
88: learn: 0.4477743 total: 129ms remaining: 1.32s
89: learn: 0.4465490 total: 131ms remaining: 1.32s
90: learn: 0.4454852 total: 133ms remaining: 1.32s
91: learn: 0.4445604 total: 134ms remaining: 1.32s
92: learn: 0.4435213 total: 136ms remaining: 1.32s
93: learn: 0.4425833 total: 137ms remaining: 1.32s
94: learn: 0.4412698 total: 139ms remaining: 1.32s
95: learn: 0.4400763 total: 140ms remaining: 1.32s
96: learn: 0.4388264 total: 141ms remaining: 1.31s
97: learn: 0.4381534 total: 143ms remaining: 1.31s
98: learn: 0.4373320 total: 144ms remaining: 1.31s
99: learn: 0.4362760 total: 147ms remaining: 1.32s
100: learn: 0.4352868 total: 149ms remaining: 1.32s
101: learn: 0.4344053 total: 150ms remaining: 1.32s
102: learn: 0.4333991 total: 152ms remaining: 1.32s
103: learn: 0.4325435 total: 154ms remaining: 1.33s
104: learn: 0.4313914 total: 156ms remaining: 1.33s
105: learn: 0.4304050 total: 158ms remaining: 1.33s
106: learn: 0.4296329 total: 160ms remaining: 1.33s
107: learn: 0.4285543 total: 161ms remaining: 1.33s
108: learn: 0.4276701 total: 163ms remaining: 1.33s
109: learn: 0.4267561 total: 164ms remaining: 1.33s
110: learn: 0.4258022 total: 166ms remaining: 1.33s
111: learn: 0.4252822 total: 167ms remaining: 1.33s
112: learn: 0.4245512 total: 169ms remaining: 1.32s
113: learn: 0.4240501 total: 170ms remaining: 1.32s
114: learn: 0.4233417 total: 172ms remaining: 1.32s
115: learn: 0.4227918 total: 174ms remaining: 1.32s
116: learn: 0.4222295 total: 175ms remaining: 1.32s
117: learn: 0.4217048 total: 177ms remaining: 1.32s
118: learn: 0.4209865 total: 179ms remaining: 1.32s
119: learn: 0.4202205 total: 181ms remaining: 1.33s
120: learn: 0.4194107 total: 183ms remaining: 1.33s
121: learn: 0.4188343 total: 185ms remaining: 1.33s
122: learn: 0.4181962 total: 187ms remaining: 1.33s
123: learn: 0.4176065 total: 189ms remaining: 1.33s
124: learn: 0.4171265 total: 191ms remaining: 1.33s
```

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125: learn: 0.4167247 total: 192ms remaining: 1.33s
126: learn: 0.4159616 total: 194ms remaining: 1.33s
127: learn: 0.4154708 total: 195ms remaining: 1.33s
128: learn: 0.4148567 total: 197ms remaining: 1.33s
129: learn: 0.4142140 total: 200ms remaining: 1.34s
130: learn: 0.4135255 total: 202ms remaining: 1.34s
131: learn: 0.4128749 total: 203ms remaining: 1.34s
132: learn: 0.4122640 total: 205ms remaining: 1.33s
133: learn: 0.4116775 total: 206ms remaining: 1.33s
134: learn: 0.4113848 total: 208ms remaining: 1.33s
135: learn: 0.4108845 total: 210ms remaining: 1.33s
136: learn: 0.4102575 total: 211ms remaining: 1.33s
137: learn: 0.4097457 total: 212ms remaining: 1.32s
138: learn: 0.4093120 total: 213ms remaining: 1.32s
139: learn: 0.4086510 total: 214ms remaining: 1.32s
140: learn: 0.4081524 total: 216ms remaining: 1.31s
141: learn: 0.4077314 total: 217ms remaining: 1.31s
142: learn: 0.4073578 total: 219ms remaining: 1.31s
143: learn: 0.4068241 total: 220ms remaining: 1.31s
144: learn: 0.4067545 total: 221ms remaining: 1.3s
145: learn: 0.4064431 total: 223ms remaining: 1.3s
146: learn: 0.4060806 total: 224ms remaining: 1.3s
147: learn: 0.4054642 total: 225ms remaining: 1.3s
148: learn: 0.4048460 total: 227ms remaining: 1.3s
149: learn: 0.4044599 total: 229ms remaining: 1.3s
150: learn: 0.4040061 total: 231ms remaining: 1.3s
151: learn: 0.4034841 total: 232ms remaining: 1.3s
152: learn: 0.4032653 total: 234ms remaining: 1.29s
153: learn: 0.4028677 total: 236ms remaining: 1.3s
154: learn: 0.4025705 total: 238ms remaining: 1.3s
155: learn: 0.4020478 total: 241ms remaining: 1.3s
156: learn: 0.4018028 total: 243ms remaining: 1.3s
157: learn: 0.4013954 total: 245ms remaining: 1.3s
158: learn: 0.4011103 total: 247ms remaining: 1.31s
159: learn: 0.4008901 total: 249ms remaining: 1.31s
160: learn: 0.4005618 total: 251ms remaining: 1.31s
161: learn: 0.4003300 total: 252ms remaining: 1.3s
162: learn: 0.3998785 total: 254ms remaining: 1.3s
163: learn: 0.3996616 total: 256ms remaining: 1.3s
164: learn: 0.3991719 total: 258ms remaining: 1.31s
165: learn: 0.3988683 total: 260ms remaining: 1.31s
166: learn: 0.3983521 total: 262ms remaining: 1.3s
167: learn: 0.3977895 total: 263ms remaining: 1.3s
168: learn: 0.3974676 total: 266ms remaining: 1.31s
169: learn: 0.3970918 total: 268ms remaining: 1.31s
170: learn: 0.3966806 total: 270ms remaining: 1.31s
171: learn: 0.3962760 total: 272ms remaining: 1.31s
172: learn: 0.3959499 total: 274ms remaining: 1.31s
173: learn: 0.3956154 total: 276ms remaining: 1.31s
174: learn: 0.3953530 total: 278ms remaining: 1.31s
175: learn: 0.3950602 total: 280ms remaining: 1.31s
176: learn: 0.3946598 total: 282ms remaining: 1.31s
177: learn: 0.3943762 total: 285ms remaining: 1.31s
178: learn: 0.3940305 total: 288ms remaining: 1.32s
179: learn: 0.3936495 total: 290ms remaining: 1.32s
180: learn: 0.3934717 total: 291ms remaining: 1.32s
181: learn: 0.3931530 total: 293ms remaining: 1.32s
182: learn: 0.3927265 total: 295ms remaining: 1.32s
183: learn: 0.3923047 total: 298ms remaining: 1.32s
184: learn: 0.3917873 total: 300ms remaining: 1.32s
185: learn: 0.3914667 total: 302ms remaining: 1.32s
186: learn: 0.3910411 total: 305ms remaining: 1.32s
187: learn: 0.3908297 total: 306ms remaining: 1.32s
188: learn: 0.3907617 total: 307ms remaining: 1.32s
189: learn: 0.3904371 total: 308ms remaining: 1.31s
190: learn: 0.3900130 total: 310ms remaining: 1.31s
191: learn: 0.3898132 total: 312ms remaining: 1.31s
192: learn: 0.3897684 total: 313ms remaining: 1.31s
193: learn: 0.3895115 total: 314ms remaining: 1.31s
194: learn: 0.3890906 total: 316ms remaining: 1.3s
195: learn: 0.3888588 total: 318ms remaining: 1.3s
196: learn: 0.3885576 total: 319ms remaining: 1.3s
```

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197: learn: 0.3883854 total: 321ms remaining: 1.3s
198: learn: 0.3879284 total: 324ms remaining: 1.3s
199: learn: 0.3877299 total: 326ms remaining: 1.3s
200: learn: 0.3876158 total: 327ms remaining: 1.3s
201: learn: 0.3874430 total: 329ms remaining: 1.3s
202: learn: 0.3871556 total: 330ms remaining: 1.3s
203: learn: 0.3869292 total: 332ms remaining: 1.3s
204: learn: 0.3866463 total: 334ms remaining: 1.29s
205: learn: 0.3863009 total: 336ms remaining: 1.29s
206: learn: 0.3859627 total: 337ms remaining: 1.29s
207: learn: 0.3856907 total: 340ms remaining: 1.29s
208: learn: 0.3854983 total: 342ms remaining: 1.29s
209: learn: 0.3851742 total: 343ms remaining: 1.29s
210: learn: 0.3850798 total: 345ms remaining: 1.29s
211: learn: 0.3849180 total: 347ms remaining: 1.29s
212: learn: 0.3844971 total: 348ms remaining: 1.29s
213: learn: 0.3841659 total: 350ms remaining: 1.28s
214: learn: 0.3839092 total: 352ms remaining: 1.28s
215: learn: 0.3834458 total: 354ms remaining: 1.28s
216: learn: 0.3831539 total: 357ms remaining: 1.29s
217: learn: 0.3828020 total: 359ms remaining: 1.29s
218: learn: 0.3825659 total: 361ms remaining: 1.29s
219: learn: 0.3823757 total: 363ms remaining: 1.29s
220: learn: 0.3821094 total: 366ms remaining: 1.29s
221: learn: 0.3819189 total: 368ms remaining: 1.29s
222: learn: 0.3816011 total: 370ms remaining: 1.29s
223: learn: 0.3814525 total: 372ms remaining: 1.29s
224: learn: 0.3812261 total: 373ms remaining: 1.29s
225: learn: 0.3811172 total: 375ms remaining: 1.28s
226: learn: 0.3809055 total: 377ms remaining: 1.28s
227: learn: 0.3805198 total: 378ms remaining: 1.28s
228: learn: 0.3803723 total: 380ms remaining: 1.28s
229: learn: 0.3801043 total: 381ms remaining: 1.28s
230: learn: 0.3798295 total: 383ms remaining: 1.27s
231: learn: 0.3796270 total: 385ms remaining: 1.27s
232: learn: 0.3793864 total: 386ms remaining: 1.27s
233: learn: 0.3791323 total: 387ms remaining: 1.27s
234: learn: 0.3788519 total: 389ms remaining: 1.27s
235: learn: 0.3787289 total: 391ms remaining: 1.27s
236: learn: 0.3786387 total: 393ms remaining: 1.26s
237: learn: 0.3783474 total: 395ms remaining: 1.26s
238: learn: 0.3780320 total: 397ms remaining: 1.26s
239: learn: 0.3776342 total: 399ms remaining: 1.26s
240: learn: 0.3775009 total: 401ms remaining: 1.26s
241: learn: 0.3773070 total: 402ms remaining: 1.26s
242: learn: 0.3772902 total: 403ms remaining: 1.26s
243: learn: 0.3770659 total: 405ms remaining: 1.25s
244: learn: 0.3767410 total: 406ms remaining: 1.25s
245: learn: 0.3763896 total: 408ms remaining: 1.25s
246: learn: 0.3762147 total: 409ms remaining: 1.25s
247: learn: 0.3759841 total: 411ms remaining: 1.25s
248: learn: 0.3759077 total: 412ms remaining: 1.24s
249: learn: 0.3757580 total: 414ms remaining: 1.24s
250: learn: 0.3755474 total: 416ms remaining: 1.24s
251: learn: 0.3752243 total: 418ms remaining: 1.24s
252: learn: 0.3748993 total: 420ms remaining: 1.24s
253: learn: 0.3747568 total: 421ms remaining: 1.24s
254: learn: 0.3746261 total: 422ms remaining: 1.23s
255: learn: 0.3744067 total: 424ms remaining: 1.23s
256: learn: 0.3742120 total: 426ms remaining: 1.23s
257: learn: 0.3741835 total: 427ms remaining: 1.23s
258: learn: 0.3738426 total: 429ms remaining: 1.23s
259: learn: 0.3736895 total: 432ms remaining: 1.23s
260: learn: 0.3734846 total: 434ms remaining: 1.23s
261: learn: 0.3733098 total: 436ms remaining: 1.23s
262: learn: 0.3730078 total: 438ms remaining: 1.23s
263: learn: 0.3728563 total: 440ms remaining: 1.23s
264: learn: 0.3725898 total: 443ms remaining: 1.23s
265: learn: 0.3724367 total: 447ms remaining: 1.23s
266: learn: 0.3721949 total: 450ms remaining: 1.24s
267: learn: 0.3719877 total: 452ms remaining: 1.23s
268: learn: 0.3718827 total: 454ms remaining: 1.23s
```

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269: learn: 0.3717583 total: 456ms remaining: 1.23s
270: learn: 0.3714034 total: 458ms remaining: 1.23s
271: learn: 0.3713347 total: 460ms remaining: 1.23s
272: learn: 0.3711351 total: 462ms remaining: 1.23s
273: learn: 0.3709756 total: 463ms remaining: 1.23s
274: learn: 0.3707796 total: 465ms remaining: 1.23s
275: learn: 0.3705002 total: 467ms remaining: 1.23s
276: learn: 0.3703071 total: 469ms remaining: 1.22s
277: learn: 0.3702235 total: 470ms remaining: 1.22s
278: learn: 0.3700193 total: 473ms remaining: 1.22s
279: learn: 0.3699323 total: 474ms remaining: 1.22s
280: learn: 0.3699120 total: 475ms remaining: 1.22s
281: learn: 0.3697299 total: 477ms remaining: 1.21s
282: learn: 0.3696741 total: 479ms remaining: 1.21s
283: learn: 0.3695714 total: 480ms remaining: 1.21s
284: learn: 0.3693919 total: 483ms remaining: 1.21s
285: learn: 0.3691777 total: 485ms remaining: 1.21s
286: learn: 0.3688488 total: 487ms remaining: 1.21s
287: learn: 0.3686921 total: 488ms remaining: 1.21s
288: learn: 0.3685106 total: 490ms remaining: 1.21s
289: learn: 0.3684370 total: 492ms remaining: 1.2s
290: learn: 0.3682000 total: 494ms remaining: 1.2s
291: learn: 0.3680798 total: 496ms remaining: 1.2s
292: learn: 0.3678188 total: 498ms remaining: 1.2s
293: learn: 0.3677898 total: 500ms remaining: 1.2s
294: learn: 0.3675852 total: 504ms remaining: 1.2s
295: learn: 0.3674911 total: 506ms remaining: 1.2s
296: learn: 0.3672723 total: 507ms remaining: 1.2s
297: learn: 0.3671667 total: 508ms remaining: 1.2s
298: learn: 0.3668691 total: 510ms remaining: 1.2s
299: learn: 0.3668624 total: 511ms remaining: 1.19s
300: learn: 0.3667224 total: 514ms remaining: 1.19s
301: learn: 0.3667148 total: 516ms remaining: 1.19s
302: learn: 0.3666120 total: 517ms remaining: 1.19s
303: learn: 0.3665457 total: 519ms remaining: 1.19s
304: learn: 0.3664546 total: 520ms remaining: 1.19s
305: learn: 0.3662332 total: 523ms remaining: 1.19s
306: learn: 0.3661720 total: 524ms remaining: 1.18s
307: learn: 0.3659930 total: 526ms remaining: 1.18s
308: learn: 0.3657504 total: 528ms remaining: 1.18s
309: learn: 0.3655853 total: 530ms remaining: 1.18s
310: learn: 0.3652759 total: 532ms remaining: 1.18s
311: learn: 0.3652429 total: 533ms remaining: 1.18s
312: learn: 0.3651062 total: 535ms remaining: 1.17s
313: learn: 0.3650649 total: 537ms remaining: 1.17s
314: learn: 0.3648465 total: 539ms remaining: 1.17s
315: learn: 0.3646253 total: 541ms remaining: 1.17s
316: learn: 0.3643180 total: 543ms remaining: 1.17s
317: learn: 0.3641116 total: 545ms remaining: 1.17s
318: learn: 0.3638345 total: 547ms remaining: 1.17s
319: learn: 0.3636260 total: 549ms remaining: 1.17s
320: learn: 0.3633499 total: 550ms remaining: 1.16s
321: learn: 0.3632244 total: 554ms remaining: 1.17s
322: learn: 0.3629747 total: 556ms remaining: 1.16s
323: learn: 0.3627808 total: 559ms remaining: 1.17s
324: learn: 0.3627555 total: 561ms remaining: 1.16s
325: learn: 0.3625800 total: 563ms remaining: 1.16s
326: learn: 0.3625172 total: 565ms remaining: 1.16s
327: learn: 0.3623177 total: 567ms remaining: 1.16s
328: learn: 0.3621953 total: 569ms remaining: 1.16s
329: learn: 0.3619685 total: 570ms remaining: 1.16s
330: learn: 0.3619274 total: 573ms remaining: 1.16s
331: learn: 0.3619136 total: 574ms remaining: 1.15s
332: learn: 0.3617967 total: 577ms remaining: 1.16s
333: learn: 0.3615855 total: 579ms remaining: 1.16s
334: learn: 0.3614310 total: 582ms remaining: 1.15s
335: learn: 0.3612476 total: 584ms remaining: 1.15s
336: learn: 0.3610964 total: 585ms remaining: 1.15s
337: learn: 0.3610202 total: 587ms remaining: 1.15s
338: learn: 0.3609077 total: 589ms remaining: 1.15s
339: learn: 0.3605854 total: 590ms remaining: 1.15s
340: learn: 0.3604652 total: 592ms remaining: 1.14s
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341: learn: 0.3604148 total: 593ms remaining: 1.14s
342: learn: 0.3602964 total: 594ms remaining: 1.14s
343: learn: 0.3602600 total: 595ms remaining: 1.13s
344: learn: 0.3601388 total: 597ms remaining: 1.13s
345: learn: 0.3601176 total: 597ms remaining: 1.13s
346: learn: 0.3599425 total: 599ms remaining: 1.13s
347: learn: 0.3597121 total: 601ms remaining: 1.13s
348: learn: 0.3595917 total: 602ms remaining: 1.12s
349: learn: 0.3594139 total: 606ms remaining: 1.13s
350: learn: 0.3593265 total: 609ms remaining: 1.13s
351: learn: 0.3591595 total: 612ms remaining: 1.13s
352: learn: 0.3590276 total: 614ms remaining: 1.12s
353: learn: 0.3587920 total: 618ms remaining: 1.13s
354: learn: 0.3585859 total: 620ms remaining: 1.13s
355: learn: 0.3585283 total: 622ms remaining: 1.12s
356: learn: 0.3584105 total: 624ms remaining: 1.12s
357: learn: 0.3582667 total: 625ms remaining: 1.12s
358: learn: 0.3581041 total: 628ms remaining: 1.12s
359: learn: 0.3580590 total: 629ms remaining: 1.12s
360: learn: 0.3578856 total: 631ms remaining: 1.12s
361: learn: 0.3577945 total: 633ms remaining: 1.12s
362: learn: 0.3576507 total: 635ms remaining: 1.11s
363: learn: 0.3574328 total: 637ms remaining: 1.11s
364: learn: 0.3573025 total: 639ms remaining: 1.11s
365: learn: 0.3572262 total: 641ms remaining: 1.11s
366: learn: 0.3572042 total: 643ms remaining: 1.11s
367: learn: 0.3569783 total: 646ms remaining: 1.11s
368: learn: 0.3568448 total: 648ms remaining: 1.11s
369: learn: 0.3566778 total: 650ms remaining: 1.11s
370: learn: 0.3566273 total: 652ms remaining: 1.1s
371: learn: 0.3564685 total: 654ms remaining: 1.1s
372: learn: 0.3563010 total: 656ms remaining: 1.1s
373: learn: 0.3562238 total: 659ms remaining: 1.1s
374: learn: 0.3560776 total: 661ms remaining: 1.1s
375: learn: 0.3558996 total: 662ms remaining: 1.1s
376: learn: 0.3557458 total: 665ms remaining: 1.1s
377: learn: 0.3556605 total: 667ms remaining: 1.1s
378: learn: 0.3555166 total: 670ms remaining: 1.1s
379: learn: 0.3554211 total: 672ms remaining: 1.1s
380: learn: 0.3552821 total: 675ms remaining: 1.09s
381: learn: 0.3552312 total: 676ms remaining: 1.09s
382: learn: 0.3549724 total: 678ms remaining: 1.09s
383: learn: 0.3549468 total: 680ms remaining: 1.09s
384: learn: 0.3547712 total: 683ms remaining: 1.09s
385: learn: 0.3545818 total: 685ms remaining: 1.09s
386: learn: 0.3545002 total: 687ms remaining: 1.09s
387: learn: 0.3543892 total: 689ms remaining: 1.08s
388: learn: 0.3542745 total: 691ms remaining: 1.08s
389: learn: 0.3542584 total: 692ms remaining: 1.08s
390: learn: 0.3540551 total: 694ms remaining: 1.08s
391: learn: 0.3538696 total: 697ms remaining: 1.08s
392: learn: 0.3536663 total: 699ms remaining: 1.08s
393: learn: 0.3535523 total: 701ms remaining: 1.08s
394: learn: 0.3534425 total: 703ms remaining: 1.08s
395: learn: 0.3533561 total: 705ms remaining: 1.07s
396: learn: 0.3531686 total: 707ms remaining: 1.07s
397: learn: 0.3531197 total: 709ms remaining: 1.07s
398: learn: 0.3529314 total: 710ms remaining: 1.07s
399: learn: 0.3528374 total: 713ms remaining: 1.07s
400: learn: 0.3525502 total: 715ms remaining: 1.07s
401: learn: 0.3524578 total: 717ms remaining: 1.07s
402: learn: 0.3522685 total: 719ms remaining: 1.06s
403: learn: 0.3522125 total: 720ms remaining: 1.06s
404: learn: 0.3521042 total: 722ms remaining: 1.06s
405: learn: 0.3520805 total: 723ms remaining: 1.06s
406: learn: 0.3519995 total: 725ms remaining: 1.06s
407: learn: 0.3519536 total: 726ms remaining: 1.05s
408: learn: 0.3516862 total: 728ms remaining: 1.05s
409: learn: 0.3515807 total: 730ms remaining: 1.05s
410: learn: 0.3514498 total: 731ms remaining: 1.05s
411: learn: 0.3514212 total: 732ms remaining: 1.04s
412: learn: 0.3512378 total: 734ms remaining: 1.04s
```

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413: learn: 0.3511649 total: 735ms remaining: 1.04s
414: learn: 0.3508914 total: 736ms remaining: 1.04s
415: learn: 0.3508394 total: 737ms remaining: 1.03s
416: learn: 0.3505374 total: 739ms remaining: 1.03s
417: learn: 0.3503420 total: 740ms remaining: 1.03s
418: learn: 0.3500973 total: 742ms remaining: 1.03s
419: learn: 0.3498944 total: 744ms remaining: 1.03s
420: learn: 0.3496916 total: 746ms remaining: 1.02s
421: learn: 0.3494933 total: 748ms remaining: 1.02s
422: learn: 0.3493074 total: 750ms remaining: 1.02s
423: learn: 0.3490359 total: 751ms remaining: 1.02s
424: learn: 0.3489496 total: 753ms remaining: 1.02s
425: learn: 0.3489421 total: 754ms remaining: 1.02s
426: learn: 0.3488699 total: 756ms remaining: 1.01s
427: learn: 0.3485820 total: 758ms remaining: 1.01s
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431: learn: 0.3480579 total: 765ms remaining: 1s
432: learn: 0.3478709 total: 767ms remaining: 1s
433: learn: 0.3477825 total: 769ms remaining: 1s
434: learn: 0.3476585 total: 771ms remaining: 1s
435: learn: 0.3474682 total: 772ms remaining: 999ms
436: learn: 0.3473385 total: 774ms remaining: 997ms
437: learn: 0.3473239 total: 775ms remaining: 994ms
438: learn: 0.3472466 total: 777ms remaining: 993ms
439: learn: 0.3472052 total: 780ms remaining: 993ms
440: learn: 0.3471044 total: 782ms remaining: 991ms
441: learn: 0.3469972 total: 785ms remaining: 992ms
442: learn: 0.3468882 total: 787ms remaining: 990ms
443: learn: 0.3466249 total: 789ms remaining: 987ms
444: learn: 0.3465673 total: 790ms remaining: 986ms
445: learn: 0.3463329 total: 792ms remaining: 984ms
446: learn: 0.3461596 total: 794ms remaining: 982ms
447: learn: 0.3460779 total: 796ms remaining: 981ms
448: learn: 0.3459330 total: 798ms remaining: 979ms
449: learn: 0.3457695 total: 799ms remaining: 977ms
450: learn: 0.3457182 total: 801ms remaining: 975ms
451: learn: 0.3455968 total: 803ms remaining: 973ms
452: learn: 0.3454901 total: 804ms remaining: 971ms
453: learn: 0.3454659 total: 805ms remaining: 969ms
454: learn: 0.3453901 total: 807ms remaining: 967ms
455: learn: 0.3453230 total: 809ms remaining: 965ms
456: learn: 0.3452365 total: 810ms remaining: 962ms
457: learn: 0.3450779 total: 812ms remaining: 961ms
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459: learn: 0.3447970 total: 815ms remaining: 957ms
460: learn: 0.3446766 total: 817ms remaining: 955ms
461: learn: 0.3444889 total: 819ms remaining: 953ms
462: learn: 0.3444341 total: 820ms remaining: 951ms
463: learn: 0.3443749 total: 822ms remaining: 949ms
464: learn: 0.3442467 total: 824ms remaining: 948ms
465: learn: 0.3441232 total: 827ms remaining: 948ms
466: learn: 0.3440980 total: 828ms remaining: 945ms
467: learn: 0.3440425 total: 830ms remaining: 943ms
468: learn: 0.3439197 total: 831ms remaining: 941ms
469: learn: 0.3438272 total: 833ms remaining: 939ms
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471: learn: 0.3436194 total: 836ms remaining: 935ms
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474: learn: 0.3432851 total: 841ms remaining: 930ms
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476: learn: 0.3430931 total: 844ms remaining: 925ms
477: learn: 0.3429582 total: 846ms remaining: 924ms
478: learn: 0.3428993 total: 847ms remaining: 922ms
479: learn: 0.3427995 total: 849ms remaining: 920ms
480: learn: 0.3427383 total: 851ms remaining: 918ms
481: learn: 0.3426593 total: 852ms remaining: 916ms
482: learn: 0.3425126 total: 854ms remaining: 914ms
483: learn: 0.3424010 total: 856ms remaining: 913ms
484: learn: 0.3423188 total: 858ms remaining: 911ms
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485: learn: 0.3421423 total: 860ms remaining: 910ms
486: learn: 0.3420620 total: 862ms remaining: 908ms
487: learn: 0.3418384 total: 864ms remaining: 906ms
488: learn: 0.3418023 total: 866ms remaining: 905ms
489: learn: 0.3416067 total: 868ms remaining: 903ms
490: learn: 0.3414498 total: 870ms remaining: 902ms
491: learn: 0.3413838 total: 871ms remaining: 900ms
492: learn: 0.3413032 total: 873ms remaining: 898ms
493: learn: 0.3411798 total: 874ms remaining: 896ms
494: learn: 0.3410362 total: 876ms remaining: 894ms
495: learn: 0.3409314 total: 878ms remaining: 892ms
496: learn: 0.3407932 total: 879ms remaining: 890ms
497: learn: 0.3406847 total: 880ms remaining: 888ms
498: learn: 0.3405166 total: 882ms remaining: 885ms
499: learn: 0.3404199 total: 883ms remaining: 883ms
500: learn: 0.3403649 total: 885ms remaining: 881ms
501: learn: 0.3403017 total: 886ms remaining: 879ms
502: learn: 0.3402238 total: 889ms remaining: 878ms
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505: learn: 0.3399386 total: 896ms remaining: 875ms
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509: learn: 0.3395227 total: 905ms remaining: 869ms
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516: learn: 0.3384378 total: 918ms remaining: 857ms
517: learn: 0.3383269 total: 919ms remaining: 855ms
518: learn: 0.3383148 total: 921ms remaining: 854ms
519: learn: 0.3381678 total: 923ms remaining: 852ms
520: learn: 0.3380562 total: 924ms remaining: 850ms
521: learn: 0.3379458 total: 927ms remaining: 848ms
522: learn: 0.3377596 total: 929ms remaining: 847ms
523: learn: 0.3376601 total: 931ms remaining: 845ms
524: learn: 0.3375677 total: 933ms remaining: 844ms
525: learn: 0.3374662 total: 935ms remaining: 843ms
526: learn: 0.3373378 total: 938ms remaining: 842ms
527: learn: 0.3370474 total: 940ms remaining: 840ms
528: learn: 0.3368776 total: 942ms remaining: 839ms
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531: learn: 0.3366038 total: 946ms remaining: 832ms
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533: learn: 0.3365182 total: 950ms remaining: 829ms
534: learn: 0.3364730 total: 951ms remaining: 827ms
535: learn: 0.3363831 total: 954ms remaining: 826ms
536: learn: 0.3362652 total: 958ms remaining: 826ms
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539: learn: 0.3358402 total: 964ms remaining: 821ms
540: learn: 0.3356703 total: 967ms remaining: 820ms
541: learn: 0.3356631 total: 968ms remaining: 818ms
542: learn: 0.3354018 total: 970ms remaining: 816ms
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544: learn: 0.3352364 total: 973ms remaining: 813ms
545: learn: 0.3352238 total: 975ms remaining: 811ms
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547: learn: 0.3350182 total: 979ms remaining: 807ms
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554: learn: 0.3342181 total: 993ms remaining: 796ms
555: learn: 0.3341821 total: 995ms remaining: 795ms
556: learn: 0.3341711 total: 996ms remaining: 792ms
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557: learn: 0.3340903 total: 998ms remaining: 790ms
558: learn: 0.3340577 total: 999ms remaining: 788ms
559: learn: 0.3340359 total: 1s remaining: 787ms
560: learn: 0.3339234 total: 1s remaining: 785ms
561: learn: 0.3338497 total: 1s remaining: 783ms
562: learn: 0.3337454 total: 1.01s remaining: 782ms
563: learn: 0.3336960 total: 1.01s remaining: 780ms
564: learn: 0.3335797 total: 1.01s remaining: 779ms
565: learn: 0.3334576 total: 1.01s remaining: 777ms
566: learn: 0.3333238 total: 1.01s remaining: 775ms
567: learn: 0.3332511 total: 1.02s remaining: 773ms
568: learn: 0.3331688 total: 1.02s remaining: 772ms
569: learn: 0.3331565 total: 1.02s remaining: 770ms
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571: learn: 0.3326897 total: 1.02s remaining: 767ms
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574: learn: 0.3323130 total: 1.03s remaining: 762ms
575: learn: 0.3322801 total: 1.03s remaining: 760ms
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579: learn: 0.3317185 total: 1.04s remaining: 753ms
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581: learn: 0.3314497 total: 1.04s remaining: 750ms
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583: learn: 0.3312110 total: 1.05s remaining: 746ms
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593: learn: 0.3302044 total: 1.06s remaining: 728ms
594: learn: 0.3301403 total: 1.07s remaining: 726ms
595: learn: 0.3300025 total: 1.07s remaining: 724ms
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599: learn: 0.3294816 total: 1.07s remaining: 717ms
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601: learn: 0.3291737 total: 1.08s remaining: 713ms
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603: learn: 0.3288287 total: 1.08s remaining: 709ms
604: learn: 0.3287468 total: 1.08s remaining: 707ms
605: learn: 0.3287157 total: 1.08s remaining: 706ms
606: learn: 0.3286401 total: 1.09s remaining: 704ms
607: learn: 0.3285294 total: 1.09s remaining: 702ms
608: learn: 0.3284630 total: 1.09s remaining: 701ms
609: learn: 0.3283117 total: 1.09s remaining: 700ms
610: learn: 0.3282338 total: 1.1s remaining: 699ms
611: learn: 0.3281056 total: 1.1s remaining: 698ms
612: learn: 0.3279918 total: 1.1s remaining: 697ms
613: learn: 0.3278733 total: 1.11s remaining: 695ms
614: learn: 0.3277865 total: 1.11s remaining: 693ms
615: learn: 0.3275938 total: 1.11s remaining: 692ms
616: learn: 0.3275577 total: 1.11s remaining: 689ms
617: learn: 0.3273492 total: 1.11s remaining: 687ms
618: learn: 0.3272156 total: 1.11s remaining: 685ms
619: learn: 0.3271955 total: 1.11s remaining: 683ms
620: learn: 0.3270382 total: 1.11s remaining: 681ms
621: learn: 0.3269211 total: 1.12s remaining: 679ms
622: learn: 0.3268332 total: 1.12s remaining: 677ms
623: learn: 0.3267367 total: 1.12s remaining: 675ms
624: learn: 0.3266564 total: 1.12s remaining: 673ms
625: learn: 0.3265685 total: 1.12s remaining: 671ms
626: learn: 0.3265236 total: 1.12s remaining: 669ms
627: learn: 0.3264368 total: 1.13s remaining: 667ms
628: learn: 0.3262769 total: 1.13s remaining: 666ms
```

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629: learn: 0.3262479 total: 1.13s remaining: 664ms
630: learn: 0.3261618 total: 1.13s remaining: 662ms
631: learn: 0.3260653 total: 1.13s remaining: 660ms
632: learn: 0.3260636 total: 1.13s remaining: 658ms
633: learn: 0.3259056 total: 1.14s remaining: 656ms
634: learn: 0.3258287 total: 1.14s remaining: 654ms
635: learn: 0.3257468 total: 1.14s remaining: 652ms
636: learn: 0.3255632 total: 1.14s remaining: 649ms
637: learn: 0.3254426 total: 1.14s remaining: 647ms
638: learn: 0.3253998 total: 1.14s remaining: 645ms
639: learn: 0.3253328 total: 1.14s remaining: 643ms
640: learn: 0.3252475 total: 1.15s remaining: 641ms
641: learn: 0.3250923 total: 1.15s remaining: 640ms
642: learn: 0.3249952 total: 1.15s remaining: 638ms
643: learn: 0.3248767 total: 1.15s remaining: 636ms
644: learn: 0.3247499 total: 1.15s remaining: 634ms
645: learn: 0.3246066 total: 1.15s remaining: 631ms
646: learn: 0.3245252 total: 1.15s remaining: 629ms
647: learn: 0.3244989 total: 1.16s remaining: 628ms
648: learn: 0.3242636 total: 1.16s remaining: 626ms
649: learn: 0.3241990 total: 1.16s remaining: 624ms
650: learn: 0.3240237 total: 1.16s remaining: 622ms
651: learn: 0.3239323 total: 1.16s remaining: 620ms
652: learn: 0.3238599 total: 1.16s remaining: 618ms
653: learn: 0.3237866 total: 1.17s remaining: 616ms
654: learn: 0.3237701 total: 1.17s remaining: 614ms
655: learn: 0.3236403 total: 1.17s remaining: 612ms
656: learn: 0.3234456 total: 1.17s remaining: 611ms
657: learn: 0.3233001 total: 1.17s remaining: 609ms
658: learn: 0.3231638 total: 1.17s remaining: 607ms
659: learn: 0.3231403 total: 1.17s remaining: 605ms
660: learn: 0.3229550 total: 1.18s remaining: 603ms
661: learn: 0.3229541 total: 1.18s remaining: 601ms
662: learn: 0.3228965 total: 1.18s remaining: 599ms
663: learn: 0.3228394 total: 1.18s remaining: 598ms
664: learn: 0.3226641 total: 1.18s remaining: 596ms
665: learn: 0.3226096 total: 1.18s remaining: 594ms
666: learn: 0.3223931 total: 1.19s remaining: 592ms
667: learn: 0.3223782 total: 1.19s remaining: 590ms
668: learn: 0.3222907 total: 1.19s remaining: 589ms
669: learn: 0.3221714 total: 1.19s remaining: 587ms
670: learn: 0.3220912 total: 1.19s remaining: 586ms
671: learn: 0.3219686 total: 1.2s remaining: 584ms
672: learn: 0.3218290 total: 1.2s remaining: 582ms
673: learn: 0.3216139 total: 1.2s remaining: 580ms
674: learn: 0.3215510 total: 1.2s remaining: 579ms
675: learn: 0.3214553 total: 1.2s remaining: 577ms
676: learn: 0.3211906 total: 1.21s remaining: 575ms
677: learn: 0.3211682 total: 1.21s remaining: 573ms
678: learn: 0.3210291 total: 1.21s remaining: 571ms
679: learn: 0.3209537 total: 1.21s remaining: 570ms
680: learn: 0.3207326 total: 1.21s remaining: 568ms
681: learn: 0.3204941 total: 1.21s remaining: 566ms
682: learn: 0.3203576 total: 1.22s remaining: 564ms
683: learn: 0.3202743 total: 1.22s remaining: 562ms
684: learn: 0.3201268 total: 1.22s remaining: 560ms
685: learn: 0.3200036 total: 1.22s remaining: 559ms
686: learn: 0.3199137 total: 1.22s remaining: 557ms
687: learn: 0.3197293 total: 1.22s remaining: 555ms
688: learn: 0.3196293 total: 1.22s remaining: 553ms
689: learn: 0.3194205 total: 1.23s remaining: 551ms
690: learn: 0.3193380 total: 1.23s remaining: 549ms
691: learn: 0.3191969 total: 1.23s remaining: 547ms
692: learn: 0.3191505 total: 1.23s remaining: 545ms
693: learn: 0.3191082 total: 1.23s remaining: 543ms
694: learn: 0.3190510 total: 1.23s remaining: 541ms
695: learn: 0.3189908 total: 1.23s remaining: 539ms
696: learn: 0.3188544 total: 1.24s remaining: 537ms
697: learn: 0.3185843 total: 1.24s remaining: 535ms
698: learn: 0.3185394 total: 1.24s remaining: 533ms
699: learn: 0.3184119 total: 1.24s remaining: 532ms
700: learn: 0.3183084 total: 1.24s remaining: 530ms
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701: learn: 0.3182263 total: 1.24s remaining: 528ms
702: learn: 0.3181431 total: 1.25s remaining: 526ms
703: learn: 0.3178347 total: 1.25s remaining: 524ms
704: learn: 0.3176305 total: 1.25s remaining: 522ms
705: learn: 0.3175104 total: 1.25s remaining: 521ms
706: learn: 0.3174093 total: 1.25s remaining: 519ms
707: learn: 0.3173526 total: 1.25s remaining: 517ms
708: learn: 0.3172524 total: 1.25s remaining: 515ms
709: learn: 0.3171524 total: 1.25s remaining: 513ms
710: learn: 0.3169930 total: 1.26s remaining: 511ms
711: learn: 0.3168683 total: 1.26s remaining: 509ms
712: learn: 0.3168436 total: 1.26s remaining: 507ms
713: learn: 0.3167825 total: 1.26s remaining: 505ms
714: learn: 0.3166521 total: 1.26s remaining: 503ms
715: learn: 0.3165870 total: 1.26s remaining: 501ms
716: learn: 0.3164948 total: 1.26s remaining: 499ms
717: learn: 0.3164659 total: 1.27s remaining: 497ms
718: learn: 0.3162061 total: 1.27s remaining: 495ms
719: learn: 0.3161612 total: 1.27s remaining: 493ms
720: learn: 0.3161148 total: 1.27s remaining: 491ms
721: learn: 0.3161110 total: 1.27s remaining: 489ms
722: learn: 0.3159780 total: 1.27s remaining: 487ms
723: learn: 0.3158731 total: 1.27s remaining: 485ms
724: learn: 0.3157965 total: 1.27s remaining: 484ms
725: learn: 0.3157489 total: 1.27s remaining: 482ms
726: learn: 0.3156210 total: 1.28s remaining: 480ms
727: learn: 0.3155897 total: 1.28s remaining: 478ms
728: learn: 0.3155084 total: 1.28s remaining: 476ms
729: learn: 0.3154429 total: 1.28s remaining: 474ms
730: learn: 0.3152972 total: 1.28s remaining: 472ms
731: learn: 0.3152298 total: 1.28s remaining: 470ms
732: learn: 0.3151912 total: 1.29s remaining: 469ms
733: learn: 0.3151563 total: 1.29s remaining: 467ms
734: learn: 0.3150504 total: 1.29s remaining: 465ms
735: learn: 0.3150387 total: 1.29s remaining: 463ms
736: learn: 0.3149649 total: 1.29s remaining: 461ms
737: learn: 0.3148891 total: 1.29s remaining: 460ms
738: learn: 0.3147029 total: 1.3s remaining: 458ms
739: learn: 0.3145414 total: 1.3s remaining: 456ms
740: learn: 0.3145180 total: 1.3s remaining: 454ms
741: learn: 0.3144166 total: 1.3s remaining: 453ms
742: learn: 0.3143509 total: 1.3s remaining: 451ms
743: learn: 0.3141925 total: 1.31s remaining: 450ms
744: learn: 0.3139458 total: 1.31s remaining: 448ms
745: learn: 0.3136576 total: 1.31s remaining: 447ms
746: learn: 0.3135381 total: 1.31s remaining: 445ms
747: learn: 0.3135139 total: 1.31s remaining: 443ms
748: learn: 0.3134422 total: 1.31s remaining: 441ms
749: learn: 0.3134285 total: 1.32s remaining: 439ms
750: learn: 0.3133448 total: 1.32s remaining: 437ms
751: learn: 0.3132919 total: 1.32s remaining: 435ms
752: learn: 0.3131265 total: 1.32s remaining: 433ms
753: learn: 0.3129221 total: 1.32s remaining: 431ms
754: learn: 0.3128638 total: 1.32s remaining: 430ms
755: learn: 0.3127639 total: 1.32s remaining: 428ms
756: learn: 0.3127323 total: 1.33s remaining: 426ms
757: learn: 0.3126394 total: 1.33s remaining: 424ms
758: learn: 0.3124887 total: 1.33s remaining: 423ms
759: learn: 0.3124472 total: 1.33s remaining: 421ms
760: learn: 0.3123230 total: 1.33s remaining: 419ms
761: learn: 0.3121757 total: 1.33s remaining: 417ms
762: learn: 0.3120161 total: 1.34s remaining: 415ms
763: learn: 0.3118238 total: 1.34s remaining: 413ms
764: learn: 0.3117304 total: 1.34s remaining: 412ms
765: learn: 0.3116159 total: 1.34s remaining: 410ms
766: learn: 0.3115844 total: 1.34s remaining: 408ms
767: learn: 0.3114792 total: 1.34s remaining: 406ms
768: learn: 0.3113513 total: 1.35s remaining: 405ms
769: learn: 0.3113203 total: 1.35s remaining: 403ms
770: learn: 0.3112190 total: 1.35s remaining: 401ms
771: learn: 0.3111202 total: 1.35s remaining: 399ms
772: learn: 0.3110161 total: 1.35s remaining: 397ms
```

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773: learn: 0.3108803 total: 1.35s remaining: 396ms
774: learn: 0.3108224 total: 1.36s remaining: 394ms
775: learn: 0.3108015 total: 1.36s remaining: 392ms
776: learn: 0.3106800 total: 1.36s remaining: 390ms
777: learn: 0.3106416 total: 1.36s remaining: 388ms
778: learn: 0.3105488 total: 1.36s remaining: 386ms
779: learn: 0.3103960 total: 1.36s remaining: 384ms
780: learn: 0.3102652 total: 1.36s remaining: 383ms
781: learn: 0.3101236 total: 1.36s remaining: 381ms
782: learn: 0.3100674 total: 1.37s remaining: 379ms
783: learn: 0.3099543 total: 1.37s remaining: 377ms
784: learn: 0.3097079 total: 1.37s remaining: 375ms
785: learn: 0.3096021 total: 1.37s remaining: 373ms
786: learn: 0.3095368 total: 1.37s remaining: 371ms
787: learn: 0.3094607 total: 1.37s remaining: 370ms
788: learn: 0.3093854 total: 1.37s remaining: 368ms
789: learn: 0.3090681 total: 1.38s remaining: 366ms
790: learn: 0.3090528 total: 1.38s remaining: 364ms
791: learn: 0.3089762 total: 1.38s remaining: 362ms
792: learn: 0.3089329 total: 1.38s remaining: 360ms
793: learn: 0.3087916 total: 1.38s remaining: 358ms
794: learn: 0.3086514 total: 1.38s remaining: 357ms
795: learn: 0.3085848 total: 1.38s remaining: 355ms
796: learn: 0.3084845 total: 1.39s remaining: 353ms
797: learn: 0.3083330 total: 1.39s remaining: 351ms
798: learn: 0.3082572 total: 1.39s remaining: 349ms
799: learn: 0.3081524 total: 1.39s remaining: 347ms
800: learn: 0.3081179 total: 1.39s remaining: 346ms
801: learn: 0.3080303 total: 1.39s remaining: 344ms
802: learn: 0.3079297 total: 1.39s remaining: 342ms
803: learn: 0.3078098 total: 1.4s remaining: 340ms
804: learn: 0.3077316 total: 1.4s remaining: 338ms
805: learn: 0.3075961 total: 1.4s remaining: 337ms
806: learn: 0.3075363 total: 1.4s remaining: 335ms
807: learn: 0.3074709 total: 1.4s remaining: 333ms
808: learn: 0.3073701 total: 1.4s remaining: 331ms
809: learn: 0.3072596 total: 1.41s remaining: 330ms
810: learn: 0.3071140 total: 1.41s remaining: 328ms
811: learn: 0.3070206 total: 1.41s remaining: 326ms
812: learn: 0.3069533 total: 1.41s remaining: 325ms
813: learn: 0.3069061 total: 1.41s remaining: 323ms
814: learn: 0.3066792 total: 1.41s remaining: 321ms
815: learn: 0.3066173 total: 1.42s remaining: 319ms
816: learn: 0.3064994 total: 1.42s remaining: 317ms
817: learn: 0.3063731 total: 1.42s remaining: 316ms
818: learn: 0.3062709 total: 1.42s remaining: 314ms
819: learn: 0.3062283 total: 1.42s remaining: 312ms
820: learn: 0.3061004 total: 1.42s remaining: 310ms
821: learn: 0.3059504 total: 1.42s remaining: 309ms
822: learn: 0.3058655 total: 1.43s remaining: 307ms
823: learn: 0.3057468 total: 1.43s remaining: 305ms
824: learn: 0.3057077 total: 1.43s remaining: 303ms
825: learn: 0.3054728 total: 1.43s remaining: 302ms
826: learn: 0.3053824 total: 1.43s remaining: 300ms
827: learn: 0.3052298 total: 1.44s remaining: 298ms
828: learn: 0.3051676 total: 1.44s remaining: 296ms
829: learn: 0.3050708 total: 1.44s remaining: 295ms
830: learn: 0.3050124 total: 1.44s remaining: 293ms
831: learn: 0.3049470 total: 1.44s remaining: 291ms
832: learn: 0.3048548 total: 1.44s remaining: 289ms
833: learn: 0.3046866 total: 1.44s remaining: 288ms
834: learn: 0.3043864 total: 1.45s remaining: 286ms
835: learn: 0.3043374 total: 1.45s remaining: 284ms
836: learn: 0.3042647 total: 1.45s remaining: 283ms
837: learn: 0.3041923 total: 1.45s remaining: 281ms
838: learn: 0.3040859 total: 1.45s remaining: 279ms
839: learn: 0.3040093 total: 1.46s remaining: 277ms
840: learn: 0.3039571 total: 1.46s remaining: 275ms
841: learn: 0.3038518 total: 1.46s remaining: 274ms
842: learn: 0.3036536 total: 1.46s remaining: 272ms
843: learn: 0.3035461 total: 1.46s remaining: 270ms
844: learn: 0.3034584 total: 1.46s remaining: 268ms
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845: learn: 0.3032920 total: 1.46s remaining: 267ms
846: learn: 0.3032473 total: 1.47s remaining: 265ms
847: learn: 0.3031915 total: 1.47s remaining: 263ms
848: learn: 0.3031216 total: 1.47s remaining: 261ms
849: learn: 0.3030018 total: 1.47s remaining: 260ms
850: learn: 0.3029578 total: 1.47s remaining: 258ms
851: learn: 0.3028940 total: 1.47s remaining: 256ms
852: learn: 0.3027359 total: 1.48s remaining: 255ms
853: learn: 0.3026847 total: 1.48s remaining: 253ms
854: learn: 0.3026670 total: 1.48s remaining: 251ms
855: learn: 0.3026011 total: 1.48s remaining: 250ms
856: learn: 0.3024937 total: 1.49s remaining: 248ms
857: learn: 0.3022801 total: 1.49s remaining: 246ms
858: learn: 0.3022660 total: 1.49s remaining: 245ms
859: learn: 0.3021795 total: 1.49s remaining: 243ms
860: learn: 0.3020699 total: 1.49s remaining: 241ms
861: learn: 0.3019965 total: 1.5s remaining: 239ms
862: learn: 0.3019569 total: 1.5s remaining: 238ms
863: learn: 0.3017956 total: 1.5s remaining: 236ms
864: learn: 0.3016284 total: 1.5s remaining: 234ms
865: learn: 0.3014665 total: 1.5s remaining: 232ms
866: learn: 0.3014160 total: 1.5s remaining: 230ms
867: learn: 0.3013415 total: 1.5s remaining: 229ms
868: learn: 0.3011524 total: 1.5s remaining: 227ms
869: learn: 0.3011115 total: 1.51s remaining: 225ms
870: learn: 0.3010536 total: 1.51s remaining: 223ms
871: learn: 0.3009470 total: 1.51s remaining: 221ms
872: learn: 0.3008328 total: 1.51s remaining: 220ms
873: learn: 0.3008027 total: 1.51s remaining: 218ms
874: learn: 0.3007768 total: 1.51s remaining: 216ms
875: learn: 0.3006859 total: 1.51s remaining: 214ms
876: learn: 0.3006201 total: 1.52s remaining: 213ms
877: learn: 0.3005102 total: 1.52s remaining: 211ms
878: learn: 0.3004716 total: 1.52s remaining: 209ms
879: learn: 0.3004339 total: 1.52s remaining: 207ms
880: learn: 0.3002825 total: 1.52s remaining: 206ms
881: learn: 0.3002538 total: 1.52s remaining: 204ms
882: learn: 0.3000661 total: 1.53s remaining: 202ms
883: learn: 0.2999726 total: 1.53s remaining: 200ms
884: learn: 0.2999029 total: 1.53s remaining: 199ms
885: learn: 0.2998772 total: 1.53s remaining: 197ms
886: learn: 0.2998168 total: 1.53s remaining: 195ms
887: learn: 0.2997572 total: 1.53s remaining: 193ms
888: learn: 0.2996720 total: 1.53s remaining: 192ms
889: learn: 0.2996076 total: 1.54s remaining: 190ms
890: learn: 0.2993709 total: 1.54s remaining: 188ms
891: learn: 0.2993170 total: 1.54s remaining: 186ms
892: learn: 0.2992565 total: 1.54s remaining: 185ms
893: learn: 0.2991986 total: 1.54s remaining: 183ms
894: learn: 0.2991528 total: 1.54s remaining: 181ms
895: learn: 0.2991279 total: 1.55s remaining: 180ms
896: learn: 0.2989105 total: 1.55s remaining: 178ms
897: learn: 0.2988214 total: 1.55s remaining: 176ms
898: learn: 0.2987703 total: 1.55s remaining: 174ms
899: learn: 0.2986409 total: 1.55s remaining: 173ms
900: learn: 0.2986032 total: 1.55s remaining: 171ms
901: learn: 0.2985121 total: 1.55s remaining: 169ms
902: learn: 0.2984501 total: 1.56s remaining: 167ms
903: learn: 0.2982830 total: 1.56s remaining: 166ms
904: learn: 0.2981630 total: 1.56s remaining: 164ms
905: learn: 0.2981211 total: 1.56s remaining: 162ms
906: learn: 0.2981006 total: 1.56s remaining: 160ms
907: learn: 0.2980203 total: 1.56s remaining: 158ms
908: learn: 0.2979278 total: 1.56s remaining: 157ms
909: learn: 0.2977301 total: 1.57s remaining: 155ms
910: learn: 0.2976312 total: 1.57s remaining: 153ms
911: learn: 0.2975637 total: 1.57s remaining: 151ms
912: learn: 0.2974775 total: 1.57s remaining: 150ms
913: learn: 0.2972803 total: 1.57s remaining: 148ms
914: learn: 0.2971865 total: 1.57s remaining: 146ms
915: learn: 0.2969875 total: 1.57s remaining: 144ms
916: learn: 0.2968984 total: 1.58s remaining: 143ms
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917: learn: 0.2968427 total: 1.58s remaining: 141ms
918: learn: 0.2967389 total: 1.58s remaining: 139ms
919: learn: 0.2964445 total: 1.58s remaining: 138ms
920: learn: 0.2963963 total: 1.58s remaining: 136ms
921: learn: 0.2963377 total: 1.58s remaining: 134ms
922: learn: 0.2962538 total: 1.59s remaining: 132ms
923: learn: 0.2961920 total: 1.59s remaining: 131ms
924: learn: 0.2961188 total: 1.59s remaining: 129ms
925: learn: 0.2960290 total: 1.59s remaining: 127ms
926: learn: 0.2959531 total: 1.59s remaining: 126ms
927: learn: 0.2958759 total: 1.6s remaining: 124ms
928: learn: 0.2957558 total: 1.6s remaining: 122ms
929: learn: 0.2956741 total: 1.6s remaining: 120ms
930: learn: 0.2956053 total: 1.6s remaining: 119ms
931: learn: 0.2955360 total: 1.6s remaining: 117ms
932: learn: 0.2955289 total: 1.6s remaining: 115ms
933: learn: 0.2955121 total: 1.6s remaining: 113ms
934: learn: 0.2954519 total: 1.61s remaining: 112ms
935: learn: 0.2953696 total: 1.61s remaining: 110ms
936: learn: 0.2953022 total: 1.61s remaining: 108ms
937: learn: 0.2952429 total: 1.61s remaining: 106ms
938: learn: 0.2950549 total: 1.61s remaining: 105ms
939: learn: 0.2950007 total: 1.61s remaining: 103ms
940: learn: 0.2948184 total: 1.61s remaining: 101ms
941: learn: 0.2947930 total: 1.62s remaining: 99.6ms
942: learn: 0.2947492 total: 1.62s remaining: 97.8ms
943: learn: 0.2946450 total: 1.62s remaining: 96.1ms
944: learn: 0.2945779 total: 1.62s remaining: 94.4ms
945: learn: 0.2944218 total: 1.62s remaining: 92.7ms
946: learn: 0.2943149 total: 1.63s remaining: 90.9ms
947: learn: 0.2940534 total: 1.63s remaining: 89.2ms
948: learn: 0.2938724 total: 1.63s remaining: 87.5ms
949: learn: 0.2938339 total: 1.63s remaining: 85.8ms
950: learn: 0.2937681 total: 1.63s remaining: 84.1ms
951: learn: 0.2936823 total: 1.63s remaining: 82.4ms
952: learn: 0.2936335 total: 1.63s remaining: 80.6ms
953: learn: 0.2935825 total: 1.64s remaining: 78.9ms
954: learn: 0.2935527 total: 1.64s remaining: 77.2ms
955: learn: 0.2935085 total: 1.64s remaining: 75.5ms
956: learn: 0.2934471 total: 1.64s remaining: 73.7ms
957: learn: 0.2933675 total: 1.64s remaining: 72ms
958: learn: 0.2932734 total: 1.64s remaining: 70.3ms
959: learn: 0.2930865 total: 1.65s remaining: 68.6ms
960: learn: 0.2929878 total: 1.65s remaining: 66.9ms
961: learn: 0.2929313 total: 1.65s remaining: 65.1ms
962: learn: 0.2928170 total: 1.65s remaining: 63.4ms
963: learn: 0.2927523 total: 1.65s remaining: 61.7ms
964: learn: 0.2927291 total: 1.65s remaining: 60ms
965: learn: 0.2925713 total: 1.65s remaining: 58.2ms
966: learn: 0.2924829 total: 1.66s remaining: 56.5ms
967: learn: 0.2924096 total: 1.66s remaining: 54.8ms
968: learn: 0.2923130 total: 1.66s remaining: 53.1ms
969: learn: 0.2922492 total: 1.66s remaining: 51.4ms
970: learn: 0.2921848 total: 1.66s remaining: 49.7ms
971: learn: 0.2921189 total: 1.67s remaining: 48ms
972: learn: 0.2921072 total: 1.67s remaining: 46.2ms
973: learn: 0.2919937 total: 1.67s remaining: 44.5ms
974: learn: 0.2919401 total: 1.67s remaining: 42.8ms
975: learn: 0.2918964 total: 1.67s remaining: 41.1ms
976: learn: 0.2916887 total: 1.67s remaining: 39.4ms
977: learn: 0.2916134 total: 1.68s remaining: 37.7ms
978: learn: 0.2915448 total: 1.68s remaining: 36ms
979: learn: 0.2913354 total: 1.68s remaining: 34.3ms
980: learn: 0.2912797 total: 1.68s remaining: 32.6ms
981: learn: 0.2912553 total: 1.68s remaining: 30.9ms
982: learn: 0.2912009 total: 1.69s remaining: 29.2ms
983: learn: 0.2911491 total: 1.69s remaining: 27.4ms
984: learn: 0.2911068 total: 1.69s remaining: 25.7ms
985: learn: 0.2908804 total: 1.69s remaining: 24ms
986: learn: 0.2907725 total: 1.69s remaining: 22.3ms
987: learn: 0.2907448 total: 1.69s remaining: 20.6ms
988: learn: 0.2906685 total: 1.69s remaining: 18.8ms
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989: learn: 0.2905342 total: 1.7s remaining: 17.1ms
990: learn: 0.2905012 total: 1.7s remaining: 15.4ms
991: learn: 0.2903383 total: 1.7s remaining: 13.7ms
992: learn: 0.2902995 total: 1.7s remaining: 12ms
993: learn: 0.2900612 total: 1.7s remaining: 10.3ms
994: learn: 0.2899350 total: 1.7s remaining: 8.56ms
995: learn: 0.2897846 total: 1.71s remaining: 6.85ms
996: learn: 0.2897066 total: 1.71s remaining: 5.14ms
997: learn: 0.2896627 total: 1.71s remaining: 3.42ms
998: learn: 0.2896037 total: 1.71s remaining: 1.71ms
999: learn: 0.2895684 total: 1.71s remaining: 0us
Learning rate set to 0.009376
0: learn: 0.6867273 total: 1.34ms remaining: 1.34s
1: learn: 0.6831607 total: 2.29ms remaining: 1.14s
2: learn: 0.6776509 total: 3.99ms remaining: 1.33s
3: learn: 0.6720005 total: 5.49ms remaining: 1.37s
4: learn: 0.6666488 total: 6.72ms remaining: 1.34s
5: learn: 0.6614364 total: 7.96ms remaining: 1.32s
6: learn: 0.6570490 total: 8.97ms remaining: 1.27s
7: learn: 0.6516055 total: 10.2ms remaining: 1.27s
8: learn: 0.6464521 total: 11.2ms remaining: 1.24s
9: learn: 0.6408601 total: 12.6ms remaining: 1.25s
10: learn: 0.6354099 total: 13.8ms remaining: 1.24s
11: learn: 0.6304209 total: 15.3ms remaining: 1.26s
12: learn: 0.6250673 total: 16.6ms remaining: 1.26s
13: learn: 0.6209222 total: 17.6ms remaining: 1.24s
14: learn: 0.6170213 total: 18.4ms remaining: 1.21s
15: learn: 0.6120645 total: 19.4ms remaining: 1.19s
16: learn: 0.6076892 total: 20.3ms remaining: 1.17s
17: learn: 0.6037319 total: 21ms remaining: 1.15s
18: learn: 0.5996681 total: 21.9ms remaining: 1.13s
19: learn: 0.5951683 total: 23ms remaining: 1.13s
20: learn: 0.5912322 total: 23.9ms remaining: 1.11s
21: learn: 0.5871903 total: 25.2ms remaining: 1.12s
22: learn: 0.5832128 total: 26.1ms remaining: 1.11s
23: learn: 0.5792785 total: 27.4ms remaining: 1.11s
24: learn: 0.5753350 total: 28.8ms remaining: 1.12s
25: learn: 0.5714977 total: 30.2ms remaining: 1.13s
26: learn: 0.5678686 total: 31.5ms remaining: 1.13s
27: learn: 0.5641819 total: 32.9ms remaining: 1.14s
28: learn: 0.5607179 total: 34.3ms remaining: 1.15s
29: learn: 0.5574011 total: 35.4ms remaining: 1.14s
30: learn: 0.5540094 total: 36.5ms remaining: 1.14s
31: learn: 0.5512606 total: 37.3ms remaining: 1.13s
32: learn: 0.5482579 total: 38.4ms remaining: 1.12s
33: learn: 0.5455683 total: 39.8ms remaining: 1.13s
34: learn: 0.5426977 total: 41.2ms remaining: 1.14s
35: learn: 0.5401083 total: 42.4ms remaining: 1.13s
36: learn: 0.5377899 total: 43.4ms remaining: 1.13s
37: learn: 0.5353867 total: 44.2ms remaining: 1.12s
38: learn: 0.5338911 total: 44.9ms remaining: 1.11s
39: learn: 0.5310218 total: 46.2ms remaining: 1.11s
40: learn: 0.5281273 total: 47.8ms remaining: 1.12s
41: learn: 0.5258809 total: 48.8ms remaining: 1.11s
42: learn: 0.5236851 total: 50.2ms remaining: 1.12s
43: learn: 0.5213056 total: 51.8ms remaining: 1.12s
44: learn: 0.5186345 total: 53.4ms remaining: 1.13s
45: learn: 0.5173823 total: 54.1ms remaining: 1.12s
46: learn: 0.5150739 total: 55.2ms remaining: 1.12s
47: learn: 0.5131264 total: 56.5ms remaining: 1.12s
48: learn: 0.5119543 total: 57.1ms remaining: 1.11s
49: learn: 0.5093334 total: 58.3ms remaining: 1.11s
50: learn: 0.5074141 total: 59.4ms remaining: 1.1s
51: learn: 0.5062706 total: 60.2ms remaining: 1.1s
52: learn: 0.5051434 total: 60.9ms remaining: 1.09s
53: learn: 0.5031665 total: 62.3ms remaining: 1.09s
54: learn: 0.5007761 total: 63.5ms remaining: 1.09s
55: learn: 0.4988636 total: 64.6ms remaining: 1.09s
56: learn: 0.4965859 total: 65.7ms remaining: 1.09s
57: learn: 0.4946653 total: 66.8ms remaining: 1.08s
58: learn: 0.4925893 total: 67.9ms remaining: 1.08s
59: learn: 0.4907572 total: 69ms remaining: 1.08s
```

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60: learn: 0.4887877 total: 70.2ms remaining: 1.08s
61: learn: 0.4874633 total: 72ms remaining: 1.09s
62: learn: 0.4857828 total: 74.8ms remaining: 1.11s
63: learn: 0.4843182 total: 75.9ms remaining: 1.11s
64: learn: 0.4822887 total: 77.9ms remaining: 1.12s
65: learn: 0.4808239 total: 79.7ms remaining: 1.13s
66: learn: 0.4788426 total: 81.2ms remaining: 1.13s
67: learn: 0.4772451 total: 82.7ms remaining: 1.13s
68: learn: 0.4754822 total: 84.1ms remaining: 1.14s
69: learn: 0.4738282 total: 85.2ms remaining: 1.13s
70: learn: 0.4722227 total: 86.3ms remaining: 1.13s
71: learn: 0.4704893 total: 87.6ms remaining: 1.13s
72: learn: 0.4689724 total: 88.7ms remaining: 1.13s
73: learn: 0.4672682 total: 90ms remaining: 1.13s
74: learn: 0.4657046 total: 91.3ms remaining: 1.13s
75: learn: 0.4640541 total: 92.2ms remaining: 1.12s
76: learn: 0.4626397 total: 93.3ms remaining: 1.12s
77: learn: 0.4613849 total: 95ms remaining: 1.12s
78: learn: 0.4598092 total: 96.2ms remaining: 1.12s
79: learn: 0.4582167 total: 97.6ms remaining: 1.12s
80: learn: 0.4570493 total: 98.9ms remaining: 1.12s
81: learn: 0.4561828 total: 99.9ms remaining: 1.12s
82: learn: 0.4547416 total: 101ms remaining: 1.12s
83: learn: 0.4536474 total: 103ms remaining: 1.12s
84: learn: 0.4522999 total: 104ms remaining: 1.12s
85: learn: 0.4509244 total: 106ms remaining: 1.12s
86: learn: 0.4498336 total: 107ms remaining: 1.12s
87: learn: 0.4489937 total: 108ms remaining: 1.12s
88: learn: 0.4478380 total: 109ms remaining: 1.11s
89: learn: 0.4467857 total: 110ms remaining: 1.11s
90: learn: 0.4455698 total: 111ms remaining: 1.11s
91: learn: 0.4448185 total: 113ms remaining: 1.11s
92: learn: 0.4441163 total: 113ms remaining: 1.1s
93: learn: 0.4429397 total: 115ms remaining: 1.1s
94: learn: 0.4420224 total: 116ms remaining: 1.1s
95: learn: 0.4409027 total: 117ms remaining: 1.1s
96: learn: 0.4400744 total: 118ms remaining: 1.1s
97: learn: 0.4390047 total: 120ms remaining: 1.1s
98: learn: 0.4381167 total: 121ms remaining: 1.1s
99: learn: 0.4368622 total: 122ms remaining: 1.1s
100: learn: 0.4358384 total: 124ms remaining: 1.1s
101: learn: 0.4348579 total: 125ms remaining: 1.1s
102: learn: 0.4343698 total: 127ms remaining: 1.1s
103: learn: 0.4333481 total: 128ms remaining: 1.11s
104: learn: 0.4323093 total: 130ms remaining: 1.1s
105: learn: 0.4311498 total: 131ms remaining: 1.11s
106: learn: 0.4304088 total: 133ms remaining: 1.11s
107: learn: 0.4292266 total: 134ms remaining: 1.11s
108: learn: 0.4280800 total: 135ms remaining: 1.1s
109: learn: 0.4273556 total: 136ms remaining: 1.1s
110: learn: 0.4264356 total: 137ms remaining: 1.1s
111: learn: 0.4255617 total: 138ms remaining: 1.1s
112: learn: 0.4254396 total: 139ms remaining: 1.09s
113: learn: 0.4247416 total: 140ms remaining: 1.09s
114: learn: 0.4238495 total: 141ms remaining: 1.09s
115: learn: 0.4228009 total: 142ms remaining: 1.08s
116: learn: 0.4223305 total: 143ms remaining: 1.08s
117: learn: 0.4216642 total: 144ms remaining: 1.08s
118: learn: 0.4207551 total: 145ms remaining: 1.07s
119: learn: 0.4198831 total: 146ms remaining: 1.07s
120: learn: 0.4191225 total: 147ms remaining: 1.07s
121: learn: 0.4183198 total: 149ms remaining: 1.07s
122: learn: 0.4174930 total: 150ms remaining: 1.07s
123: learn: 0.4167594 total: 151ms remaining: 1.06s
124: learn: 0.4162450 total: 152ms remaining: 1.06s
125: learn: 0.4158028 total: 153ms remaining: 1.06s
126: learn: 0.4150686 total: 155ms remaining: 1.06s
127: learn: 0.4143822 total: 156ms remaining: 1.06s
128: learn: 0.4137923 total: 158ms remaining: 1.07s
129: learn: 0.4131747 total: 160ms remaining: 1.07s
130: learn: 0.4127841 total: 160ms remaining: 1.06s
131: learn: 0.4122544 total: 162ms remaining: 1.06s
```

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132: learn: 0.4115973 total: 164ms remaining: 1.07s
133: learn: 0.4109684 total: 166ms remaining: 1.07s
134: learn: 0.4106262 total: 168ms remaining: 1.07s
135: learn: 0.4103035 total: 169ms remaining: 1.07s
136: learn: 0.4102364 total: 170ms remaining: 1.07s
137: learn: 0.4096152 total: 171ms remaining: 1.07s
138: learn: 0.4091130 total: 172ms remaining: 1.07s
139: learn: 0.4084368 total: 174ms remaining: 1.07s
140: learn: 0.4079598 total: 175ms remaining: 1.06s
141: learn: 0.4073216 total: 176ms remaining: 1.06s
142: learn: 0.4068672 total: 177ms remaining: 1.06s
143: learn: 0.4062055 total: 179ms remaining: 1.06s
144: learn: 0.4060641 total: 180ms remaining: 1.06s
145: learn: 0.4054245 total: 181ms remaining: 1.06s
146: learn: 0.4050273 total: 182ms remaining: 1.05s
147: learn: 0.4047330 total: 183ms remaining: 1.05s
148: learn: 0.4042261 total: 184ms remaining: 1.05s
149: learn: 0.4037128 total: 185ms remaining: 1.05s
150: learn: 0.4033535 total: 187ms remaining: 1.05s
151: learn: 0.4027556 total: 189ms remaining: 1.05s
152: learn: 0.4024371 total: 190ms remaining: 1.05s
153: learn: 0.4021623 total: 192ms remaining: 1.05s
154: learn: 0.4015630 total: 194ms remaining: 1.06s
155: learn: 0.4012285 total: 196ms remaining: 1.06s
156: learn: 0.4007603 total: 197ms remaining: 1.06s
157: learn: 0.4001601 total: 198ms remaining: 1.05s
158: learn: 0.3998467 total: 199ms remaining: 1.05s
159: learn: 0.3992667 total: 201ms remaining: 1.05s
160: learn: 0.3990810 total: 202ms remaining: 1.05s
161: learn: 0.3985132 total: 203ms remaining: 1.05s
162: learn: 0.3980943 total: 205ms remaining: 1.05s
163: learn: 0.3979087 total: 206ms remaining: 1.05s
164: learn: 0.3973145 total: 208ms remaining: 1.05s
165: learn: 0.3969341 total: 209ms remaining: 1.05s
166: learn: 0.3965164 total: 211ms remaining: 1.05s
167: learn: 0.3962128 total: 212ms remaining: 1.05s
168: learn: 0.3958598 total: 214ms remaining: 1.05s
169: learn: 0.3954992 total: 215ms remaining: 1.05s
170: learn: 0.3950412 total: 217ms remaining: 1.05s
171: learn: 0.3944689 total: 218ms remaining: 1.05s
172: learn: 0.3939953 total: 219ms remaining: 1.05s
173: learn: 0.3937855 total: 221ms remaining: 1.05s
174: learn: 0.3934216 total: 222ms remaining: 1.04s
175: learn: 0.3929493 total: 223ms remaining: 1.04s
176: learn: 0.3927175 total: 224ms remaining: 1.04s
177: learn: 0.3926886 total: 225ms remaining: 1.04s
178: learn: 0.3924050 total: 226ms remaining: 1.04s
179: learn: 0.3921659 total: 228ms remaining: 1.04s
180: learn: 0.3916270 total: 229ms remaining: 1.04s
181: learn: 0.3912124 total: 230ms remaining: 1.03s
182: learn: 0.3908805 total: 232ms remaining: 1.03s
183: learn: 0.3904426 total: 234ms remaining: 1.04s
184: learn: 0.3901756 total: 236ms remaining: 1.04s
185: learn: 0.3897534 total: 237ms remaining: 1.04s
186: learn: 0.3895643 total: 239ms remaining: 1.04s
187: learn: 0.3891932 total: 240ms remaining: 1.04s
188: learn: 0.3888787 total: 242ms remaining: 1.04s
189: learn: 0.3885025 total: 243ms remaining: 1.04s
190: learn: 0.3881010 total: 245ms remaining: 1.04s
191: learn: 0.3878990 total: 247ms remaining: 1.04s
192: learn: 0.3876233 total: 248ms remaining: 1.04s
193: learn: 0.3874837 total: 249ms remaining: 1.04s
194: learn: 0.3871447 total: 251ms remaining: 1.03s
195: learn: 0.3869130 total: 253ms remaining: 1.04s
196: learn: 0.3866267 total: 254ms remaining: 1.04s
197: learn: 0.3863376 total: 256ms remaining: 1.04s
198: learn: 0.3860807 total: 258ms remaining: 1.04s
199: learn: 0.3858555 total: 259ms remaining: 1.03s
200: learn: 0.3856933 total: 262ms remaining: 1.04s
201: learn: 0.3852333 total: 263ms remaining: 1.04s
202: learn: 0.3850129 total: 265ms remaining: 1.04s
203: learn: 0.3845998 total: 266ms remaining: 1.04s
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204: learn: 0.3842391 total: 268ms remaining: 1.04s
205: learn: 0.3838749 total: 270ms remaining: 1.04s
206: learn: 0.3834861 total: 272ms remaining: 1.04s
207: learn: 0.3831736 total: 273ms remaining: 1.04s
208: learn: 0.3828068 total: 275ms remaining: 1.04s
209: learn: 0.3824434 total: 277ms remaining: 1.04s
210: learn: 0.3822784 total: 279ms remaining: 1.04s
211: learn: 0.3819947 total: 281ms remaining: 1.04s
212: learn: 0.3817275 total: 282ms remaining: 1.04s
213: learn: 0.3812036 total: 284ms remaining: 1.04s
214: learn: 0.3808548 total: 288ms remaining: 1.05s
215: learn: 0.3805853 total: 290ms remaining: 1.05s
216: learn: 0.3803196 total: 292ms remaining: 1.05s
217: learn: 0.3798829 total: 294ms remaining: 1.05s
218: learn: 0.3796456 total: 295ms remaining: 1.05s
219: learn: 0.3794585 total: 297ms remaining: 1.05s
220: learn: 0.3793382 total: 298ms remaining: 1.05s
221: learn: 0.3789186 total: 300ms remaining: 1.05s
222: learn: 0.3786381 total: 301ms remaining: 1.05s
223: learn: 0.3784047 total: 303ms remaining: 1.05s
224: learn: 0.3781615 total: 304ms remaining: 1.05s
225: learn: 0.3778167 total: 306ms remaining: 1.05s
226: learn: 0.3776034 total: 308ms remaining: 1.05s
227: learn: 0.3773312 total: 310ms remaining: 1.05s
228: learn: 0.3771462 total: 311ms remaining: 1.05s
229: learn: 0.3769867 total: 313ms remaining: 1.05s
230: learn: 0.3768776 total: 315ms remaining: 1.05s
231: learn: 0.3766504 total: 317ms remaining: 1.05s
232: learn: 0.3764435 total: 319ms remaining: 1.05s
233: learn: 0.3762339 total: 320ms remaining: 1.05s
234: learn: 0.3759028 total: 322ms remaining: 1.05s
235: learn: 0.3756549 total: 324ms remaining: 1.05s
236: learn: 0.3753997 total: 326ms remaining: 1.05s
237: learn: 0.3751644 total: 327ms remaining: 1.05s
238: learn: 0.3749762 total: 329ms remaining: 1.05s
239: learn: 0.3745232 total: 330ms remaining: 1.04s
240: learn: 0.3743505 total: 332ms remaining: 1.04s
241: learn: 0.3740809 total: 333ms remaining: 1.04s
242: learn: 0.3738730 total: 334ms remaining: 1.04s
243: learn: 0.3738107 total: 335ms remaining: 1.04s
244: learn: 0.3735603 total: 337ms remaining: 1.04s
245: learn: 0.3733850 total: 339ms remaining: 1.04s
246: learn: 0.3731780 total: 341ms remaining: 1.04s
247: learn: 0.3729540 total: 343ms remaining: 1.04s
248: learn: 0.3727063 total: 345ms remaining: 1.04s
249: learn: 0.3726012 total: 346ms remaining: 1.04s
250: learn: 0.3722589 total: 347ms remaining: 1.03s
251: learn: 0.3720918 total: 348ms remaining: 1.03s
252: learn: 0.3718509 total: 350ms remaining: 1.03s
253: learn: 0.3718247 total: 351ms remaining: 1.03s
254: learn: 0.3716090 total: 352ms remaining: 1.03s
255: learn: 0.3711946 total: 354ms remaining: 1.03s
256: learn: 0.3709488 total: 356ms remaining: 1.03s
257: learn: 0.3706431 total: 359ms remaining: 1.03s
258: learn: 0.3705878 total: 360ms remaining: 1.03s
259: learn: 0.3704922 total: 361ms remaining: 1.03s
260: learn: 0.3702042 total: 363ms remaining: 1.03s
261: learn: 0.3699142 total: 364ms remaining: 1.02s
262: learn: 0.3696976 total: 366ms remaining: 1.02s
263: learn: 0.3695347 total: 367ms remaining: 1.02s
264: learn: 0.3692612 total: 368ms remaining: 1.02s
265: learn: 0.3689620 total: 370ms remaining: 1.02s
266: learn: 0.3686376 total: 371ms remaining: 1.02s
267: learn: 0.3685327 total: 373ms remaining: 1.02s
268: learn: 0.3682383 total: 374ms remaining: 1.01s
269: learn: 0.3679223 total: 375ms remaining: 1.01s
270: learn: 0.3678265 total: 377ms remaining: 1.01s
271: learn: 0.3675609 total: 378ms remaining: 1.01s
272: learn: 0.3672668 total: 379ms remaining: 1.01s
273: learn: 0.3669952 total: 381ms remaining: 1.01s
274: learn: 0.3666170 total: 383ms remaining: 1.01s
275: learn: 0.3664455 total: 384ms remaining: 1.01s
```

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276: learn: 0.3661955 total: 386ms remaining: 1.01s
277: learn: 0.3660512 total: 389ms remaining: 1.01s
278: learn: 0.3658068 total: 390ms remaining: 1.01s
279: learn: 0.3655428 total: 392ms remaining: 1.01s
280: learn: 0.3653635 total: 393ms remaining: 1.01s
281: learn: 0.3652695 total: 395ms remaining: 1s
282: learn: 0.3651327 total: 397ms remaining: 1.01s
283: learn: 0.3649397 total: 399ms remaining: 1.01s
284: learn: 0.3646894 total: 402ms remaining: 1.01s
285: learn: 0.3646146 total: 404ms remaining: 1.01s
286: learn: 0.3644878 total: 406ms remaining: 1.01s
287: learn: 0.3642602 total: 408ms remaining: 1.01s
288: learn: 0.3641314 total: 409ms remaining: 1.01s
289: learn: 0.3638566 total: 411ms remaining: 1.01s
290: learn: 0.3636759 total: 413ms remaining: 1.01s
291: learn: 0.3636077 total: 415ms remaining: 1.01s
292: learn: 0.3634616 total: 417ms remaining: 1s
293: learn: 0.3632737 total: 419ms remaining: 1.01s
294: learn: 0.3630819 total: 420ms remaining: 1s
295: learn: 0.3628906 total: 424ms remaining: 1.01s
296: learn: 0.3626699 total: 428ms remaining: 1.01s
297: learn: 0.3626088 total: 430ms remaining: 1.01s
298: learn: 0.3622600 total: 431ms remaining: 1.01s
299: learn: 0.3621389 total: 433ms remaining: 1.01s
300: learn: 0.3618949 total: 434ms remaining: 1.01s
301: learn: 0.3617655 total: 436ms remaining: 1.01s
302: learn: 0.3616864 total: 438ms remaining: 1.01s
303: learn: 0.3615712 total: 439ms remaining: 1s
304: learn: 0.3612966 total: 441ms remaining: 1s
305: learn: 0.3611508 total: 443ms remaining: 1s
306: learn: 0.3609252 total: 444ms remaining: 1s
307: learn: 0.3606157 total: 445ms remaining: 1s
308: learn: 0.3603968 total: 447ms remaining: 999ms
309: learn: 0.3601393 total: 448ms remaining: 997ms
310: learn: 0.3600195 total: 449ms remaining: 995ms
311: learn: 0.3599128 total: 451ms remaining: 994ms
312: learn: 0.3598137 total: 452ms remaining: 992ms
313: learn: 0.3596662 total: 454ms remaining: 991ms
314: learn: 0.3593789 total: 456ms remaining: 991ms
315: learn: 0.3591567 total: 457ms remaining: 990ms
316: learn: 0.3590364 total: 459ms remaining: 989ms
317: learn: 0.3589201 total: 461ms remaining: 988ms
318: learn: 0.3587246 total: 462ms remaining: 986ms
319: learn: 0.3585718 total: 463ms remaining: 985ms
320: learn: 0.3584140 total: 465ms remaining: 983ms
321: learn: 0.3582841 total: 466ms remaining: 981ms
322: learn: 0.3581666 total: 467ms remaining: 979ms
323: learn: 0.3579765 total: 468ms remaining: 977ms
324: learn: 0.3575765 total: 470ms remaining: 976ms
325: learn: 0.3573673 total: 471ms remaining: 974ms
326: learn: 0.3572233 total: 473ms remaining: 973ms
327: learn: 0.3570933 total: 475ms remaining: 972ms
328: learn: 0.3568958 total: 477ms remaining: 972ms
329: learn: 0.3567596 total: 479ms remaining: 972ms
330: learn: 0.3565959 total: 480ms remaining: 971ms
331: learn: 0.3565551 total: 482ms remaining: 970ms
332: learn: 0.3564047 total: 483ms remaining: 968ms
333: learn: 0.3563576 total: 485ms remaining: 967ms
334: learn: 0.3561649 total: 486ms remaining: 965ms
335: learn: 0.3560405 total: 487ms remaining: 963ms
336: learn: 0.3558910 total: 489ms remaining: 961ms
337: learn: 0.3558084 total: 490ms remaining: 959ms
338: learn: 0.3557235 total: 491ms remaining: 957ms
339: learn: 0.3556781 total: 492ms remaining: 955ms
340: learn: 0.3555855 total: 494ms remaining: 954ms
341: learn: 0.3555194 total: 495ms remaining: 952ms
342: learn: 0.3553739 total: 497ms remaining: 951ms
343: learn: 0.3552420 total: 498ms remaining: 949ms
344: learn: 0.3551579 total: 499ms remaining: 947ms
345: learn: 0.3550074 total: 500ms remaining: 945ms
346: learn: 0.3549005 total: 502ms remaining: 945ms
347: learn: 0.3546591 total: 504ms remaining: 944ms
```

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348: learn: 0.3545169 total: 505ms remaining: 942ms
349: learn: 0.3544010 total: 506ms remaining: 940ms
350: learn: 0.3542230 total: 508ms remaining: 939ms
351: learn: 0.3539788 total: 509ms remaining: 937ms
352: learn: 0.3538741 total: 511ms remaining: 936ms
353: learn: 0.3537258 total: 512ms remaining: 935ms
354: learn: 0.3536787 total: 514ms remaining: 934ms
355: learn: 0.3535257 total: 517ms remaining: 935ms
356: learn: 0.3533282 total: 518ms remaining: 933ms
357: learn: 0.3532722 total: 520ms remaining: 932ms
358: learn: 0.3531606 total: 521ms remaining: 930ms
359: learn: 0.3530414 total: 522ms remaining: 929ms
360: learn: 0.3528967 total: 524ms remaining: 928ms
361: learn: 0.3527037 total: 526ms remaining: 926ms
362: learn: 0.3525516 total: 527ms remaining: 925ms
363: learn: 0.3523751 total: 528ms remaining: 923ms
364: learn: 0.3521815 total: 530ms remaining: 923ms
365: learn: 0.3519985 total: 532ms remaining: 921ms
366: learn: 0.3518148 total: 533ms remaining: 920ms
367: learn: 0.3515837 total: 535ms remaining: 918ms
368: learn: 0.3514514 total: 536ms remaining: 917ms
369: learn: 0.3511605 total: 538ms remaining: 916ms
370: learn: 0.3510776 total: 539ms remaining: 914ms
371: learn: 0.3509495 total: 541ms remaining: 913ms
372: learn: 0.3508651 total: 543ms remaining: 913ms
373: learn: 0.3507400 total: 545ms remaining: 913ms
374: learn: 0.3505946 total: 547ms remaining: 912ms
375: learn: 0.3504491 total: 549ms remaining: 910ms
376: learn: 0.3504140 total: 550ms remaining: 909ms
377: learn: 0.3502238 total: 551ms remaining: 907ms
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769: learn: 0.3076742 total: 1.12s remaining: 333ms
770: learn: 0.3075033 total: 1.12s remaining: 332ms
771: learn: 0.3073891 total: 1.12s remaining: 330ms
772: learn: 0.3071526 total: 1.12s remaining: 329ms
773: learn: 0.3070524 total: 1.12s remaining: 327ms
774: learn: 0.3069447 total: 1.12s remaining: 326ms
775: learn: 0.3068950 total: 1.12s remaining: 324ms
776: learn: 0.3067287 total: 1.12s remaining: 323ms
777: learn: 0.3065879 total: 1.13s remaining: 321ms
778: learn: 0.3064987 total: 1.13s remaining: 320ms
779: learn: 0.3064621 total: 1.13s remaining: 319ms
```

```
780: learn: 0.3063691 total: 1.13s remaining: 317ms
781: learn: 0.3061179 total: 1.13s remaining: 316ms
782: learn: 0.3060491 total: 1.13s remaining: 315ms
783: learn: 0.3059703 total: 1.14s remaining: 313ms
784: learn: 0.3059001 total: 1.14s remaining: 311ms
785: learn: 0.3058268 total: 1.14s remaining: 310ms
786: learn: 0.3057092 total: 1.14s remaining: 308ms
787: learn: 0.3056560 total: 1.14s remaining: 307ms
788: learn: 0.3055962 total: 1.14s remaining: 305ms
789: learn: 0.3054797 total: 1.14s remaining: 304ms
790: learn: 0.3053897 total: 1.14s remaining: 302ms
791: learn: 0.3052374 total: 1.15s remaining: 301ms
792: learn: 0.3050075 total: 1.15s remaining: 299ms
793: learn: 0.3048238 total: 1.15s remaining: 298ms
794: learn: 0.3047499 total: 1.15s remaining: 296ms
795: learn: 0.3046197 total: 1.15s remaining: 295ms
796: learn: 0.3045709 total: 1.15s remaining: 293ms
797: learn: 0.3044930 total: 1.15s remaining: 292ms
798: learn: 0.3043799 total: 1.15s remaining: 290ms
799: learn: 0.3042820 total: 1.15s remaining: 289ms
800: learn: 0.3042035 total: 1.16s remaining: 287ms
801: learn: 0.3041019 total: 1.16s remaining: 286ms
802: learn: 0.3040114 total: 1.16s remaining: 284ms
803: learn: 0.3039131 total: 1.16s remaining: 283ms
804: learn: 0.3038290 total: 1.16s remaining: 281ms
805: learn: 0.3037285 total: 1.16s remaining: 280ms
806: learn: 0.3036579 total: 1.16s remaining: 278ms
807: learn: 0.3035833 total: 1.16s remaining: 277ms
808: learn: 0.3035569 total: 1.17s remaining: 275ms
809: learn: 0.3034761 total: 1.17s remaining: 274ms
810: learn: 0.3033724 total: 1.17s remaining: 272ms
811: learn: 0.3032817 total: 1.17s remaining: 271ms
812: learn: 0.3032183 total: 1.17s remaining: 269ms
813: learn: 0.3031719 total: 1.17s remaining: 268ms
814: learn: 0.3029525 total: 1.17s remaining: 266ms
815: learn: 0.3028799 total: 1.17s remaining: 265ms
816: learn: 0.3028050 total: 1.18s remaining: 264ms
817: learn: 0.3027027 total: 1.18s remaining: 262ms
818: learn: 0.3025810 total: 1.18s remaining: 260ms
819: learn: 0.3023860 total: 1.18s remaining: 259ms
820: learn: 0.3021585 total: 1.18s remaining: 257ms
821: learn: 0.3020363 total: 1.18s remaining: 256ms
822: learn: 0.3019386 total: 1.18s remaining: 255ms
823: learn: 0.3019096 total: 1.18s remaining: 253ms
824: learn: 0.3018617 total: 1.19s remaining: 252ms
825: learn: 0.3017613 total: 1.19s remaining: 250ms
826: learn: 0.3015585 total: 1.19s remaining: 249ms
827: learn: 0.3013956 total: 1.19s remaining: 247ms
828: learn: 0.3012389 total: 1.19s remaining: 246ms
829: learn: 0.3011230 total: 1.19s remaining: 244ms
830: learn: 0.3010559 total: 1.19s remaining: 243ms
831: learn: 0.3008565 total: 1.2s remaining: 241ms
832: learn: 0.3008183 total: 1.2s remaining: 240ms
833: learn: 0.3006803 total: 1.2s remaining: 239ms
834: learn: 0.3006294 total: 1.2s remaining: 237ms
835: learn: 0.3005203 total: 1.2s remaining: 236ms
836: learn: 0.3004081 total: 1.2s remaining: 234ms
837: learn: 0.3002502 total: 1.2s remaining: 233ms
838: learn: 0.3001240 total: 1.2s remaining: 231ms
839: learn: 0.3000292 total: 1.21s remaining: 230ms
840: learn: 0.2999318 total: 1.21s remaining: 228ms
841: learn: 0.2997170 total: 1.21s remaining: 227ms
842: learn: 0.2996148 total: 1.21s remaining: 225ms
843: learn: 0.2995434 total: 1.21s remaining: 224ms
844: learn: 0.2994289 total: 1.21s remaining: 222ms
845: learn: 0.2991488 total: 1.21s remaining: 221ms
846: learn: 0.2990902 total: 1.21s remaining: 219ms
847: learn: 0.2990218 total: 1.21s remaining: 218ms
848: learn: 0.2989204 total: 1.22s remaining: 216ms
849: learn: 0.2988203 total: 1.22s remaining: 215ms
850: learn: 0.2987219 total: 1.22s remaining: 213ms
851: learn: 0.2986664 total: 1.22s remaining: 212ms
```

```
852: learn: 0.2985469 total: 1.22s remaining: 211ms
853: learn: 0.2984693 total: 1.22s remaining: 209ms
854: learn: 0.2984020 total: 1.22s remaining: 208ms
855: learn: 0.2982327 total: 1.23s remaining: 206ms
856: learn: 0.2980946 total: 1.23s remaining: 205ms
857: learn: 0.2980420 total: 1.23s remaining: 203ms
858: learn: 0.2980107 total: 1.23s remaining: 202ms
859: learn: 0.2979242 total: 1.23s remaining: 200ms
860: learn: 0.2978257 total: 1.23s remaining: 199ms
861: learn: 0.2978029 total: 1.23s remaining: 198ms
862: learn: 0.2976776 total: 1.24s remaining: 196ms
863: learn: 0.2975870 total: 1.24s remaining: 195ms
864: learn: 0.2974639 total: 1.24s remaining: 193ms
865: learn: 0.2972939 total: 1.24s remaining: 192ms
866: learn: 0.2972155 total: 1.24s remaining: 190ms
867: learn: 0.2971131 total: 1.24s remaining: 189ms
868: learn: 0.2970467 total: 1.24s remaining: 187ms
869: learn: 0.2969723 total: 1.24s remaining: 186ms
870: learn: 0.2969301 total: 1.25s remaining: 185ms
871: learn: 0.2968335 total: 1.25s remaining: 183ms
872: learn: 0.2967135 total: 1.25s remaining: 182ms
873: learn: 0.2966667 total: 1.25s remaining: 180ms
874: learn: 0.2965458 total: 1.25s remaining: 179ms
875: learn: 0.2964836 total: 1.25s remaining: 177ms
876: learn: 0.2963296 total: 1.25s remaining: 176ms
877: learn: 0.2961967 total: 1.25s remaining: 174ms
878: learn: 0.2961442 total: 1.25s remaining: 173ms
879: learn: 0.2958780 total: 1.26s remaining: 171ms
880: learn: 0.2958207 total: 1.26s remaining: 170ms
881: learn: 0.2957372 total: 1.26s remaining: 168ms
882: learn: 0.2956462 total: 1.26s remaining: 167ms
883: learn: 0.2955631 total: 1.26s remaining: 165ms
884: learn: 0.2955419 total: 1.26s remaining: 164ms
885: learn: 0.2954691 total: 1.26s remaining: 163ms
886: learn: 0.2953616 total: 1.26s remaining: 161ms
887: learn: 0.2952944 total: 1.26s remaining: 160ms
888: learn: 0.2951752 total: 1.27s remaining: 158ms
889: learn: 0.2950741 total: 1.27s remaining: 157ms
890: learn: 0.2950118 total: 1.27s remaining: 155ms
891: learn: 0.2948808 total: 1.27s remaining: 154ms
892: learn: 0.2946069 total: 1.27s remaining: 153ms
893: learn: 0.2944556 total: 1.27s remaining: 151ms
894: learn: 0.2943538 total: 1.28s remaining: 150ms
895: learn: 0.2942827 total: 1.28s remaining: 148ms
896: learn: 0.2942218 total: 1.28s remaining: 147ms
897: learn: 0.2941523 total: 1.28s remaining: 145ms
898: learn: 0.2940716 total: 1.28s remaining: 144ms
899: learn: 0.2938460 total: 1.28s remaining: 142ms
900: learn: 0.2937496 total: 1.28s remaining: 141ms
901: learn: 0.2936473 total: 1.28s remaining: 140ms
902: learn: 0.2935383 total: 1.29s remaining: 138ms
903: learn: 0.2932741 total: 1.29s remaining: 137ms
904: learn: 0.2931433 total: 1.29s remaining: 135ms
905: learn: 0.2931072 total: 1.29s remaining: 134ms
906: learn: 0.2930124 total: 1.29s remaining: 133ms
907: learn: 0.2929507 total: 1.29s remaining: 131ms
908: learn: 0.2928749 total: 1.3s remaining: 130ms
909: learn: 0.2927964 total: 1.3s remaining: 128ms
910: learn: 0.2927355 total: 1.3s remaining: 127ms
911: learn: 0.2925072 total: 1.3s remaining: 126ms
912: learn: 0.2924350 total: 1.3s remaining: 124ms
913: learn: 0.2923893 total: 1.3s remaining: 123ms
914: learn: 0.2922643 total: 1.31s remaining: 121ms
915: learn: 0.2920757 total: 1.31s remaining: 120ms
916: learn: 0.2919972 total: 1.31s remaining: 119ms
917: learn: 0.2919382 total: 1.31s remaining: 117ms
918: learn: 0.2919158 total: 1.31s remaining: 116ms
919: learn: 0.2917961 total: 1.31s remaining: 114ms
920: learn: 0.2916408 total: 1.31s remaining: 113ms
921: learn: 0.2915810 total: 1.31s remaining: 111ms
922: learn: 0.2915205 total: 1.32s remaining: 110ms
923: learn: 0.2914487 total: 1.32s remaining: 108ms
```

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924: learn: 0.2914125 total: 1.32s remaining: 107ms
925: learn: 0.2911329 total: 1.32s remaining: 105ms
926: learn: 0.2910400 total: 1.32s remaining: 104ms
927: learn: 0.2908132 total: 1.32s remaining: 103ms
928: learn: 0.2906772 total: 1.32s remaining: 101ms
929: learn: 0.2905811 total: 1.32s remaining: 99.7ms
930: learn: 0.2905089 total: 1.33s remaining: 98.3ms
931: learn: 0.2903460 total: 1.33s remaining: 96.8ms
932: learn: 0.2901279 total: 1.33s remaining: 95.4ms
933: learn: 0.2899957 total: 1.33s remaining: 94ms
934: learn: 0.2899071 total: 1.33s remaining: 92.5ms
935: learn: 0.2898269 total: 1.33s remaining: 91.1ms
936: learn: 0.2895969 total: 1.33s remaining: 89.7ms
937: learn: 0.2894449 total: 1.33s remaining: 88.2ms
938: learn: 0.2893186 total: 1.33s remaining: 86.8ms
939: learn: 0.2892549 total: 1.34s remaining: 85.3ms
940: learn: 0.2891595 total: 1.34s remaining: 83.9ms
941: learn: 0.2891209 total: 1.34s remaining: 82.5ms
942: learn: 0.2890585 total: 1.34s remaining: 81.1ms
943: learn: 0.2890267 total: 1.34s remaining: 79.7ms
944: learn: 0.2889570 total: 1.34s remaining: 78.2ms
945: learn: 0.2888953 total: 1.34s remaining: 76.8ms
946: learn: 0.2886792 total: 1.35s remaining: 75.4ms
947: learn: 0.2884946 total: 1.35s remaining: 74ms
948: learn: 0.2883550 total: 1.35s remaining: 72.5ms
949: learn: 0.2881913 total: 1.35s remaining: 71.1ms
950: learn: 0.2880346 total: 1.35s remaining: 69.7ms
951: learn: 0.2880120 total: 1.35s remaining: 68.2ms
952: learn: 0.2878553 total: 1.35s remaining: 66.8ms
953: learn: 0.2877767 total: 1.35s remaining: 65.4ms
954: learn: 0.2877628 total: 1.36s remaining: 63.9ms
955: learn: 0.2876516 total: 1.36s remaining: 62.5ms
956: learn: 0.2875138 total: 1.36s remaining: 61.1ms
957: learn: 0.2874188 total: 1.36s remaining: 59.6ms
958: learn: 0.2873819 total: 1.36s remaining: 58.2ms
959: learn: 0.2872645 total: 1.36s remaining: 56.8ms
960: learn: 0.2872019 total: 1.36s remaining: 55.4ms
961: learn: 0.2871630 total: 1.36s remaining: 53.9ms
962: learn: 0.2870670 total: 1.37s remaining: 52.5ms
963: learn: 0.2869972 total: 1.37s remaining: 51.1ms
964: learn: 0.2868638 total: 1.37s remaining: 49.6ms
965: learn: 0.2866161 total: 1.37s remaining: 48.2ms
966: learn: 0.2865765 total: 1.37s remaining: 46.8ms
967: learn: 0.2863801 total: 1.37s remaining: 45.4ms
968: learn: 0.2862693 total: 1.37s remaining: 44ms
969: learn: 0.2862289 total: 1.38s remaining: 42.5ms
970: learn: 0.2861831 total: 1.38s remaining: 41.1ms
971: learn: 0.2861505 total: 1.38s remaining: 39.7ms
972: learn: 0.2861193 total: 1.38s remaining: 38.3ms
973: learn: 0.2859927 total: 1.38s remaining: 36.8ms
974: learn: 0.2859507 total: 1.38s remaining: 35.4ms
975: learn: 0.2858821 total: 1.38s remaining: 34ms
976: learn: 0.2857509 total: 1.38s remaining: 32.6ms
977: learn: 0.2856414 total: 1.38s remaining: 31.1ms
978: learn: 0.2855376 total: 1.39s remaining: 29.7ms
979: learn: 0.2854827 total: 1.39s remaining: 28.3ms
980: learn: 0.2853861 total: 1.39s remaining: 26.9ms
981: learn: 0.2853476 total: 1.39s remaining: 25.5ms
982: learn: 0.2853124 total: 1.39s remaining: 24.1ms
983: learn: 0.2852616 total: 1.39s remaining: 22.7ms
984: learn: 0.2852023 total: 1.4s remaining: 21.2ms
985: learn: 0.2851014 total: 1.4s remaining: 19.8ms
986: learn: 0.2850422 total: 1.4s remaining: 18.4ms
987: learn: 0.2849396 total: 1.4s remaining: 17ms
988: learn: 0.2848950 total: 1.4s remaining: 15.6ms
989: learn: 0.2848518 total: 1.4s remaining: 14.2ms
990: learn: 0.2846491 total: 1.4s remaining: 12.7ms
991: learn: 0.2845500 total: 1.4s remaining: 11.3ms
992: learn: 0.2844121 total: 1.41s remaining: 9.91ms
993: learn: 0.2843443 total: 1.41s remaining: 8.5ms
994: learn: 0.2843051 total: 1.41s remaining: 7.08ms
995: learn: 0.2842434 total: 1.41s remaining: 5.67ms
```

```
996: learn: 0.2841570 total: 1.41s remaining: 4.25ms
997: learn: 0.2840381 total: 1.41s remaining: 2.83ms
998: learn: 0.2839733 total: 1.42s remaining: 1.42ms
999: learn: 0.2839293 total: 1.42s remaining: 0us
Accuracy: 83.17 %
Standard Deviation: 4.70 %
```

Training various models on the Training set

1. Logistic Regression

In [36]:

```
from sklearn.linear_model import LogisticRegression
clf_lr = LogisticRegression(random_state=0)
clf_lr.fit(X_train, y_train)
```

Out[36]:

```
LogisticRegression(random_state=0)
```

In [37]:

```
y_pred_lr = clf_lr.predict(X_test)
```

2. K-Nearest Neighbor (K-NN)

In [38]:

```
from sklearn.neighbors import KNeighborsClassifier
clf_knn = KNeighborsClassifier(n_neighbors = 5, metric = 'minkowski', p = 2)
clf_knn.fit(X_train, y_train)
```

Out[38]:

```
KNeighborsClassifier()
```

In [39]:

```
y_pred_knn = clf_knn.predict(X_test)
```

3. Support Vector Machine (SVM)

In [40]:

```
from sklearn.svm import SVC
clf_svc = SVC(kernel='linear', random_state=0)
clf_svc.fit(X_train, y_train)
```

Out[40]:

```
SVC(kernel='linear', random_state=0)
```

In [41]:

```
y_pred_svc = clf_svc.predict(X_test)
```

4. Kernel SVM

In [42]:

```
from sklearn.svm import SVC
clf_kernelSVC = SVC(kernel='rbf', random_state=0)
clf_kernelSVC.fit(X_train, y_train)
```

Out[42]:

Out[42]:

```
SVC(random_state=0)
```

In [43]:

```
y_pred_kernelSVC = clf_kernelSVC.predict(X_test)
```

5. Naïve Bayes

In [44]:

```
from sklearn.naive_bayes import GaussianNB
clf_nb = GaussianNB()
clf_nb.fit(X_train, y_train)
```

Out[44]:

```
GaussianNB()
```

In [45]:

```
y_pred_nb = clf_nb.predict(X_test)
```

6. Decision Tree

6.1 with GINI

In [46]:

```
from sklearn.tree import DecisionTreeClassifier
clf_dtGINI = DecisionTreeClassifier(criterion='gini',  random_state=0)
clf_dtGINI.fit(X_train, y_train)
```

Out[46]:

```
DecisionTreeClassifier(random_state=0)
```

In [47]:

```
y_pred_dtGINI = clf_dtGINI.predict(X_test)
```

6.2 with ENTROPY

In [48]:

```
from sklearn.tree import DecisionTreeClassifier
clf_dtENTROPY = DecisionTreeClassifier(criterion='entropy',  random_state=0)
clf_dtENTROPY.fit(X_train, y_train)
```

Out[48]:

```
DecisionTreeClassifier(criterion='entropy', random_state=0)
```

In [49]:

```
y_pred_dtENTROPY = clf_dtENTROPY.predict(X_test)
```

7. Random Forest Classifier

7.2 with ENTROPY

In [50]:

```
from sklearn.ensemble import RandomForestClassifier
```

```
clf_rfcGINI = RandomForestClassifier(n_estimators = 10, criterion = 'gini', random_state
= 0)
clf_rfcGINI.fit(X_train, y_train)
```

Out[50]:

```
RandomForestClassifier(n_estimators=10, random_state=0)
```

In [51]:

```
y_pred_rfcGINI = clf_rfcGINI.predict(X_test)
```

7.2 with ENTROPY

In [52]:

```
from sklearn.ensemble import RandomForestClassifier
clf_rfcENTROPY = RandomForestClassifier(n_estimators = 10, criterion = 'entropy', random
_state = 0)
clf_rfcENTROPY.fit(X_train, y_train)
```

Out[52]:

```
RandomForestClassifier(criterion='entropy', n_estimators=10, random_state=0)
```

In [53]:

```
y_pred_rfcENTROPY = clf_rfcENTROPY.predict(X_test)
```

Evaluating the model performance with Confusion Matrix

In [54]:

```
pip install -U prettytable
```

```
Requirement already satisfied: prettytable in /opt/conda/lib/python3.7/site-packages (2.4
.0)
Collecting prettytable
  Downloading prettytable-3.0.0-py3-none-any.whl (24 kB)
Requirement already satisfied: wcwidth in /opt/conda/lib/python3.7/site-packages (from pr
ettytable) (0.2.5)
Requirement already satisfied: importlib-metadata in /opt/conda/lib/python3.7/site-packag
es (from prettytable) (4.10.1)
Requirement already satisfied: zipp>=0.5 in /opt/conda/lib/python3.7/site-packages (from
importlib-metadata->prettytable) (3.6.0)
Requirement already satisfied: typing-extensions>=3.6.4 in /opt/conda/lib/python3.7/site-
packages (from importlib-metadata->prettytable) (3.10.0.2)
Installing collected packages: prettytable
  Attempting uninstall: prettytable
    Found existing installation: prettytable 2.4.0
    Uninstalling prettytable-2.4.0:
      Successfully uninstalled prettytable-2.4.0
Successfully installed prettytable-3.0.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting
behaviour with the system package manager. It is recommended to use a virtual environment
instead: https://pip.pypa.io/warnings/venv
Note: you may need to restart the kernel to use updated packages.
```

In [55]:

```
from prettytable import PrettyTable
from sklearn.metrics import confusion_matrix, accuracy_score
```

In [56]:

```
evaluataionTable = PrettyTable()
evaluataionTable.field_names = ["Model", "Confusion Matrix", "Accuracy"]
evaluataionTable.add_row(["Logistic Regression", confusion_matrix(y_test, y_pred_lr), ac
curacy_score(y_test, y_pred_lr)])
```

```
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["K Nearest Neighbor", confusion_matrix(y_test, y_pred_knn), ac
curacy_score(y_test, y_pred_knn)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Support Vector Machine", confusion_matrix(y_test, y_pred_svc)
, accuracy_score(y_test, y_pred_svc)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["SVM Kernel", confusion_matrix(y_test, y_pred_kernelSVC), accu
racy_score(y_test, y_pred_kernelSVC)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Naïve Bayes", confusion_matrix(y_test, y_pred_nb), accuracy_s
core(y_test, y_pred_nb)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Decision Tree (with GINI)", confusion_matrix(y_test, y_pred_d
tGINI), accuracy_score(y_test, y_pred_dtGINI)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Decision Tree (with Entropy)", confusion_matrix(y_test, y_pre
d_dtENTROPY), accuracy_score(y_test, y_pred_dtENTROPY)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Random Forest (with GINI)", confusion_matrix(y_test, y_pred_r
fcGINI), accuracy_score(y_test, y_pred_rfcGINI)])
evaluataionTable.add_row(["------------------------------", "------------------", "----
----------------"])
evaluataionTable.add_row(["Random Forest (with ENTROPY)", confusion_matrix(y_test, y_pre
d_rfcENTROPY), accuracy_score(y_test, y_pred_rfcENTROPY)])
print(evaluataionTable)
```

```
+------------------------------+--------------------+----------------------+
|             Model            |  Confusion Matrix  |       Accuracy       |
+------------------------------+--------------------+----------------------+
|      Logistic Regression     |     [[253  13]     |  0.9449760765550239  |
|                              |     [ 10 142]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|       K Nearest Neighbor     |     [[231  35]     |  0.8588516746411483  |
|                              |     [ 24 128]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|    Support Vector Machine    |     [[266   0]     |         1.0          |
|                              |     [  0 152]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|          SVM Kernel          |     [[256  10]     |  0.9019138755980861  |
|                              |     [ 31 121]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|          Naïve Bayes         |     [[223  43]     |  0.868421052631579   |
|                              |     [ 12 140]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|   Decision Tree (with GINI)  |     [[218  48]     |  0.7990430622009569  |
|                              |     [ 36 116]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|  Decision Tree (with Entropy)|     [[221  45]     |  0.8038277511961722  |
|                              |     [ 37 115]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|   Random Forest (with GINI)  |     [[237  29]     |  0.8444976076555024  |
|                              |     [ 36 116]]     |                      |
| ---------------------------- | ------------------ | -------------------- |
|  Random Forest (with ENTROPY)|     [[234  32]     |  0.8277511961722488  |
|                              |     [ 40 112]]     |                      |
+------------------------------+--------------------+----------------------+
```

Confusion Matrix :

In [57]:

```
confusionMatrixTable = PrettyTable()
```

```
confusionMatrixTable.field_names = ["Model", "Accuracy"]
confusionMatrixTable.add_row(["Logistic Regression", confusion_matrix(y_test, y_pred_lr)
])
confusionMatrixTable.add_row(["K Nearest Neighbor", confusion_matrix(y_test, y_pred_knn)
])
confusionMatrixTable.add_row(["Support Vector Machine", confusion_matrix(y_test, y_pred_s
vc)])
confusionMatrixTable.add_row(["SVM Kernel", confusion_matrix(y_test, y_pred_kernelSVC)])
confusionMatrixTable.add_row(["Naïve Bayes", confusion_matrix(y_test, y_pred_nb)])
confusionMatrixTable.add_row(["Decision Tree (with GINI)", confusion_matrix(y_test, y_pr
ed_dtGINI)])
confusionMatrixTable.add_row(["Decision Tree (with Entropy)", confusion_matrix(y_test, y
_pred_dtENTROPY)])
confusionMatrixTable.add_row(["Random Forest (with GINI)", confusion_matrix(y_test, y_pr
ed_rfcGINI)])
confusionMatrixTable.add_row(["Random Forest (with ENTROPY)", confusion_matrix(y_test, y
_pred_rfcENTROPY)])
print(confusionMatrixTable)
```

```
+------------------------------+-------------+
|            Model             |   Accuracy  |
+------------------------------+-------------+
|     Logistic Regression      |  [[253  13] |
|                              |  [ 10 142]] |
|      K Nearest Neighbor      |  [[231  35] |
|                              |  [ 24 128]] |
|    Support Vector Machine    |  [[266   0] |
|                              |  [  0 152]] |
|          SVM Kernel          |  [[256  10] |
|                              |  [ 31 121]] |
|         Naïve Bayes          |  [[223  43] |
|                              |  [ 12 140]] |
|  Decision Tree (with GINI)   |  [[218  48] |
|                              |  [ 36 116]] |
| Decision Tree (with Entropy) |  [[221  45] |
|                              |  [ 37 115]] |
|  Random Forest (with GINI)   |  [[237  29] |
|                              |  [ 36 116]] |
| Random Forest (with ENTROPY) |  [[234  32] |
|                              |  [ 40 112]] |
+------------------------------+-------------+
```

Accuracy Table :

In [58]:

```
AccuracyTable = PrettyTable()
AccuracyTable.field_names = ["Model", "Accuracy"]
AccuracyTable.add_row(["Logistic Regression", accuracy_score(y_test, y_pred_lr)])
AccuracyTable.add_row(["K Nearest Neighbor", accuracy_score(y_test, y_pred_knn)])
AccuracyTable.add_row(["Support Vector Machine", accuracy_score(y_test, y_pred_svc)])
AccuracyTable.add_row(["SVM Kernel", accuracy_score(y_test, y_pred_kernelSVC)])
AccuracyTable.add_row(["Naïve Bayes", accuracy_score(y_test, y_pred_nb)])
AccuracyTable.add_row(["Decision Tree (with GINI)", accuracy_score(y_test, y_pred_dtGINI)
])
AccuracyTable.add_row(["Decision Tree (with Entropy)", accuracy_score(y_test, y_pred_dtEN
TROPY)])
AccuracyTable.add_row(["Random Forest (with GINI)", accuracy_score(y_test, y_pred_rfcGIN
I)])
AccuracyTable.add_row(["Random Forest (with ENTROPY)", accuracy_score(y_test, y_pred_rfc
ENTROPY)])
print(AccuracyTable)
```

```
+------------------------------+--------------------+
|            Model             |      Accuracy      |
+------------------------------+--------------------+
|     Logistic Regression      | 0.9449760765550239 |
|      K Nearest Neighbor      | 0.8588516746411483 |
|    Support Vector Machine    |        1.0         |
|          SVM Kernel          | 0.9019138755980861 |
|         Naïve Bayes          | 0.868421052631579  |
```

```
|  Decision Tree (with GINI)    | 0.7990430622009569 |
| Decision Tree (with Entropy)  | 0.8038277511961722 |
|  Random Forest (with GINI)    | 0.8444976076555024 |
| Random Forest (with ENTROPY)  | 0.8277511961722488 |
+-------------------------------+--------------------+
```

In [59]:

```
output = pd.DataFrame({"PassengerId": test_dataset.PassengerId, "Survived": y_pred_kerne
lSVC})
print(output)
output.to_csv('19BCE245_DL_Prac1_kernelSVC.csv', index=False)
```

```
     PassengerId  Survived
0            892         0
1            893         0
2            894         0
3            895         0
4            896         0
..           ...       ...
413         1305         0
414         1306         1
415         1307         0
416         1308         0
417         1309         0

[418 rows x 2 columns]
```

Grid Search with SVM

- **taking too much load.**

> **IGNORE THIS SECTION.**

In [60]:

```
# from sklearn.svm import SVC
# classifier = SVC(kernel = 'rbf', random_state = 0)
# classifier.fit(X_train, y_train)

# from sklearn.metrics import confusion_matrix, accuracy_score
# y_pred = classifier.predict(X_test)
# cm = confusion_matrix(y_test, y_pred)
# print(cm)
# accuracy_score(y_test, y_pred)
```

In [61]:

```
# # k-fold
# from sklearn.model_selection import cross_val_score
# accuracies = cross_val_score(estimator=classifier, X=X_train, y=y_train, cv=10)
# print(f"Accuracy : {accuracies.mean()*100:.2f}%")
# print(f"Standard Deviation : {accuracies.std()*100:.2f}%")
```

In [62]:

```
# #grid search
# from sklearn.model_selection import GridSearchCV
# parameters = [
#               {
#                   'C' : np.linspace(0.01, 1,num=10).tolist(),     # [0, 0.25, 0.5, 0.75,
1]
#                   'kernel' : ['linear'],
#                   'degree' : [3, 4, 5],
#               },
#               {
#                   'C' : np.linspace(0.01, 1,num=10).tolist(),     # [0, 0.25, 0.5, 0.75,
```

```
1]
#                   'kernel' : ['rbf','poly','sigmoid'],
#                   'gamma' : np.linspace(0.01, 1,num=10).tolist(), # [0.1, 0.2, 0.3, 0.4
, 0.5, 0.6, 0.7, 0.8, 0.9]
#                   'degree' : [3,4,5],
#               }
#              ]
# grid_search = GridSearchCV(estimator=classifier,
#                            param_grid=parameters,
#                            scoring='accuracy',  # As we are doing classification, we a
re using accuracy for scoring models
#                            cv=10, # number of folds (same like k-fold cross validation
)
#                            n_jobs=-1 # all your processors will be used available in h
ardware
#                            )
# grid_search.fit(X_train, y_train)
```

In [63]:

```
# #grid search 2 (smaller one)
# from sklearn.model_selection import GridSearchCV
# parameters = [
#             #  {
#             #      'C' :  [0, 0.25, 0.5, 0.75, 1],
#             #      'kernel' : ['linear'],
#             #      'degree' : [3, 4, 5],
#             #  },
#              {
#                   'C' :  [0, 0.3, 0.65, 1],
#                   'kernel' : ['rbf','poly','sigmoid'],
#                   'gamma' :  [0.1,  0.5, 0.9],
#                   'degree' : [3, 4, 5],
#               }
#              ]
# grid_search = GridSearchCV(estimator=classifier,
#                            param_grid=parameters,
#                            scoring='accuracy',  # As we are doing classification, we a
re using accuracy for scoring models
#                            cv=4, # number of folds (same like k-fold cross validation)
#                            n_jobs=-1 # all your processors will be used available in h
ardware
#                            )
# grid_search.fit(X_train, y_train)
```

In [64]:

```
# best_accuracy = grid_search.best_score_
# print(f"Best Accuracy achieved : {best_accuracy*100:.2f}%")
```

In [65]:

```
# best_parameters = grid_search.best_params_
# print(f"Best parameters achieved : {best_parameters}")
```