

Assignment 02- BA

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```
library(readxl)
Online_Retail <- read_excel("F:/1st sem/Analytics/Assignment
02/Online_Retail.xlsx")
View(Online_Retail)
```

```
install.packages("lubridate")
```

```
library(dplyr)

##
## Attaching package: 'dplyr'

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

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

library(lubridate)

##
## Attaching package: 'lubridate'

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

library(dplyr)
```

01. Breakdown the number of transactions by countries

```
#Calculate total number of transactions
total_transactions <- nrow(Online_Retail)

#Group transactions by country and the number of transactions per country
transaction_by_country1<-Online_Retail %>%
  group_by(Country)%>%
  summarize(num_transactions = n())

#Calculate the percentage of transactions for each country
transaction_by_country2<-transaction_by_country1%>%
```

```
mutate(percentage=num_transactions/total_transactions*100)
```

```
#Filter the countries which accounting for more than 1% of total transactions
transaction_by_country3<-transaction_by_country2%>%
  filter(percentage>1)
```

02. Create new variable "Transaction_value"

```
#Create a new variable 'Transaction Value'
```

```
Online_Retail2<-Online_Retail%>%
  mutate(Transaction_Value = Quantity*UnitPrice)
```

```
Online_Retail2
```

```
## # A tibble: 541,909 × 9
```

```
##   InvoiceNo Stock...1 Descr...2 Quant...3 InvoiceDate      UnitP...4 Cust...5
```

```
Country
```

```
##   <chr>      <chr>    <chr>      <dbl> <dtm>              <dbl>    <dbl>
```

```
<chr>
```

```
##   1 536365    85123A  WHITE ...      6 2010-12-01 08:26:00    2.55    17850
```

```
United...
```

```
##   2 536365    71053   WHITE ...      6 2010-12-01 08:26:00    3.39    17850
```

```
United...
```

```
##   3 536365    84406B  CREAM ...      8 2010-12-01 08:26:00    2.75    17850
```

```
United...
```

```
##   4 536365    84029G  KNITTE...      6 2010-12-01 08:26:00    3.39    17850
```

```
United...
```

```
##   5 536365    84029E  RED WO...      6 2010-12-01 08:26:00    3.39    17850
```

```
United...
```

```
##   6 536365    22752   SET 7 ...      2 2010-12-01 08:26:00    7.65    17850
```

```
United...
```

```
##   7 536365    21730   GLASS ...      6 2010-12-01 08:26:00    4.25    17850
```

```
United...
```

```
##   8 536366    22633   HAND W...      6 2010-12-01 08:28:00    1.85    17850
```

```
United...
```

```
##   9 536366    22632   HAND W...      6 2010-12-01 08:28:00    1.85    17850
```

```
United...
```

```
##  10 536367    84879   ASSORT...     32 2010-12-01 08:34:00    1.69    13047
```

```
United...
```

```
## # ... with 541,899 more rows, 1 more variable: Transaction_Value <dbl>, and
```

```
## #   abbreviated variable names 1StockCode, 2Description, 3Quantity, 4
```

```
UnitPrice,
```

```
## #   5CustomerID
```

03. Breakdown of transaction values by countries

```
#Group transactions by country and sum the transaction values per country
```

```
transaction_values_by_country <-Online_Retail2%>%
  group_by(Country)%>%
```

```

summarize(Total_Transaction_Value=sum(Transaction_Value))

#Filter the results to only display countries with total transactions
exceeding 130,000 British Pound
transaction_values_by_country2 <-transaction_values_by_country%>%
  filter(Total_Transaction_Value > 130000)

#Add a row to the data frame that shows the total sum of all transaction
values
transaction_values_by_country3 <- transaction_values_by_country2%>%

bind_rows(data.frame(Country="Total",Total_Transaction_Value=sum(transaction_v
alues_by_country2$Total_Transaction_Value)))

```

04. Dealing with the invoice data variable

```

Temp <- as.POSIXct(Online_Retail$InvoiceDate,format="%m%d%Y %H:%M")
head(Temp)

## [1] "2010-12-01 08:26:00 UTC" "2010-12-01 08:26:00 UTC"
## [3] "2010-12-01 08:26:00 UTC" "2010-12-01 08:26:00 UTC"
## [5] "2010-12-01 08:26:00 UTC" "2010-12-01 08:26:00 UTC"

Online_Retail$New_Invoice_Date<-as.Date(Temp)
Online_Retail$invoice_day_Week<-weekdays(as.Date(Temp))
Online_Retail$New_invoice_Hour<- hour(Temp)

head(Online_Retail)

## # A tibble: 6 × 11
##   InvoiceNo StockC...1 Descr...2 Quant...3 InvoiceDate      UnitP...4 Custo...5
##   Country
##   <chr>      <chr>      <chr>      <dbl> <dtm>              <dbl>      <dbl>
##   <chr>
## 1 536365    85123A    WHITE ...      6 2010-12-01 08:26:00    2.55    17850
##   United...
## 2 536365    71053    WHITE ...      6 2010-12-01 08:26:00    3.39    17850
##   United...
## 3 536365    84406B    CREAM ...      8 2010-12-01 08:26:00    2.75    17850
##   United...
## 4 536365    84029G    KNITTE...      6 2010-12-01 08:26:00    3.39    17850
##   United...
## 5 536365    84029E    RED WO...      6 2010-12-01 08:26:00    3.39    17850
##   United...
## 6 536365    22752    SET 7 ...      2 2010-12-01 08:26:00    7.65    17850
##   United...
## # ... with 3 more variables: New_Invoice_Date <date>, invoice_day_Week
##   <chr>,
##   New_invoice_Hour <int>, and abbreviated variable names 1StockCode,
##   2Description, 3Quantity, 4UnitPrice, 5CustomerID

```

```

Online_Retail$New_Invoice_Date[2000]-Online_Retail$New_Invoice_Date[10]

## Time difference of 8 days

Online_Retail$invoice_day_Week= weekdays(Online_Retail$New_Invoice_Date)
Online_Retail$New_invoice_Hour=as.numeric(format(Temp,"%H"))
Online_Retail$New_Invoice_Month = as.numeric(format(Temp, "%m"))

# a)Show the percentage of transactions (by numbers) by days of the week
day_counts <-table(Online_Retail$invoice_day_Week)
day_percent <- prop.table(day_counts)*100
day_percent

##
##      Friday      Monday      Sunday  Thursday   Tuesday Wednesday
##  15.16731  17.55110  11.87930  19.16503  18.78692  17.45035

# b)Show the percentage of transactions (by transaction volume) by days of
the week

day_totals<-
aggregate(Online_Retail$Quantity,by=list(invoice_day_Week=Online_Retail$invoic
e_day_Week),FUN=sum)
total_volume<-sum(day_totals$x)
day_percentages<-
data.frame(day=day_totals$invoice_day_Week,percent=(day_totals$x/total_volume
)*100)
print(day_percentages)

##           day    percent
## 1    Friday 15.347197
## 2    Monday 15.751219
## 3    Sunday  9.035768
## 4  Thursday 22.560307
## 5    Tuesday 18.575336
## 6 Wednesday 18.730172

# c) Show the percentage of transactions (by transaction volume) by month of
the year
monthly_counts <- Online_Retail%>%
  group_by(New_Invoice_Month)%>%
  summarise(n=n())

total_transactions <-sum(monthly_counts$n)

monthly_percentages<-monthly_counts%>%
  mutate(percentage = (n/total_transactions)*100)
monthly_percentages

## # A tibble: 12 × 3
##   New_Invoice_Month    n percentage

```

```
##           <dbl> <int>      <dbl>
##  1           1 35147      6.49
##  2           2 27707      5.11
##  3           3 36748      6.78
##  4           4 29916      5.52
##  5           5 37030      6.83
##  6           6 36874      6.80
##  7           7 39518      7.29
##  8           8 35284      6.51
##  9           9 50226      9.27
## 10          10 60742     11.2
## 11          11 84711     15.6
## 12          12 68006     12.5
```

d) What was the date with the highest number of transactions from Australia?

```
Retail_Aus <- subset(Online_Retail, Country == "Australia")
transaction_by_date <- aggregate(InvoiceNo~New_Invoice_Date, data =
  Retail_Aus, FUN = length)
max_transactions <- max(transaction_by_date$InvoiceNo)
date_max_transactions <-
  transaction_by_date$New_Invoice_Date[transaction_by_date$InvoiceNo==max_trans
    actions]
date_max_transactions
```

```
## [1] "2011-06-15"
```

e) The company needs to shut down the website for two consecutive hours for maintenance. What would be the hour of the day to start this so that the distribution is at minimum for the customers? The responsible IT team is available from 7:00 to 20:00 every day.

```
table(Online_Retail$New_invoice_Hour)
```

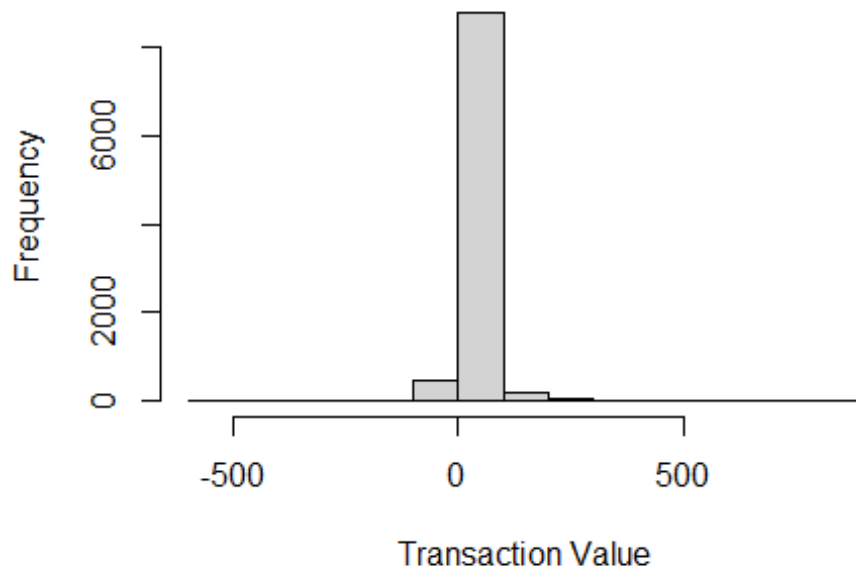
```
##
##      6      7      8      9     10     11     12     13     14     15     16     17
##  41    383   8909 34332 49037 57674 78709 72259 67471 77519 54516 28509
## 7974
##    19    20
## 3705   871
```

Answer: According to the table the fewest number of transactions occurring during the morning hours. Therefore the best two hour for the maintenance is 6.00 to 8.00.

05. Plot the histogram of transaction values from Germany.

```
germany_data <- Online_Retail2[Online_Retail2$Country == "Germany",]
hist(germany_data$Transaction_Value, main = "Histogram of Transaction Values
  from Germany",
  xlab = "Transaction Value", ylab = "Frequency")
```

Histogram of Transaction Values from Germany



06. Which customer had the highest number of transactions? Which customer is most valuable (i.e. highest total sum of transactions)?

```
customer_total <- aggregate(Online_Retail2$Transaction_Value, by =  
list(Online_Retail2$CustomerID), sum)  
customer_total <- customer_total[order(-customer_total$x),]  
customer_total
```

```
##      Group.1      x  
## 1704    14646 279489.020  
## 4234    18102 256438.490  
## 3759    17450 187482.170  
## 1896    14911 132572.620  
## 56      12415 123725.450  
## 1346    14156 113384.140  
## 3802    17511  88125.380  
## 3203    16684  65892.080  
## 1006    13694  62653.100  
## 2193    15311  59419.340  
## 569     13089  57385.880  
## 1301    14096  57120.910  
## 2000    15061  54228.740  
## 4126    17949  52750.840  
## 2538    15769  51823.720  
## 2723    16029  50992.610  
## 1448    14298  50862.440
```

## 1296	14088	50415.490
## 4043	17841	40340.780
## 1079	13798	36351.420
## 3015	16422	33805.690
## 459	12931	33462.810
## 2709	16013	33366.250
## 2591	15838	33350.760
## 3713	17389	31300.080
## 3723	17404	30300.820
## 331	12748	29072.100
## 577	13098	28658.880
## 565	13081	27964.480
## 804	13408	27487.410
## 1729	14680	26932.340
## 4054	17857	26763.340
## 2946	16333	26626.800
## 1068	13777	25748.350
## 2523	15749	21535.900
## 2861	16210	21086.300
## 335	12753	21024.010
## 3705	17381	20272.430
## 3926	17675	20098.100
## 1981	15039	19786.440
## 319	12731	18793.410
## 101	12471	18740.920
## 2080	15159	18573.680
## 274	12678	17588.260
## 3742	17428	17078.450
## 1145	13881	16989.520
## 1063	13767	16945.710
## 451	12921	16389.740
## 437	12901	16293.100
## 3928	17677	16219.220
## 2604	15856	16173.670
## 2100	15189	15802.140
## 1269	14051	15477.340
## 3326	16839	15357.780
## 1252	14031	14634.640
## 2342	15513	14520.080
## 2799	16133	14305.660
## 1862	14866	14197.450
## 3216	16705	13946.130
## 277	12681	13677.590
## 227	12621	13612.070
## 72	12433	13375.870
## 158	12540	13309.040
## 107	12477	13117.010
## 3974	17735	13110.020
## 1421	14258	12650.080
## 2439	15640	12433.340

## 562	13078	12432.280
## 2330	15498	12396.460
## 2699	16000	12393.700
## 278	12682	12288.220
## 170	12557	11990.960
## 3091	16525	11895.570
## 3672	17340	11891.180
## 1675	14606	11713.850
## 465	12939	11581.800
## 1676	14607	11341.100
## 1371	14194	11216.750
## 2053	15125	11117.050
## 51	12409	11056.930
## 1884	14895	11020.260
## 488	12971	10930.260
## 757	13340	10736.480
## 3855	17581	10736.110
## 741	13319	10664.340
## 1795	14769	10641.600
## 3538	17139	10585.570
## 588	13113	10510.000
## 1278	14062	10464.850
## 3280	16779	10454.050
## 3517	17107	10380.430
## 2421	15615	10360.040
## 2148	15251	10327.110
## 2837	16180	10217.480
## 3329	16843	10183.820
## 4062	17865	10158.540
## 3951	17706	10097.370
## 199	12590	9861.380
## 653	13199	9803.960
## 508	13001	9797.920
## 2014	15078	9623.350
## 837	13458	9537.920
## 1769	14733	9451.540
## 3090	16523	9295.670
## 299	12709	9294.100
## 1721	14667	9231.200
## 1496	14367	9167.820
## 329	12744	9120.390
## 179	12567	9114.940
## 4226	18092	9065.760
## 1207	13969	8986.690
## 87	12451	8933.520
## 860	13488	8910.610
## 2726	16033	8727.610
## 570	13090	8689.390
## 3610	17243	8628.550
## 3650	17306	8600.730

## 3450	17017	8574.110
## 3183	16656	8568.240
## 4261	18139	8393.220
## 3114	16558	8257.040
## 2228	15358	8234.800
## 279	12683	8221.090
## 1274	14056	8124.400
## 1912	14936	8117.420
## 3195	16672	8093.590
## 1124	13854	8025.020
## 4239	18109	7925.320
## 1920	14952	7912.790
## 1847	14849	7904.280
## 67	12428	7877.200
## 1814	14796	7839.510
## 74	12435	7829.890
## 2179	15290	7803.770
## 960	13629	7792.360
## 573	13093	7741.470
## 1616	14527	7711.380
## 4024	17811	7677.710
## 1985	15044	7629.380
## 2103	15194	7521.170
## 4286	18172	7490.170
## 699	13263	7454.070
## 3717	17396	7330.800
## 4331	18229	7276.900
## 522	13018	7272.750
## 192	12583	7187.340
## 3249	16745	7170.700
## 104	12474	7116.470
## 492	12980	7092.060
## 3238	16729	7076.280
## 746	13324	7072.800
## 3347	16873	7066.310
## 1220	13985	7024.530
## 1927	14961	7006.580
## 345	12766	6989.630
## 366	12798	6977.040
## 2308	15465	6945.020
## 526	13027	6912.000
## 499	12989	6854.510
## 2844	16187	6841.240
## 3223	16713	6840.230
## 3733	17416	6838.340
## 296	12705	6814.240
## 1967	15023	6763.160
## 4198	18055	6752.140
## 3097	16532	6748.800
## 386	12830	6748.400

## 2409	15601	6745.360
## 927	13576	6703.300
## 3250	16746	6694.310
## 2962	16353	6675.710
## 3384	16923	6666.830
## 2147	15249	6657.360
## 3179	16652	6654.260
## 2839	16182	6617.650
## 3670	17338	6612.180
## 2319	15482	6568.720
## 106	12476	6546.580
## 2067	15144	6530.040
## 3307	16814	6500.600
## 2481	15694	6423.600
## 70	12431	6416.390
## 1137	13871	6389.800
## 232	12626	6388.350
## 580	13102	6336.290
## 4325	18223	6315.230
## 2795	16126	6287.770
## 1017	13709	6249.110
## 13	12359	6245.530
## 102	12472	6229.480
## 989	13668	6216.070
## 11	12357	6207.670
## 3657	17315	6204.460
## 1954	15005	6180.490
## 1275	14057	6147.400
## 1277	14060	6135.380
## 2658	15939	6102.260
## 3800	17509	6100.740
## 670	13225	6083.040
## 1305	14101	5976.790
## 239	12637	5953.250
## 2246	15382	5927.860
## 576	13097	5893.320
## 810	13418	5845.440
## 1914	14944	5842.950
## 658	13209	5820.160
## 1600	14505	5818.700
## 738	13316	5815.490
## 1529	14415	5811.560
## 1770	14735	5807.690
## 2121	15218	5756.890
## 3935	17686	5739.460
## 639	13178	5725.470
## 309	12720	5713.280
## 544	13050	5684.610
## 1312	14110	5669.650
## 3109	16553	5664.570

## 844	13468	5656.750
## 1267	14049	5639.150
## 511	13004	5613.430
## 900	13534	5613.080
## 4246	18118	5595.770
## 3475	17049	5594.780
## 111	12481	5590.860
## 3987	17757	5585.490
## 394	12839	5583.620
## 3269	16767	5580.600
## 2332	15502	5541.460
## 3959	17716	5505.790
## 3429	16985	5461.620
## 2564	15805	5452.170
## 3148	16609	5450.960
## 2902	16265	5423.150
## 116	12490	5417.930
## 3961	17719	5367.800
## 4327	18225	5361.020
## 2822	16161	5352.970
## 704	13269	5315.920
## 2924	16303	5305.830
## 2073	15150	5303.970
## 3969	17730	5288.830
## 4049	17850	5288.630
## 2898	16258	5203.510
## 4328	18226	5192.100
## 2506	15727	5178.960
## 4055	17858	5155.660
## 16	12362	5154.580
## 3215	16701	5150.270
## 1055	13756	5145.120
## 2636	15903	5126.340
## 3484	17061	5116.130
## 1734	14688	5107.380
## 4306	18198	5083.060
## 1987	15046	5064.010
## 71	12432	5059.320
## 608	13139	5055.790
## 3870	17602	5050.770
## 2499	15719	5043.960
## 3214	16700	5040.000
## 943	13599	5030.600
## 2187	15301	5028.120
## 3740	17426	5022.260
## 80	12444	5005.460
## 1783	14755	4965.380
## 2369	15547	4954.840
## 1467	14329	4928.740
## 2848	16191	4913.320

## 1189	13941	4912.410
## 1751	14709	4911.140
## 76	12437	4896.660
## 3534	17133	4892.240
## 283	12688	4873.810
## 291	12700	4867.990
## 263	12664	4863.880
## 2549	15786	4834.200
## 1444	14292	4819.330
## 3693	17365	4801.560
## 2514	15738	4788.770
## 517	13013	4786.990
## 2376	15555	4758.200
## 3936	17690	4748.450
## 3907	17652	4737.130
## 478	12955	4734.260
## 3232	16722	4711.210
## 1646	14562	4709.220
## 303	12714	4708.860
## 1330	14135	4690.310
## 2074	15152	4684.240
## 1349	14159	4678.300
## 2099	15187	4670.080
## 1369	14191	4660.010
## 1364	14180	4640.770
## 4023	17809	4627.620
## 1368	14189	4604.310
## 3391	16931	4604.220
## 2180	15291	4596.510
## 1438	14286	4595.810
## 1511	14390	4592.470
## 1234	14004	4582.640
## 3489	17068	4531.340
## 3877	17613	4509.370
## 113	12484	4495.270
## 146	12524	4485.720
## 233	12627	4478.530
## 1975	15032	4464.100
## 3692	17364	4455.730
## 1294	14085	4435.790
## 2024	15093	4410.140
## 702	13267	4404.440
## 4147	17975	4393.610
## 3428	16984	4392.420
## 2670	15955	4389.810
## 3163	16626	4379.650
## 334	12752	4366.780
## 3400	16945	4345.500
## 2618	15874	4330.670
## 1242	14016	4328.460

## 4348	18251	4314.720
## 2	12347	4310.000
## 4118	17937	4301.220
## 875	13505	4282.880
## 1977	15034	4277.660
## 1535	14422	4263.640
## 301	12712	4241.630
## 1817	14800	4236.340
## 339	12757	4227.700
## 1615	14525	4221.370
## 123	12500	4206.270
## 4104	17920	4204.100
## 3735	17419	4200.970
## 2678	15971	4199.850
## 330	12747	4196.010
## 4190	18041	4161.140
## 3105	16549	4154.640
## 910	13555	4149.280
## 473	12949	4143.020
## 789	13384	4122.280
## 2386	15570	4109.970
## 155	12536	4106.820
## 1222	13988	4098.800
## 1622	14534	4075.350
## 3136	16592	4073.280
## 85	12449	4067.290
## 180	12569	4064.990
## 1299	14092	4063.100
## 2999	16401	4061.240
## 1517	14401	4039.980
## 3193	16670	4022.460
## 1096	13815	4014.910
## 3845	17567	4012.560
## 28	12378	4008.620
## 2843	16186	3991.940
## 3441	17001	3989.570
## 1634	14547	3986.740
## 414	12867	3986.220
## 257	12656	3982.720
## 480	12957	3979.040
## 2271	15416	3974.370
## 2356	15529	3967.780
## 3997	17769	3960.630
## 641	13183	3957.780
## 1433	14277	3957.000
## 3875	17611	3947.870
## 316	12727	3947.700
## 3703	17377	3925.920
## 1538	14426	3918.900
## 3863	17593	3911.560

## 1083	13802	3906.270
## 1773	14739	3899.100
## 3906	17651	3886.670
## 396	12841	3876.400
## 1443	14291	3873.300
## 351	12779	3868.700
## 332	12749	3868.200
## 596	13124	3866.330
## 1230	13999	3865.260
## 4212	18073	3864.440
## 2104	15195	3861.000
## 157	12539	3852.500
## 2563	15804	3848.550
## 2943	16327	3844.220
## 262	12662	3817.080
## 3507	17091	3802.810
## 2614	15867	3797.790
## 3182	16655	3794.520
## 823	13435	3794.490
## 2185	15299	3787.090
## 175	12562	3781.740
## 2184	15298	3774.100
## 2826	16168	3770.600
## 4224	18087	3770.120
## 3561	17173	3755.650
## 892	13523	3755.380
## 3369	16904	3754.270
## 68	12429	3750.400
## 3607	17238	3744.650
## 267	12668	3743.180
## 2810	16145	3741.980
## 1435	14282	3729.340
## 2567	15808	3724.770
## 125	12502	3723.870
## 557	13069	3717.820
## 701	13266	3717.670
## 1495	14364	3717.350
## 2883	16240	3693.810
## 205	12597	3683.130
## 249	12647	3669.920
## 2894	16253	3665.620
## 4029	17819	3661.070
## 168	12553	3652.250
## 4217	18079	3651.970
## 2597	15845	3650.870
## 3222	16712	3645.430
## 3029	16440	3640.670
## 2243	15379	3631.890
## 787	13381	3626.810
## 3122	16570	3622.950

## 748	13327	3617.570
## 2182	15296	3610.310
## 606	13137	3605.080
## 2885	16242	3598.260
## 566	13082	3595.480
## 1328	14132	3580.130
## 57	12417	3578.800
## 3580	17203	3563.850
## 2321	15484	3563.110
## 816	13426	3550.700
## 21	12370	3545.690
## 1598	14503	3543.260
## 2367	15544	3542.510
## 1260	14040	3542.190
## 3785	17491	3541.920
## 3818	17528	3540.100
## 909	13552	3539.530
## 753	13334	3536.820
## 3552	17160	3518.030
## 1197	13953	3515.680
## 2798	16131	3506.540
## 2335	15505	3497.140
## 889	13520	3487.750
## 3044	16458	3482.740
## 1893	14907	3478.850
## 1513	14395	3471.910
## 3599	17230	3466.670
## 829	13448	3465.670
## 3851	17576	3457.780
## 3988	17758	3456.700
## 2266	15410	3450.840
## 2715	16019	3450.240
## 901	13536	3448.290
## 2056	15129	3447.400
## 2041	15113	3439.410
## 2395	15581	3429.970
## 2680	15974	3429.550
## 1393	14221	3427.850
## 2968	16360	3411.690
## 1227	13993	3409.660
## 2686	15981	3408.480
## 825	13437	3408.060
## 3920	17669	3406.720
## 1115	13842	3385.620
## 652	13198	3384.090
## 2131	15228	3376.960
## 3966	17725	3371.130
## 518	13014	3365.430
## 2707	16011	3362.710
## 616	13148	3348.480

## 519	13015	3346.280
## 245	12643	3344.640
## 2492	15708	3329.720
## 2469	15676	3324.090
## 203	12594	3320.220
## 3310	16818	3317.970
## 1398	14227	3315.710
## 3112	16556	3313.790
## 783	13373	3312.250
## 1843	14841	3295.760
## 3568	17183	3286.910
## 110	12480	3281.630
## 48	12406	3280.750
## 3227	16717	3278.360
## 3964	17723	3276.400
## 1746	14702	3250.640
## 1196	13952	3246.091
## 2535	15764	3245.470
## 3476	17050	3228.840
## 2426	15622	3224.530
## 1144	13880	3219.770
## 219	12613	3218.980
## 225	12619	3214.810
## 2291	15443	3212.160
## 2778	16107	3204.160
## 3591	17220	3198.250
## 1134	13868	3192.540
## 3934	17685	3191.530
## 1056	13758	3190.550
## 1845	14844	3189.810
## 1509	14388	3172.040
## 3324	16837	3167.730
## 703	13268	3167.640
## 2732	16041	3166.400
## 4060	17863	3160.000
## 92	12456	3153.890
## 1337	14145	3148.200
## 2433	15632	3147.310
## 2003	15065	3135.980
## 3600	17231	3127.820
## 1000	13685	3119.440
## 1359	14175	3108.060
## 3923	17672	3106.620
## 1135	13869	3104.950
## 1043	13742	3102.420
## 604	13135	3096.000
## 3482	17059	3095.040
## 1404	14235	3093.860
## 1303	14099	3092.970
## 2325	15491	3090.850

## 1420	14257	3087.270
## 2942	16326	3085.960
## 774	13362	3085.490
## 3370	16905	3085.480
## 2698	15998	3084.170
## 541	13047	3079.100
## 443	12910	3075.040
## 1647	14565	3073.770
## 4362	18272	3064.780
## 2869	16218	3054.870
## 3397	16940	3049.880
## 1560	14456	3047.630
## 3205	16686	3043.480
## 3147	16607	3038.670
## 3219	16709	3029.870
## 4018	17799	3026.080
## 2818	16156	3024.620
## 962	13631	3021.770
## 4228	18094	3017.300
## 3198	16678	3013.830
## 206	12598	3002.680
## 2608	15861	3000.360
## 40	12395	2998.280
## 1455	14307	2995.720
## 269	12670	2986.150
## 447	12916	2982.350
## 2476	15687	2981.500
## 2602	15854	2974.650
## 3072	16497	2965.690
## 2343	15514	2963.190
## 3913	17659	2954.750
## 1697	14639	2952.340
## 3502	17084	2949.750
## 1338	14146	2949.570
## 336	12754	2949.120
## 2993	16393	2941.050
## 3754	17444	2940.040
## 1864	14868	2939.640
## 1253	14032	2929.840
## 1619	14530	2925.910
## 3803	17512	2920.040
## 440	12906	2919.810
## 832	13451	2916.450
## 1631	14543	2916.170
## 77	12438	2906.850
## 4107	17924	2894.330
## 4265	18144	2888.750
## 2466	15673	2881.020
## 1418	14251	2879.700
## 3167	16633	2878.150

## 1235	14005	2874.720
## 1163	13901	2867.200
## 2431	15628	2865.640
## 281	12685	2863.080
## 4266	18145	2861.550
## 1449	14299	2855.350
## 103	12473	2848.230
## 50	12408	2842.570
## 1623	14535	2841.090
## 1753	14711	2838.200
## 1850	14852	2836.690
## 3866	17596	2827.930
## 636	13174	2817.030
## 2688	15984	2816.970
## 10	12356	2811.430
## 2759	16081	2806.900
## 1652	14572	2803.690
## 340	12758	2791.590
## 3978	17739	2786.050
## 3388	16928	2781.500
## 35	12388	2780.660
## 1314	14112	2774.170
## 1064	13769	2771.870
## 3900	17644	2768.980
## 2227	15356	2766.500
## 1037	13735	2766.180
## 675	13230	2763.410
## 3345	16871	2761.490
## 2042	15114	2760.560
## 3266	16764	2758.250
## 1688	14626	2757.070
## 2695	15993	2756.820
## 2932	16316	2755.560
## 187	12578	2753.360
## 1136	13870	2751.250
## 1852	14854	2749.890
## 3795	17504	2745.280
## 1890	14903	2744.480
## 3586	17213	2741.080
## 1322	14125	2740.430
## 1320	14121	2740.300
## 2700	16003	2735.370
## 30	12380	2720.560
## 4332	18230	2716.600
## 395	12840	2714.270
## 717	13285	2709.120
## 979	13654	2707.330
## 1208	13971	2702.220
## 4231	18097	2692.850
## 1309	14107	2688.480

## 3710	17386	2686.420
## 1768	14732	2686.340
## 2556	15796	2666.610
## 1755	14713	2664.260
## 14	12360	2662.060
## 1547	14439	2661.240
## 3490	17069	2655.220
## 1122	13851	2651.460
## 2202	15321	2650.730
## 2483	15696	2644.460
## 1085	13804	2635.790
## 2465	15671	2635.490
## 3721	17402	2633.850
## 4215	18077	2633.010
## 1065	13771	2631.700
## 3156	16618	2630.640
## 310	12721	2628.980
## 2525	15752	2628.930
## 4138	17965	2622.570
## 4313	18210	2621.380
## 1424	14262	2618.230
## 298	12708	2616.320
## 231	12625	2614.320
## 391	12836	2612.860
## 3677	17346	2611.580
## 2895	16255	2609.300
## 315	12726	2609.100
## 2884	16241	2607.870
## 1522	14408	2606.530
## 814	13422	2601.550
## 972	13644	2597.520
## 3382	16919	2596.450
## 4354	18260	2595.000
## 2546	15782	2593.940
## 1218	13983	2590.460
## 1158	13895	2588.120
## 523	13021	2584.400
## 142	12520	2582.510
## 208	12600	2581.040
## 1166	13911	2580.910
## 2322	15485	2575.000
## 2348	15521	2574.650
## 3910	17655	2571.740
## 1976	15033	2571.020
## 2927	16308	2560.000
## 1515	14397	2556.680
## 2388	15572	2552.860
## 605	13136	2545.380
## 760	13344	2543.720
## 1727	14676	2543.240

## 1471	14334	2539.460
## 1147	13883	2538.750
## 4214	18075	2538.720
## 1412	14243	2535.880
## 846	13471	2531.580
## 3375	16912	2528.670
## 3658	17317	2524.020
## 2144	15245	2515.840
## 3968	17728	2515.680
## 3656	17314	2514.760
## 3945	17700	2508.890
## 4343	18245	2507.560
## 3758	17449	2504.860
## 1007	13695	2504.130
## 1212	13975	2503.230
## 3058	16477	2494.460
## 1633	14546	2487.020
## 1745	14701	2486.220
## 2166	15271	2485.820
## 445	12913	2483.630
## 3220	16710	2483.040
## 877	13507	2479.160
## 91	12455	2466.860
## 3555	17164	2466.400
## 139	12517	2464.890
## 3533	17131	2463.170
## 1073	13784	2462.790
## 2653	15932	2461.850
## 3932	17682	2459.330
## 1460	14315	2456.980
## 1844	14842	2456.800
## 1714	14659	2456.530
## 2524	15750	2451.230
## 1352	14163	2445.910
## 934	13588	2445.120
## 1193	13949	2427.320
## 1793	14766	2423.070
## 2414	15606	2422.640
## 983	13658	2421.470
## 2020	15089	2420.840
## 2808	16143	2419.840
## 41	12397	2409.900
## 3860	17589	2404.170
## 2685	15980	2398.860
## 610	13141	2385.800
## 3492	17071	2385.480
## 3819	17530	2385.000
## 1641	14554	2381.040
## 3963	17722	2380.640
## 4205	18065	2380.080

## 1907	14930	2372.860
## 1028	13722	2369.160
## 1588	14493	2362.840
## 3893	17634	2361.970
## 2238	15370	2360.550
## 1251	14030	2360.090
## 1548	14440	2357.680
## 1597	14502	2351.020
## 2064	15140	2350.000
## 2354	15527	2348.820
## 1165	13908	2347.050
## 4353	18259	2338.600
## 3748	17434	2333.420
## 112	12483	2327.130
## 1408	14239	2323.500
## 1456	14309	2319.680
## 2528	15755	2318.880
## 1228	13994	2313.140
## 795	13394	2312.800
## 4041	17838	2312.700
## 1442	14290	2307.450
## 2177	15288	2306.520
## 2548	15785	2303.750
## 3584	17211	2299.670
## 2034	15105	2298.930
## 2165	15270	2298.200
## 4129	17954	2295.370
## 1012	13704	2295.310
## 2488	15704	2293.620
## 221	12615	2291.190
## 3980	17744	2291.080
## 3655	17313	2288.130
## 280	12684	2283.630
## 3571	17188	2275.580
## 353	12782	2273.320
## 3996	17768	2273.180
## 1568	14466	2272.400
## 3242	16735	2269.210
## 3106	16550	2266.250
## 4352	18257	2265.380
## 1010	13700	2265.120
## 895	13527	2263.760
## 2860	16209	2262.620
## 1542	14432	2255.510
## 2135	15235	2247.510
## 3273	16771	2246.810
## 3283	16782	2242.250
## 2460	15665	2242.010
## 2174	15281	2239.950
## 2919	16293	2236.740

## 1744	14700	2235.300
## 4342	18242	2232.490
## 1835	14825	2226.910
## 295	12704	2220.840
## 421	12876	2218.020
## 3862	17591	2215.020
## 2240	15373	2213.110
## 3752	17442	2210.260
## 255	12653	2209.850
## 1383	14211	2208.300
## 2557	15797	2207.400
## 589	13115	2205.630
## 337	12755	2203.200
## 1108	13831	2202.990
## 996	13680	2202.310
## 1397	14226	2201.640
## 3942	17696	2201.050
## 2051	15123	2199.310
## 1799	14776	2195.580
## 3247	16743	2191.840
## 777	13365	2191.220
## 1129	13862	2187.310
## 2092	15179	2186.200
## 2254	15394	2183.540
## 3165	16628	2183.040
## 2502	15722	2181.210
## 1823	14808	2175.370
## 1644	14560	2174.180
## 2755	16076	2173.530
## 2570	15811	2171.320
## 1477	14341	2166.380
## 408	12856	2162.680
## 3042	16456	2158.370
## 461	12935	2156.450
## 1054	13755	2154.680
## 669	13224	2150.850
## 3417	16966	2148.470
## 3629	17272	2144.530
## 237	12633	2140.630
## 2744	16057	2140.220
## 739	13317	2140.070
## 1836	14828	2139.760
## 2984	16379	2131.900
## 3720	17400	2129.960
## 442	12909	2128.830
## 1493	14360	2128.230
## 3005	16407	2126.930
## 1997	15058	2124.990
## 4202	18061	2119.410
## 963	13632	2117.020

## 4168	18008	2116.190
## 1737	14691	2114.330
## 1521	14407	2111.080
## 886	13517	2109.070
## 700	13265	2107.660
## 4287	18173	2106.840
## 1564	14461	2103.060
## 1608	14515	2102.090
## 173	12560	2101.390
## 2574	15815	2100.600
## 3574	17191	2095.130
## 4371	18283	2094.880
## 923	13571	2092.320
## 723	13297	2089.850
## 124	12501	2089.680
## 1824	14810	2087.880
## 4193	18044	2085.650
## 3408	16954	2085.080
## 2587	15834	2084.900
## 1454	14306	2083.420
## 4227	18093	2083.420
## 1740	14696	2070.970
## 1580	14482	2068.150
## 1381	14209	2067.130
## 4333	18231	2066.170
## 456	12928	2062.700
## 2913	16281	2062.060
## 4058	17861	2059.200
## 4341	18241	2058.090
## 216	12610	2057.990
## 140	12518	2056.890
## 597	13126	2056.290
## 3918	17667	2055.510
## 472	12948	2053.700
## 3504	17086	2050.080
## 3887	17625	2047.000
## 3867	17597	2044.370
## 1401	14232	2043.930
## 831	13450	2043.720
## 1698	14640	2042.150
## 3506	17090	2041.850
## 4046	17846	2033.100
## 1232	14001	2030.330
## 3006	16409	2028.880
## 2966	16358	2024.950
## 1632	14544	2024.450
## 3348	16875	2023.470
## 4209	18069	2021.820
## 2214	15341	2020.520
## 4321	18219	2019.770

## 1367	14188	2018.910
## 1601	14506	2012.170
## 2358	15531	2007.440
## 2239	15372	2007.400
## 2770	16098	2005.630
## 1766	14730	2005.060
## 3500	17082	2003.850
## 3257	16754	2002.400
## 730	13305	2000.860
## 4298	18188	1998.490
## 3213	16698	1998.000
## 961	13630	1995.680
## 4032	17827	1995.460
## 3876	17612	1992.760
## 3930	17679	1992.110
## 3505	17088	1991.010
## 939	13593	1990.280
## 866	13495	1990.120
## 4120	17940	1983.580
## 194	12585	1982.810
## 4310	18204	1979.300
## 936	13590	1976.120
## 2327	15493	1967.250
## 1565	14462	1965.900
## 4012	17790	1965.550
## 3589	17218	1960.720
## 2951	16341	1959.380
## 1593	14498	1957.320
## 3836	17554	1952.450
## 1709	14653	1947.550
## 3669	17337	1944.320
## 1531	14418	1937.250
## 1571	14472	1936.840
## 1942	14978	1931.420
## 1710	14655	1930.150
## 3725	17406	1928.720
## 3784	17490	1926.880
## 1389	14217	1925.360
## 149	12528	1922.280
## 687	13246	1922.100
## 3427	16983	1920.200
## 272	12674	1919.310
## 93	12457	1917.780
## 2346	15518	1911.890
## 1437	14285	1910.010
## 1523	14409	1908.250
## 3019	16426	1908.250
## 3597	17228	1906.090
## 2815	16150	1906.070
## 2575	15819	1905.450

## 1417	14250	1904.050
## 3396	16938	1903.130
## 1382	14210	1900.890
## 342	12762	1898.520
## 3398	16942	1894.110
## 193	12584	1893.950
## 4066	17870	1889.400
## 1910	14934	1888.840
## 22	12371	1887.960
## 2440	15641	1887.200
## 405	12853	1881.700
## 3771	17463	1881.360
## 2828	16170	1880.420
## 2797	16128	1880.220
## 3642	17293	1875.110
## 3430	16986	1873.200
## 1965	15021	1872.280
## 2078	15157	1869.500
## 2235	15367	1867.690
## 1614	14524	1867.680
## 4009	17787	1865.190
## 3977	17738	1863.350
## 2224	15351	1862.140
## 1877	14887	1862.000
## 1217	13982	1861.110
## 1154	13890	1860.860
## 3737	17422	1853.130
## 62	12423	1849.110
## 813	13421	1848.980
## 4293	18180	1843.750
## 3775	17469	1843.060
## 474	12950	1843.000
## 2573	15814	1842.730
## 3449	17015	1842.560
## 2773	16102	1842.140
## 3041	16455	1841.180
## 482	12963	1841.030
## 32	12383	1839.310
## 1388	14216	1839.300
## 3809	17519	1839.070
## 1562	14459	1837.920
## 4372	18287	1837.280
## 2816	16152	1829.040
## 2109	15203	1827.800
## 4250	18122	1826.210
## 2817	16153	1824.230
## 2827	16169	1822.970
## 2852	16201	1821.520
## 1621	14533	1812.620
## 3056	16474	1811.470

## 1030	13725	1809.810
## 976	13650	1809.340
## 3424	16979	1809.050
## 542	13048	1805.910
## 31	12381	1803.960
## 1453	14305	1803.760
## 2571	15812	1801.140
## 2891	16249	1800.070
## 915	13562	1799.330
## 651	13196	1797.780
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## 3	12348	1797.240
## 4336	18235	1796.480
## 4292	18179	1793.170
## 3903	17648	1789.550
## 3915	17663	1788.270
## 1140	13875	1786.790
## 880	13510	1785.160
## 1677	14608	1785.150
## 1911	14935	1784.710
## 3889	17629	1784.120
## 3950	17705	1781.120
## 2156	15260	1780.770
## 2985	16380	1780.590
## 1387	14215	1777.920
## 3508	17092	1777.780
## 853	13481	1776.810
## 3327	16841	1774.620
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## 1508	14387	1770.560
## 3201	16681	1770.340
## 2611	15864	1769.780
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## 3254	16751	1764.720
## 4068	17873	1764.360
## 63	12424	1760.960
## 380	12823	1759.500
## 2123	15220	1758.920
## 4	12349	1757.550
## 247	12645	1755.380
## 1089	13808	1747.660
## 145	12523	1745.570
## 2005	15067	1744.760
## 2467	15674	1744.020
## 603	13134	1740.630
## 1669	14595	1740.600
## 4112	17930	1740.480
## 3683	17353	1740.000
## 3986	17754	1739.920

## 2141	15241	1738.590
## 836	13456	1737.820
## 3765	17457	1737.700
## 1725	14673	1736.400
## 3469	17043	1735.180
## 1991	15050	1727.170
## 622	13157	1721.570
## 3947	17702	1719.720
## 2163	15267	1717.360
## 4026	17813	1714.600
## 47	12405	1710.390
## 574	13094	1708.860
## 2663	15947	1708.240
## 49	12407	1708.120
## 3553	17162	1707.210
## 3367	16902	1706.880
## 3288	16791	1706.280
## 2666	15950	1705.260
## 3634	17282	1703.410
## 2703	16007	1701.940
## 1103	13824	1698.940
## 1839	14834	1698.350
## 3276	16775	1695.660
## 344	12764	1693.880
## 3306	16813	1692.980
## 3194	16671	1692.270
## 1061	13763	1689.460
## 238	12635	1689.180
## 2140	15240	1685.570
## 2244	15380	1682.360
## 1173	13924	1682.080
## 398	12843	1680.760
## 3543	17147	1679.640
## 1413	14245	1677.480
## 3170	16638	1676.470
## 617	13149	1676.060
## 3911	17656	1674.690
## 3575	17193	1674.460
## 974	13647	1670.220
## 2785	16115	1667.970
## 444	12912	1662.300
## 2118	15214	1661.440
## 1968	15024	1661.330
## 2209	15332	1661.060
## 1263	14045	1659.750
## 928	13577	1658.300
## 2370	15549	1655.760
## 3221	16711	1651.030
## 2581	15826	1649.360
## 3760	17451	1648.950

## 642	13184	1648.790
## 1049	13750	1647.260
## 627	13162	1644.990
## 1952	15002	1641.760
## 3635	17284	1641.680
## 2582	15827	1641.480
## 1841	14837	1641.200
## 42	12398	1635.660
## 2669	15953	1634.530
## 1353	14164	1631.770
## 2996	16398	1631.150
## 27	12377	1628.120
## 3084	16515	1627.130
## 1787	14759	1625.970
## 3431	16987	1625.050
## 815	13425	1624.210
## 2088	15172	1624.050
## 959	13627	1624.020
## 150	12530	1623.630
## 3924	17673	1622.220
## 3514	17101	1621.730
## 1362	14178	1620.930
## 1913	14937	1617.630
## 1473	14336	1614.910
## 4278	18161	1612.790
## 2050	15122	1612.130
## 1458	14312	1611.590
## 952	13614	1610.460
## 1901	14918	1610.150
## 268	12669	1607.730
## 415	12868	1607.060
## 2553	15791	1604.440
## 354	12783	1603.870
## 1653	14573	1603.720
## 3050	16466	1603.460
## 3435	16992	1601.860
## 4033	17828	1599.970
## 1663	14587	1598.240
## 1759	14719	1592.180
## 1935	14970	1592.060
## 1121	13850	1586.810
## 2945	16332	1583.200
## 38	12393	1582.600
## 3358	16889	1578.670
## 964	13634	1575.160
## 4291	18178	1573.410
## 2419	15611	1568.390
## 2040	15111	1567.480
## 3071	16496	1562.220
## 1095	13814	1562.120

## 4339	18239	1561.610
## 4040	17837	1560.530
## 3197	16676	1558.720
## 736	13313	1555.320
## 3503	17085	1555.050
## 1258	14038	1554.480
## 2977	16369	1553.660
## 2456	15660	1552.010
## 984	13659	1550.850
## 2045	15117	1550.130
## 412	12865	1548.070
## 1748	14704	1546.910
## 6	12352	1545.410
## 1549	14441	1545.140
## 1550	14442	1544.620
## 2486	15701	1542.140
## 2973	16365	1540.420
## 644	13186	1539.690
## 798	13397	1539.180
## 1120	13849	1537.950
## 422	12877	1535.770
## 3551	17159	1534.730
## 2915	16283	1531.510
## 341	12759	1531.440
## 1463	14321	1530.750
## 1649	14567	1524.460
## 2424	15620	1524.400
## 584	13107	1524.070
## 2887	16244	1522.750
## 3027	16434	1522.250
## 2750	16066	1521.870
## 2638	15906	1521.790
## 1062	13764	1521.760
## 3287	16790	1520.120
## 3351	16880	1519.080
## 662	13213	1518.430
## 376	12818	1517.880
## 2359	15532	1517.080
## 3252	16748	1515.900
## 2252	15392	1515.730
## 2740	16053	1511.950
## 4162	17997	1511.300
## 3374	16910	1510.060
## 2161	15265	1506.120
## 2429	15625	1504.560
## 463	12937	1504.270
## 3545	17152	1503.500
## 2357	15530	1502.350
## 3264	16762	1501.380
## 3847	17571	1498.510

## 2912	16279	1496.680
## 742	13320	1491.700
## 2643	15916	1491.240
## 1996	15057	1489.500
## 1929	14963	1487.800
## 3442	17002	1487.780
## 3835	17553	1487.600
## 2995	16395	1486.900
## 1870	14878	1485.540
## 1528	14414	1485.130
## 3258	16755	1484.630
## 1786	14758	1484.060
## 4175	18016	1483.560
## 2712	16016	1483.310
## 2279	15427	1483.140
## 3861	17590	1479.220
## 2687	15983	1475.020
## 1414	14246	1474.060
## 2957	16348	1469.450
## 382	12826	1468.120
## 1004	13692	1466.870
## 2315	15473	1465.200
## 426	12882	1463.040
## 1629	14541	1461.650
## 2967	16359	1460.370
## 2745	16059	1459.860
## 733	13309	1456.790
## 587	13110	1452.870
## 2691	15987	1451.280
## 1399	14229	1450.600
## 1869	14875	1448.720
## 1402	14233	1447.510
## 1665	14591	1447.140
## 3309	16817	1446.950
## 3493	17073	1446.090
## 839	13461	1445.000
## 851	13477	1441.530
## 2317	15478	1441.420
## 2606	15858	1438.850
## 1519	14404	1434.720
## 1023	13717	1432.260
## 1648	14566	1432.000
## 849	13475	1431.780
## 3563	17175	1430.940
## 2278	15426	1429.900
## 2774	16103	1429.640
## 1255	14035	1428.020
## 3437	16996	1427.460
## 1518	14403	1426.310
## 2906	16271	1423.290

## 1774	14740	1423.210
## 3486	17063	1421.590
## 3076	16503	1421.430
## 3638	17288	1419.730
## 2055	15128	1419.540
## 2292	15444	1418.260
## 4244	18116	1418.030
## 1706	14649	1417.290
## 2708	16012	1415.290
## 1888	14901	1414.990
## 3443	17004	1412.940
## 2137	15237	1412.320
## 2994	16394	1412.060
## 2035	15106	1407.730
## 471	12947	1407.290
## 2831	16173	1406.570
## 3501	17083	1405.780
## 1551	14443	1400.880
## 1775	14741	1400.340
## 1243	14019	1398.960
## 4308	18202	1396.990
## 4053	17856	1393.790
## 3684	17354	1393.060
## 1992	15051	1391.610
## 807	13414	1390.500
## 885	13516	1389.410
## 3101	16539	1388.810
## 2299	15453	1388.370
## 2060	15134	1387.990
## 3653	17311	1384.850
## 2632	15898	1384.680
## 924	13572	1384.250
## 3048	16463	1383.700
## 1229	13995	1383.490
## 3927	17676	1383.270
## 476	12952	1382.840
## 1317	14116	1382.740
## 3235	16726	1382.020
## 624	13159	1379.750
## 1315	14113	1377.920
## 2385	15569	1375.710
## 1543	14434	1372.800
## 3192	16669	1370.870
## 1602	14507	1368.180
## 732	13308	1367.610
## 1886	14897	1366.380
## 2025	15095	1364.700
## 2991	16389	1362.270
## 676	13232	1357.600
## 4281	18167	1355.510

## 3480	17054	1353.830
## 1094	13813	1353.410
## 3581	17204	1352.910
## 2044	15116	1352.750
## 2888	16245	1352.360
## 1856	14859	1352.040
## 2757	16079	1352.000
## 347	12770	1351.450
## 349	12775	1351.240
## 430	12886	1351.090
## 3695	17368	1349.520
## 248	12646	1346.970
## 2267	15411	1346.380
## 1344	14154	1345.620
## 2405	15596	1343.340
## 3698	17372	1342.680
## 2933	16317	1341.650
## 2735	16045	1340.700
## 1044	13743	1340.150
## 2258	15398	1339.630
## 2512	15734	1339.450
## 226	12620	1339.410
## 2781	16110	1337.480
## 3884	17621	1336.100
## 2473	15680	1333.680
## 4114	17932	1331.570
## 273	12676	1331.390
## 2233	15365	1330.450
## 3068	16493	1329.660
## 2920	16295	1328.550
## 1998	15059	1325.820
## 797	13396	1325.290
## 2978	16370	1320.560
## 2381	15563	1319.690
## 2760	16083	1317.620
## 147	12526	1316.660
## 1903	14921	1316.070
## 1306	14102	1314.730
## 3049	16464	1314.680
## 1938	14973	1314.450
## 4290	18177	1314.170
## 2069	15146	1313.660
## 2731	16040	1313.550
## 18	12364	1313.100
## 138	12516	1312.060
## 1779	14748	1311.790
## 516	13012	1311.620
## 1854	14856	1311.380
## 871	13501	1310.470
## 631	13168	1310.140

## 749	13328	1308.480
## 1576	14477	1307.810
## 1283	14071	1307.410
## 185	12576	1306.980
## 3248	16744	1304.760
## 4103	17919	1304.040
## 2572	15813	1303.910
## 97	12463	1303.630
## 449	12919	1301.440
## 2328	15494	1299.230
## 114	12488	1298.660
## 23	12372	1298.040
## 4135	17961	1296.440
## 3389	16929	1295.390
## 2872	16224	1295.300
## 2789	16120	1294.140
## 2037	15108	1291.750
## 1265	14047	1290.010
## 1772	14738	1289.940
## 406	12854	1289.150
## 3123	16571	1285.220
## 3922	17671	1284.080
## 1447	14297	1284.060
## 2062	15136	1282.450
## 3365	16899	1281.560
## 1143	13878	1281.530
## 902	13538	1280.850
## 1427	14267	1279.090
## 3209	16692	1276.000
## 3452	17019	1272.610
## 39	12394	1272.480
## 1812	14794	1272.110
## 235	12630	1270.880
## 1722	14669	1269.990
## 863	13492	1269.840
## 821	13431	1269.100
## 2107	15199	1268.700
## 1604	14511	1267.410
## 3550	17158	1266.970
## 1223	13989	1266.080
## 1900	14916	1264.840
## 3405	16951	1262.750
## 1957	15009	1261.780
## 3206	16688	1260.860
## 3328	16842	1260.440
## 1308	14105	1260.330
## 2329	15497	1259.700
## 3712	17388	1259.560
## 1719	14665	1258.380
## 130	12507	1258.060

## 3730	17412	1258.060
## 3681	17350	1256.190
## 1119	13848	1255.000
## 3623	17262	1253.360
## 3464	17037	1253.220
## 4020	17802	1251.840
## 1742	14698	1250.760
## 618	13151	1250.370
## 3780	17481	1249.340
## 1505	14383	1247.690
## 284	12689	1247.610
## 528	13029	1247.500
## 1953	15004	1246.320
## 2772	16101	1245.960
## 3096	16531	1244.590
## 3892	17633	1242.340
## 3859	17588	1240.200
## 1128	13860	1240.000
## 1882	14893	1237.850
## 1732	14684	1236.280
## 2242	15376	1233.360
## 2641	15910	1232.180
## 4218	18080	1231.500
## 1180	13931	1230.930
## 1540	14428	1230.140
## 1887	14898	1228.320
## 1898	14913	1227.430
## 3857	17584	1227.300
## 53	12412	1226.880
## 2130	15227	1219.400
## 862	13491	1215.820
## 496	12985	1215.620
## 4001	17774	1215.460
## 3728	17410	1214.720
## 1169	13918	1212.840
## 98	12464	1212.050
## 4357	18263	1211.080
## 2594	15841	1209.100
## 4285	18171	1208.510
## 657	13208	1205.900
## 546	13055	1201.960
## 3291	16794	1201.510
## 3294	16800	1201.490
## 623	13158	1201.060
## 3659	17320	1200.620
## 4019	17800	1199.010
## 2413	15605	1198.230
## 505	12997	1197.940
## 660	13211	1197.420
## 3962	17720	1195.940

## 485	12967	1194.750
## 2068	15145	1194.730
## 217	12611	1193.320
## 1279	14064	1188.320
## 3151	16612	1187.660
## 1051	13752	1186.280
## 1584	14487	1183.580
## 2432	15630	1180.400
## 3481	17058	1179.890
## 3404	16950	1178.560
## 3908	17653	1175.880
## 242	12640	1174.580
## 2190	15306	1174.350
## 3171	16639	1169.380
## 12	12358	1168.060
## 1777	14745	1167.160
## 3180	16653	1166.920
## 1855	14857	1165.650
## 1771	14737	1164.550
## 1423	14261	1163.450
## 1553	14447	1163.230
## 3403	16949	1161.270
## 3679	17348	1159.520
## 2425	15621	1158.770
## 1762	14723	1158.300
## 429	12885	1158.270
## 951	13611	1158.200
## 1045	13744	1156.360
## 2841	16184	1155.540
## 2747	16062	1153.620
## 258	12657	1152.060
## 2733	16042	1147.370
## 869	13499	1146.960
## 3796	17505	1145.840
## 3268	16766	1145.600
## 2569	15810	1145.430
## 346	12769	1143.600
## 3998	17770	1143.270
## 162	12546	1141.500
## 4252	18125	1141.340
## 2905	16270	1141.240
## 751	13330	1140.930
## 1099	13819	1140.350
## 2019	15088	1140.270
## 2830	16172	1140.210
## 3536	17135	1139.730
## 120	12494	1139.350
## 3791	17500	1138.000
## 870	13500	1136.770
## 3609	17242	1135.040

## 4282	18168	1133.640
## 3433	16989	1133.250
## 3858	17585	1133.070
## 1066	13772	1132.130
## 2331	15500	1131.560
## 1146	13882	1131.280
## 300	12710	1130.570
## 1834	14824	1127.710
## 215	12609	1126.850
## 3776	17470	1125.070
## 592	13118	1125.000
## 3169	16637	1124.590
## 96	12462	1124.010
## 1326	14129	1123.860
## 2286	15436	1122.530
## 858	13486	1122.410
## 3300	16807	1121.590
## 2513	15737	1121.210
## 3648	17302	1119.930
## 4086	17894	1119.810
## 552	13064	1119.490
## 2763	16086	1119.310
## 397	12842	1118.990
## 2497	15716	1118.810
## 4010	17788	1117.900
## 937	13591	1117.130
## 1936	14971	1116.570
## 950	13610	1115.430
## 2737	16049	1111.790
## 1350	14161	1110.520
## 1828	14817	1110.340
## 2007	15069	1109.530
## 43	12399	1108.650
## 2509	15730	1108.380
## 2654	15933	1107.460
## 3842	17562	1107.380
## 3320	16833	1106.530
## 409	12857	1106.400
## 828	13447	1104.230
## 3874	17609	1103.920
## 3473	17047	1100.900
## 2959	16350	1100.470
## 2684	15978	1098.780
## 582	13104	1098.480
## 4139	17966	1098.430
## 1750	14708	1096.670
## 2873	16225	1096.320
## 978	13652	1095.080
## 2416	15608	1093.680
## 890	13521	1093.650

## 850	13476	1092.770
## 2324	15489	1090.030
## 153	12534	1089.180
## 1776	14744	1088.530
## 3510	17095	1088.200
## 4299	18189	1084.340
## 843	13467	1083.710
## 734	13310	1083.630
## 2410	15602	1083.630
## 1645	14561	1080.760
## 2851	16200	1080.620
## 1031	13726	1079.660
## 8	12354	1079.400
## 1486	14352	1078.960
## 3425	16980	1078.960
## 3117	16563	1077.740
## 2494	15712	1072.360
## 2519	15745	1071.240
## 965	13635	1071.030
## 3812	17522	1070.710
## 1059	13761	1070.650
## 1384	14212	1070.480
## 1917	14948	1066.570
## 3467	17041	1065.770
## 3631	17277	1065.350
## 3637	17287	1064.110
## 373	12815	1063.460
## 1525	14411	1063.000
## 2865	16214	1062.750
## 275	12679	1058.670
## 1567	14465	1058.620
## 1532	14419	1058.060
## 1123	13853	1056.940
## 2138	15238	1056.540
## 2264	15407	1056.440
## 1607	14514	1055.350
## 2683	15977	1054.730
## 3237	16728	1054.670
## 1021	13715	1053.940
## 305	12716	1053.490
## 1659	14583	1052.550
## 1971	15027	1051.950
## 402	12849	1050.890
## 1396	14224	1050.120
## 1288	14078	1049.370
## 2307	15464	1048.850
## 2534	15763	1048.670
## 714	13282	1047.840
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## 1585	14488	1047.430

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## 2697	15996	1044.780
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## 2101	15192	1044.320
## 3381	16918	1043.340
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## 3967	17727	1042.550
## 2560	15801	1042.190
## 475	12951	1042.070
## 2767	16094	1041.830
## 1025	13719	1041.680
## 1552	14446	1039.580
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## 2936	16320	1038.460
## 2833	16175	1037.590
## 2689	15985	1037.420
## 3089	16520	1036.620
## 286	12691	1035.800
## 2899	16260	1035.450
## 2087	15171	1034.500
## 969	13639	1033.340
## 4323	18221	1033.310
## 207	12599	1032.580
## 313	12724	1031.410
## 691	13253	1030.400
## 3461	17033	1030.140
## 1660	14584	1029.260
## 2210	15333	1028.560
## 3202	16682	1028.000
## 3012	16416	1026.990
## 3098	16533	1026.940
## 1200	13956	1026.420
## 1891	14904	1025.440
## 2543	15777	1021.610
## 1481	14346	1021.580
## 628	13165	1021.480
## 2592	15839	1020.740
## 785	13376	1019.760
## 1432	14276	1019.390
## 384	12828	1018.710
## 1293	14083	1018.430
## 136	12514	1017.680
## 1033	13728	1016.140
## 1133	13867	1015.290
## 4263	18142	1014.900
## 244	12642	1013.260
## 326	12739	1013.040
## 3577	17197	1013.010
## 462	12936	1012.900

## 1798	14775	1011.900
## 2876	16229	1010.600
## 2832	16174	1009.550
## 2821	16160	1009.450
## 835	13455	1007.350
## 1692	14631	1006.980
## 819	13429	1006.800
## 2207	15329	1005.500
## 182	12572	1004.720
## 2033	15104	1002.540
## 82	12446	1002.310
## 2490	15706	1001.810
## 161	12545	1000.390
## 2338	15508	1000.270
## 1386	14214	1000.230
## 4264	18143	1000.160
## 1510	14389	999.720
## 3124	16572	999.700
## 2284	15434	997.480
## 530	13032	996.520
## 1628	14540	996.260
## 3901	17646	995.660
## 3965	17724	995.650
## 3864	17594	993.180
## 2705	16009	992.710
## 3511	17096	992.680
## 775	13363	992.500
## 3531	17126	991.850
## 4128	17951	990.840
## 3662	17324	990.230
## 805	13410	988.910
## 2001	15062	987.860
## 4338	18237	987.100
## 591	13117	984.910
## 3541	17144	984.570
## 3587	17214	984.120
## 2878	16232	983.230
## 133	12510	982.570
## 2059	15133	982.420
## 1331	14138	982.380
## 2009	15071	982.070
## 2845	16188	981.860
## 3372	16907	981.650
## 2762	16085	981.510
## 159	12541	981.180
## 306	12717	980.980
## 4284	18170	980.310
## 879	13509	979.720
## 2336	15506	979.260
## 2058	15132	977.930

## 1902	14920	977.770
## 2981	16376	977.520
## 2607	15860	977.210
## 1395	14223	975.230
## 1612	14522	974.540
## 2521	15747	974.040
## 621	13155	971.760
## 3513	17100	971.740
## 3881	17618	971.580
## 2296	15449	971.220
## 2039	15110	970.250
## 2639	15907	967.450
## 3724	17405	967.220
## 165	12550	964.830
## 1908	14931	964.680
## 1372	14195	962.700
## 607	13138	962.390
## 1236	14006	962.190
## 2077	15156	961.490
## 3014	16419	959.480
## 2454	15658	958.900
## 4302	18192	957.970
## 1102	13823	957.660
## 2664	15948	955.240
## 3611	17244	954.900
## 2588	15835	954.090
## 3394	16934	950.930
## 2274	15421	950.360
## 3082	16511	950.260
## 2554	15793	948.960
## 1048	13748	948.250
## 2550	15787	948.050
## 94	12458	947.400
## 2474	15681	946.360
## 2491	15707	945.580
## 697	13261	944.100
## 377	12820	942.340
## 1285	14075	942.260
## 966	13636	941.620
## 2391	15576	940.670
## 3596	17227	939.320
## 1691	14629	939.210
## 290	12697	939.020
## 3512	17097	937.920
## 3639	17289	936.160
## 525	13026	936.150
## 2178	15289	935.100
## 1419	14256	935.060
## 3184	16657	933.620
## 980	13655	932.970

## 1620	14532	932.850
## 454	12924	929.950
## 2108	15201	927.840
## 1086	13805	924.600
## 2450	15654	922.530
## 595	13122	922.390
## 3107	16551	922.120
## 1183	13934	922.100
## 2194	15312	921.100
## 3451	17018	920.100
## 1333	14140	920.050
## 560	13075	919.610
## 379	12822	918.980
## 1241	14015	917.340
## 1754	14712	917.070
## 3605	17236	916.130
## 907	13549	916.120
## 2150	15253	915.300
## 2867	16216	914.930
## 254	12652	914.530
## 2399	15587	913.680
## 2232	15364	913.190
## 3302	16809	912.740
## 1072	13782	912.000
## 648	13192	911.940
## 3224	16714	911.530
## 1441	14289	911.260
## 4230	18096	911.150
## 765	13350	910.720
## 1002	13689	910.000
## 3834	17552	909.960
## 2340	15511	909.230
## 3661	17323	908.990
## 535	13038	908.460
## 3131	16584	908.030
## 1555	14449	907.100
## 2318	15480	905.500
## 1966	15022	905.040
## 1291	14081	904.670
## 311	12722	904.330
## 2566	15807	903.900
## 503	12994	902.220
## 3844	17566	901.210
## 4047	17848	901.200
## 4078	17886	899.610
## 1091	13810	899.510
## 3824	17537	897.620
## 3470	17044	897.430
## 2969	16361	896.660
## 4304	18194	896.000

## 2612	15865	895.130
## 2115	15211	894.410
## 2015	15079	893.660
## 348	12772	892.470
## 884	13515	891.120
## 2152	15255	890.850
## 1409	14240	890.340
## 1479	14344	889.930
## 4034	17829	889.240
## 3817	17527	888.860
## 2956	16347	887.650
## 533	13035	886.630
## 2578	15822	885.470
## 3949	17704	885.190
## 2558	15799	884.140
## 1670	14597	883.150
## 1492	14359	882.580
## 4337	18236	882.240
## 534	13037	881.070
## 2013	15076	880.850
## 985	13662	879.080
## 1334	14141	879.030
## 3970	17731	878.200
## 2449	15653	877.440
## 3445	17007	877.430
## 1796	14770	876.420
## 466	12940	876.290
## 919	13566	874.710
## 3083	16513	874.590
## 720	13294	873.740
## 401	12847	871.540
## 654	13200	870.090
## 1215	13979	869.870
## 3518	17109	869.680
## 288	12694	869.670
## 655	13203	869.460
## 1685	14623	869.350
## 3295	16801	867.830
## 2113	15208	867.620
## 1757	14715	867.380
## 2790	16121	867.110
## 1469	14332	866.310
## 3120	16567	865.600
## 2870	16221	864.860
## 3474	17048	864.320
## 276	12680	862.810
## 2903	16266	861.890
## 3904	17649	861.740
## 363	12794	860.410
## 756	13339	860.120

## 1655	14577	859.710
## 3487	17064	859.350
## 1640	14553	859.270
## 2880	16235	858.410
## 2729	16037	855.020
## 3840	17560	854.950
## 3349	16877	853.720
## 1370	14193	853.390
## 2751	16070	852.150
## 2722	16027	852.120
## 2716	16020	851.010
## 1225	13991	850.630
## 29	12379	850.290
## 3457	17027	848.590
## 302	12713	848.550
## 1687	14625	848.480
## 1118	13846	847.610
## 667	13221	847.410
## 2871	16222	846.720
## 2674	15965	845.640
## 1819	14803	845.550
## 3886	17624	843.480
## 2083	15164	843.050
## 423	12878	841.640
## 1897	14912	841.520
## 1859	14862	841.200
## 3495	17076	841.080
## 1188	13940	839.140
## 1712	14657	838.270
## 2586	15832	836.790
## 317	12728	836.330
## 3989	17759	834.990
## 1111	13835	834.570
## 4111	17929	834.500
## 3175	16644	833.780
## 2609	15862	832.880
## 287	12693	830.960
## 997	13681	827.830
## 3251	16747	826.960
## 95	12461	826.880
## 3069	16494	826.530
## 4105	17921	826.520
## 2916	16284	823.970
## 1400	14231	822.060
## 1156	13893	821.100
## 666	13220	819.290
## 3993	17764	818.820
## 3558	17169	816.880
## 3399	16943	816.730
## 3115	16560	816.510

## 2779	16108	816.100
## 2446	15649	816.000
## 2259	15399	815.770
## 1594	14499	815.320
## 713	13280	814.860
## 3045	16460	814.720
## 4204	18064	814.000
## 3494	17075	813.770
## 3143	16600	813.520
## 3159	16621	813.480
## 1534	14421	813.110
## 2442	15644	813.000
## 4152	17980	811.450
## 2352	15525	811.020
## 2910	16276	810.600
## 3161	16624	810.570
## 967	13637	810.500
## 3187	16660	810.450
## 3359	16891	809.700
## 3522	17115	806.900
## 2668	15952	806.570
## 1015	13707	806.410
## 60	12421	806.270
## 3344	16869	805.620
## 2975	16367	804.490
## 350	12778	804.230
## 61	12422	803.560
## 1178	13929	802.850
## 2825	16164	802.530
## 4358	18265	801.510
## 3299	16806	801.490
## 4095	17905	800.240
## 1026	13720	799.900
## 1574	14475	799.820
## 529	13030	799.480
## 3948	17703	798.740
## 3028	16438	798.350
## 792	13389	797.960
## 292	12701	797.710
## 754	13336	795.120
## 2693	15990	792.110
## 630	13167	791.330
## 520	13016	789.890
## 745	13323	787.850
## 2565	15806	784.580
## 2517	15743	784.460
## 3711	17387	784.110
## 2741	16054	783.900
## 4345	18248	783.020
## 3444	17006	781.780

## 3673	17341	781.360
## 1148	13884	781.300
## 2472	15679	781.280
## 931	13583	781.030
## 661	13212	780.580
## 1702	14644	780.460
## 4017	17797	780.430
## 3566	17180	780.380
## 323	12735	779.570
## 2765	16092	779.360
## 1826	14815	778.500
## 3731	17414	778.000
## 3078	16505	777.600
## 916	13563	777.530
## 64	12425	777.200
## 2225	15353	777.020
## 758	13341	775.850
## 1403	14234	775.460
## 3314	16825	775.180
## 3234	16725	775.070
## 2269	15414	774.900
## 2734	16043	773.990
## 2012	15075	773.030
## 784	13375	772.900
## 3262	16759	772.840
## 483	12965	771.910
## 3727	17409	771.850
## 1717	14662	771.170
## 234	12628	769.610
## 3061	16480	769.290
## 4330	18228	769.200
## 770	13356	768.240
## 3807	17516	768.080
## 586	13109	766.840
## 1941	14976	765.860
## 1637	14550	765.620
## 1724	14672	765.550
## 3941	17695	765.340
## 1875	14885	765.320
## 73	12434	765.190
## 2139	15239	764.340
## 3628	17268	763.640
## 3773	17466	763.280
## 4259	18136	761.830
## 2408	15599	761.740
## 2856	16205	761.380
## 1526	14412	761.330
## 2004	15066	760.590
## 3739	17425	759.170
## 2728	16036	758.920

## 2384	15568	758.290
## 3769	17461	757.460
## 3053	16470	757.440
## 1874	14883	756.640
## 4235	18104	754.640
## 1034	13730	752.600
## 3542	17146	749.780
## 1904	14923	749.100
## 3729	17411	748.940
## 2011	15074	748.870
## 2452	15656	748.500
## 2585	15831	747.760
## 3521	17114	747.220
## 2422	15618	747.031
## 2360	15533	746.920
## 2900	16261	746.830
## 1268	14050	746.360
## 1809	14790	745.060
## 3272	16770	744.900
## 768	13354	743.530
## 25	12374	742.930
## 1052	13753	741.260
## 1162	13900	740.950
## 4146	17974	740.790
## 2149	15252	740.780
## 750	13329	740.400
## 3385	16924	739.500
## 211	12603	739.200
## 1784	14756	738.960
## 490	12976	738.600
## 4151	17979	737.810
## 4274	18156	734.940
## 3462	17034	734.570
## 2811	16146	734.130
## 99	12465	733.890
## 3938	17692	733.440
## 2896	16256	732.630
## 4025	17812	732.160
## 926	13575	732.070
## 2771	16099	731.900
## 3067	16491	731.500
## 1801	14778	730.860
## 4186	18035	730.400
## 561	13077	729.270
## 1194	13950	728.560
## 3917	17666	728.160
## 679	13236	727.270
## 1273	14055	725.640
## 312	12723	725.070
## 2435	15636	724.760

## 100	12468	724.040
## 1038	13736	724.000
## 105	12475	723.380
## 2379	15561	722.740
## 2397	15584	722.610
## 3811	17521	721.960
## 1865	14869	721.950
## 2167	15272	721.940
## 781	13370	721.320
## 4203	18062	720.520
## 2718	16023	719.810
## 1363	14179	719.780
## 1763	14725	718.080
## 4076	17884	717.450
## 2168	15274	716.570
## 154	12535	716.350
## 3458	17029	716.000
## 4257	18133	715.500
## 2208	15330	714.960
## 2530	15757	714.420
## 632	13169	712.880
## 615	13147	712.800
## 3991	17761	712.780
## 808	13416	712.500
## 3898	17642	712.290
## 2603	15855	712.240
## 1013	13705	711.860
## 3565	17179	711.790
## 690	13249	711.410
## 3777	17472	710.290
## 1324	14127	709.710
## 2802	16136	709.380
## 66	12427	708.370
## 352	12781	707.720
## 89	12453	707.090
## 2972	16364	707.040
## 3816	17526	706.700
## 1871	14880	706.190
## 3353	16882	705.120
## 4115	17934	704.250
## 2805	16140	703.770
## 427	12883	703.470
## 4220	18082	703.370
## 2032	15103	703.360
## 3239	16730	702.790
## 2390	15574	702.250
## 3438	16997	702.000
## 1863	14867	701.330
## 3660	17321	700.860
## 3973	17734	700.630

## 2559	15800	699.080
## 694	13258	698.580
## 4016	17796	697.900
## 1994	15053	697.790
## 941	13596	697.040
## 3718	17397	696.410
## 54	12413	694.150
## 455	12925	694.050
## 945	13601	693.320
## 3578	17198	692.220
## 3972	17733	692.190
## 1113	13838	691.730
## 2711	16015	690.540
## 4222	18085	689.950
## 524	13023	689.900
## 4305	18196	689.130
## 3793	17502	689.100
## 1080	13799	688.860
## 1313	14111	688.600
## 1376	14201	688.040
## 2928	16309	686.670
## 259	12658	686.050
## 1237	14009	685.930
## 1925	14959	684.970
## 2791	16122	684.420
## 3070	16495	684.410
## 467	12942	683.900
## 1394	14222	683.170
## 393	12838	683.130
## 2396	15582	682.910
## 906	13548	682.410
## 4258	18135	681.910
## 2863	16212	681.190
## 52	12410	681.080
## 108	12478	680.990
## 680	13238	680.830
## 2189	15304	680.300
## 2094	15181	680.280
## 893	13524	680.180
## 3346	16872	680.020
## 3173	16642	679.830
## 1807	14788	679.440
## 949	13607	678.010
## 2463	15669	677.690
## 536	13040	676.990
## 2982	16377	676.200
## 2430	15626	675.800
## 747	13325	675.300
## 3013	16418	675.270
## 769	13355	674.700

## 3037	16449	674.690
## 841	13464	674.680
## 3983	17749	674.520
## 1195	13951	674.450
## 1599	14504	673.260
## 4249	18121	673.100
## 957	13623	672.440
## 1690	14628	671.960
## 4075	17883	671.770
## 240	12638	671.690
## 2667	15951	669.570
## 3646	17299	669.110
## 1701	14643	668.610
## 58	12418	668.580
## 2986	16383	668.360
## 1974	15031	668.140
## 4179	18022	668.110
## 2904	16268	667.650
## 1490	14356	666.940
## 2260	15400	666.700
## 1042	13741	666.330
## 4003	17777	665.860
## 3516	17105	665.780
## 1980	15038	665.590
## 2743	16056	664.850
## 1205	13963	664.540
## 2859	16208	664.260
## 2485	15700	664.030
## 1760	14720	663.810
## 682	13240	663.650
## 3738	17423	663.630
## 1374	14198	663.500
## 3770	17462	662.940
## 1557	14451	662.590
## 1674	14603	660.000
## 527	13028	659.680
## 2326	15492	659.460
## 887	13518	659.440
## 1057	13759	659.410
## 2965	16357	658.880
## 1342	14150	658.640
## 4069	17874	658.260
## 3211	16696	657.900
## 1829	14818	657.800
## 3767	17459	657.300
## 222	12616	657.250
## 2470	15677	657.230
## 543	13049	656.680
## 3218	16708	656.630
## 2105	15197	656.440

## 2796	16127	656.250
## 1883	14894	655.750
## 3275	16774	654.920
## 1707	14651	654.600
## 3719	17398	653.380
## 4271	18151	653.350
## 2710	16014	653.130
## 1262	14044	652.820
## 1635	14548	652.800
## 3813	17523	652.740
## 2970	16362	652.070
## 3241	16734	650.510
## 2387	15571	650.430
## 3052	16469	650.430
## 3420	16969	650.410
## 2028	15098	649.500
## 2111	15205	648.830
## 820	13430	648.690
## 3125	16573	648.410
## 917	13564	647.740
## 2441	15643	647.400
## 3699	17373	646.920
## 198	12589	646.680
## 2447	15651	646.300
## 3828	17545	645.960
## 1853	14855	645.650
## 1837	14829	644.650
## 3654	17312	644.300
## 2819	16157	644.240
## 1323	14126	643.630
## 218	12612	643.590
## 3024	16431	642.810
## 1244	14020	642.800
## 532	13034	642.770
## 4004	17779	642.170
## 3472	17046	642.020
## 3110	16554	641.550
## 230	12624	641.130
## 809	13417	640.830
## 740	13318	640.760
## 236	12631	640.500
## 2646	15919	639.890
## 3806	17515	639.020
## 3032	16444	638.770
## 4277	18160	638.060
## 1782	14754	638.050
## 1718	14664	637.890
## 1325	14128	637.500
## 1579	14481	636.510
## 2583	15829	636.140

## 2247	15384	635.760
## 2539	15773	635.680
## 2804	16139	635.410
## 2030	15100	635.100
## 2183	15297	635.040
## 4154	17985	634.950
## 1231	14000	633.710
## 1986	15045	633.660
## 1155	13892	632.970
## 1392	14220	632.400
## 1451	14301	632.040
## 1101	13822	632.000
## 1245	14021	631.900
## 2143	15244	631.570
## 4158	17990	630.840
## 4160	17994	629.690
## 540	13046	629.310
## 894	13525	628.780
## 1733	14687	628.380
## 2717	16022	628.280
## 791	13388	627.150
## 1972	15028	627.130
## 905	13546	626.990
## 2261	15402	626.770
## 1256	14036	626.650
## 4320	18218	626.380
## 1504	14382	626.070
## 3253	16750	623.930
## 3228	16718	623.750
## 779	13368	623.400
## 2155	15258	623.160
## 3790	17499	622.880
## 2095	15182	622.850
## 4064	17867	622.750
## 4319	18217	621.750
## 3378	16915	621.680
## 3897	17640	621.660
## 800	13402	621.230
## 2806	16141	620.400
## 266	12667	620.130
## 1618	14529	620.040
## 864	13493	618.630
## 3152	16613	618.590
## 204	12596	618.270
## 727	13301	618.090
## 1667	14593	617.990
## 867	13496	617.930
## 1501	14377	617.050
## 3031	16442	616.790
## 1174	13925	616.650

## 2929	16311	616.260
## 2119	15215	615.990
## 2701	16005	615.390
## 613	13145	614.770
## 3119	16566	614.010
## 1167	13914	613.950
## 2010	15073	612.430
## 4269	18149	612.080
## 2133	15232	612.060
## 2443	15645	612.010
## 2780	16109	611.880
## 1343	14152	611.090
## 1035	13731	610.590
## 271	12673	610.520
## 2555	15795	610.010
## 771	13357	609.950
## 1695	14636	609.850
## 2169	15275	609.190
## 1182	13933	608.790
## 2070	15147	608.650
## 308	12719	608.100
## 1478	14342	607.710
## 2389	15573	607.450
## 460	12933	606.280
## 1752	14710	606.130
## 903	13539	605.840
## 4048	17849	605.800
## 1152	13888	605.630
## 3798	17507	605.580
## 677	13233	605.120
## 912	13558	605.060
## 1726	14675	604.750
## 3916	17664	604.640
## 469	12944	604.510
## 3240	16732	603.750
## 169	12556	603.710
## 251	12649	603.710
## 2800	16134	603.690
## 297	12707	603.420
## 3622	17259	603.370
## 2203	15322	602.970
## 2234	15366	602.510
## 2926	16306	602.270
## 4082	17890	602.090
## 256	12654	601.980
## 1678	14609	601.560
## 4295	18183	600.520
## 59	12420	600.390
## 684	13243	600.070
## 4314	18211	600.070

## 418	12872	599.970
## 1892	14905	599.900
## 2445	15648	599.900
## 143	12521	599.680
## 1931	14965	599.000
## 3736	17420	598.830
## 1569	14467	598.760
## 2500	15720	598.730
## 735	13311	598.570
## 1202	13959	598.200
## 2922	16298	598.200
## 4061	17864	597.500
## 3285	16788	597.480
## 1703	14645	597.090
## 2245	15381	596.850
## 4344	18246	596.100
## 186	12577	595.400
## 3181	16654	594.970
## 3265	16763	594.900
## 1310	14108	594.160
## 448	12917	594.000
## 2290	15442	594.000
## 3099	16535	593.750
## 3525	17119	593.610
## 2786	16116	592.880
## 1092	13811	591.750
## 709	13276	590.930
## 1329	14133	590.340
## 705	13270	590.000
## 833	13452	590.000
## 1873	14882	589.700
## 4251	18123	589.440
## 2854	16203	589.150
## 3233	16723	589.150
## 2428	15624	588.130
## 3682	17351	587.150
## 135	12513	586.790
## 3689	17360	585.790
## 2125	15222	585.000
## 2987	16384	584.500
## 2753	16072	584.320
## 1247	14023	584.070
## 911	13557	584.060
## 2533	15762	583.750
## 2676	15969	582.900
## 3325	16838	582.900
## 65	12426	582.730
## 817	13427	582.600
## 4143	17970	582.590
## 4334	18232	582.470

## 289	12695	582.100
## 1738	14692	582.050
## 2537	15768	581.830
## 4229	18095	580.050
## 3371	16906	579.770
## 3540	17142	579.000
## 719	13292	578.940
## 737	13314	578.660
## 1436	14284	578.450
## 1524	14410	576.300
## 3379	16916	576.260
## 2371	15550	575.630
## 2955	16345	575.410
## 859	13487	575.400
## 1355	14167	574.840
## 355	12784	574.420
## 1464	14323	574.260
## 2188	15303	574.020
## 1360	14176	574.000
## 2270	15415	572.810
## 786	13379	572.560
## 803	13405	572.451
## 374	12816	572.200
## 3880	17616	571.200
## 2577	15821	570.960
## 1666	14592	570.460
## 3826	17540	570.400
## 3190	16667	570.130
## 209	12601	569.560
## 743	13321	567.360
## 4270	18150	566.580
## 33	12384	566.160
## 3448	17014	565.580
## 1781	14753	563.150
## 3625	17265	562.900
## 55	12414	562.410
## 1190	13946	561.570
## 538	13044	560.470
## 1431	14273	559.970
## 2909	16275	559.870
## 1516	14400	559.700
## 4192	18043	559.510
## 413	12866	559.120
## 3794	17503	558.960
## 1081	13800	558.320
## 696	13260	557.620
## 2213	15339	557.570
## 4130	17955	557.300
## 3643	17295	556.950
## 1187	13939	556.750

## 2988	16385	555.890
## 1097	13816	555.040
## 1821	14805	554.650
## 1361	14177	554.460
## 1881	14891	554.380
## 1474	14338	554.220
## 2006	15068	553.360
## 424	12879	552.570
## 17	12363	552.000
## 2197	15315	551.540
## 3925	17674	551.040
## 3641	17291	550.800
## 3604	17235	550.060
## 36	12390	549.840
## 2950	16340	549.070
## 2725	16031	548.940
## 2584	15830	547.700
## 3304	16811	547.070
## 3895	17637	547.060
## 3810	17520	546.810
## 328	12743	546.430
## 4022	17806	546.040
## 362	12793	545.480
## 497	12987	545.000
## 3057	16475	544.300
## 954	13617	544.180
## 793	13390	544.080
## 3387	16927	543.050
## 2862	16211	542.770
## 711	13278	542.730
## 2877	16230	542.030
## 3756	17447	541.530
## 3839	17557	541.460
## 4089	17897	541.100
## 1949	14997	540.980
## 1139	13874	540.450
## 3100	16536	539.020
## 1093	13812	539.000
## 1591	14496	538.810
## 2298	15452	538.730
## 1680	14618	538.590
## 2363	15539	538.460
## 2911	16278	537.830
## 3676	17345	537.740
## 1573	14474	537.710
## 1627	14539	537.480
## 2857	16206	537.060
## 1984	15043	537.000
## 3297	16804	536.990
## 172	12559	536.210

## 1157	13894	535.970
## 2807	16142	535.340
## 498	12988	535.320
## 507	13000	534.850
## 790	13385	534.570
## 3485	17062	534.470
## 822	13434	534.240
## 3753	17443	534.240
## 2529	15756	532.960
## 2580	15825	532.940
## 3217	16706	531.350
## 1426	14265	530.180
## 4276	18159	530.150
## 3393	16933	530.080
## 1233	14002	529.730
## 1566	14463	529.620
## 2842	16185	529.410
## 3891	17631	528.330
## 3885	17623	527.050
## 4349	18252	526.670
## 4080	17888	525.780
## 3640	17290	525.240
## 2628	15891	524.520
## 1027	13721	524.140
## 3664	17329	523.110
## 4176	18017	523.000
## 3956	17712	522.910
## 1867	14871	522.380
## 2072	15149	520.800
## 1868	14873	519.680
## 181	12571	519.610
## 971	13643	519.440
## 3178	16650	518.420
## 1973	15030	518.280
## 2801	16135	517.550
## 3762	17454	517.530
## 4311	18205	517.360
## 370	12811	514.850
## 2145	15246	514.150
## 3804	17513	513.200
## 4021	17805	512.310
## 3743	17429	512.120
## 1254	14034	512.020
## 2310	15467	511.880
## 191	12582	511.360
## 1849	14851	511.350
## 2451	15655	511.320
## 3116	16561	511.120
## 2941	16325	510.540
## 439	12904	509.580

## 75	12436	509.010
## 2272	15417	508.800
## 3714	17391	508.800
## 1461	14317	508.580
## 4133	17958	508.460
## 3732	17415	507.840
## 1348	14158	507.660
## 1831	14820	507.290
## 2501	15721	507.080
## 3413	16960	507.050
## 1149	13885	506.800
## 3779	17480	506.510
## 3153	16614	506.190
## 1240	14014	505.180
## 2312	15469	504.500
## 410	12863	504.200
## 501	12991	503.760
## 3890	17630	503.600
## 1955	15006	502.090
## 1131	13865	501.560
## 688	13247	501.120
## 3154	16616	500.420
## 2251	15389	500.000
## 1924	14958	499.680
## 1287	14077	499.420
## 2102	15193	499.320
## 1730	14681	498.950
## 2065	15142	498.740
## 3645	17298	498.420
## 3311	16820	497.610
## 3787	17495	497.560
## 2976	16368	497.430
## 3360	16892	496.840
## 2186	15300	496.440
## 3479	17053	496.380
## 3700	17374	495.770
## 2622	15882	495.360
## 3145	16602	494.730
## 2295	15448	494.640
## 2961	16352	494.440
## 3667	17333	494.250
## 343	12763	494.080
## 3409	16955	493.670
## 637	13176	492.840
## 1428	14270	492.650
## 2337	15507	492.360
## 3066	16488	492.200
## 1036	13732	491.860
## 1405	14236	490.860
## 1951	15000	490.520

## 1530	14416	490.220
## 4213	18074	489.600
## 3690	17361	488.200
## 1219	13984	488.030
## 1514	14396	487.990
## 2084	15165	487.750
## 3174	16643	487.510
## 2016	15081	487.350
## 994	13675	486.820
## 3761	17453	486.720
## 619	13153	486.220
## 241	12639	486.100
## 3912	17658	485.880
## 2176	15287	485.240
## 590	13116	485.190
## 3440	16999	484.820
## 3077	16504	484.380
## 369	12809	484.360
## 1327	14130	483.860
## 897	13531	483.800
## 368	12808	483.650
## 3837	17555	483.260
## 1556	14450	483.250
## 3146	16603	482.470
## 3210	16693	482.010
## 4318	18216	481.750
## 3342	16863	481.350
## 3087	16518	480.920
## 3305	16812	479.350
## 2704	16008	478.780
## 246	12644	477.910
## 109	12479	477.300
## 2022	15091	476.960
## 2217	15344	476.580
## 83	12447	476.490
## 2544	15780	475.280
## 2222	15349	473.810
## 2378	15557	473.650
## 3340	16859	473.140
## 2980	16374	473.030
## 1239	14013	473.020
## 4127	17950	472.120
## 4137	17964	471.700
## 537	13043	471.570
## 3356	16885	471.510
## 2673	15963	470.760
## 2313	15471	469.480
## 1970	15026	469.000
## 512	13005	468.950
## 1885	14896	468.770

## 1339	14147	468.400
## 1472	14335	468.260
## 1250	14029	467.660
## 929	13579	467.040
## 689	13248	465.680
## 1979	15036	465.550
## 3539	17140	465.320
## 1177	13928	464.570
## 3132	16586	463.950
## 1933	14967	463.800
## 2038	15109	463.750
## 357	12787	463.660
## 3734	17418	463.460
## 1586	14489	463.380
## 1851	14853	463.050
## 470	12945	462.950
## 1468	14331	462.660
## 1570	14470	461.190
## 37	12391	460.890
## 3313	16824	460.640
## 3298	16805	460.590
## 117	12491	460.400
## 2361	15535	459.900
## 572	13092	459.830
## 9	12355	459.400
## 3134	16589	459.240
## 4073	17880	458.920
## 3270	16768	458.040
## 3715	17392	457.910
## 2023	15092	457.810
## 2049	15121	457.720
## 1592	14497	457.470
## 799	13398	457.340
## 176	12564	456.900
## 2400	15589	456.580
## 1963	15018	456.260
## 506	12999	455.880
## 2527	15754	455.670
## 26	12375	455.420
## 2398	15585	455.300
## 3095	16529	455.250
## 2126	15223	454.900
## 2730	16038	454.330
## 857	13485	454.240
## 2316	15475	454.110
## 3843	17564	454.010
## 318	12729	453.010
## 4210	18071	453.000
## 1365	14184	452.890
## 200	12591	452.850

## 876	13506	452.820
## 3768	17460	452.630
## 487	12970	452.240
## 4275	18158	451.750
## 3126	16574	451.440
## 1357	14173	450.840
## 3466	17040	449.730
## 861	13489	449.520
## 84	12448	449.450
## 2515	15739	449.120
## 4289	18176	448.650
## 1803	14780	447.680
## 2301	15456	447.220
## 2236	15368	446.940
## 2627	15889	446.870
## 3696	17370	446.180
## 4167	18006	444.680
## 3364	16898	444.460
## 1696	14638	443.600
## 3002	16404	443.050
## 4324	18222	443.000
## 1300	14093	442.850
## 2824	16163	441.600
## 2619	15877	440.780
## 3853	17579	440.200
## 1246	14022	440.000
## 2351	15524	440.000
## 4335	18233	440.000
## 2720	16025	439.660
## 3419	16968	439.430
## 772	13358	439.030
## 1606	14513	438.490
## 2311	15468	438.460
## 2621	15881	438.240
## 1430	14272	437.960
## 167	12552	437.820
## 2727	16034	437.700
## 201	12592	437.600
## 2374	15553	437.230
## 2761	16084	436.180
## 2372	15551	436.060
## 3402	16948	435.020
## 2881	16236	432.200
## 3352	16881	432.000
## 755	13338	431.820
## 773	13359	431.260
## 2682	15976	430.940
## 554	13066	430.900
## 4237	18106	430.700
## 686	13245	430.500

## 364	12795	430.480
## 383	12827	430.150
## 1950	14998	429.870
## 3355	16884	429.840
## 2297	15450	429.840
## 2132	15230	429.600
## 946	13602	428.890
## 2671	15957	428.890
## 2940	16324	428.680
## 88	12452	428.570
## 4065	17869	428.180
## 2229	15360	427.930
## 314	12725	427.800
## 327	12740	427.600
## 2696	15994	427.070
## 634	13171	426.810
## 3594	17223	426.790
## 2652	15930	426.630
## 2263	15406	426.610
## 2438	15639	425.320
## 3281	16780	425.190
## 2444	15646	425.140
## 3535	17134	425.000
## 3697	17371	423.890
## 609	13140	423.720
## 2788	16119	423.360
## 1959	15012	423.040
## 4185	18034	422.880
## 3815	17525	422.700
## 4340	18240	422.580
## 2879	16233	422.130
## 3601	17232	421.520
## 1785	14757	420.500
## 2112	15206	420.300
## 1321	14124	419.580
## 2230	15361	418.920
## 2675	15967	418.830
## 202	12593	418.100
## 3946	17701	417.950
## 2283	15433	417.870
## 3166	16629	417.730
## 3243	16737	417.600
## 847	13473	417.540
## 389	12833	417.380
## 4164	18001	417.230
## 3308	16816	417.060
## 1153	13889	416.900
## 2655	15935	416.860
## 119	12493	416.790
## 3411	16957	416.640

## 1332	14139	415.820
## 2562	15803	415.820
## 189	12580	415.700
## 2505	15725	415.250
## 3292	16795	414.880
## 502	12993	414.760
## 629	13166	414.700
## 3781	17483	414.040
## 1440	14288	413.850
## 3478	17052	413.750
## 1211	13974	413.590
## 3321	16834	413.460
## 367	12802	412.580
## 1105	13827	412.050
## 2350	15523	412.010
## 2907	16272	411.700
## 4100	17913	411.600
## 1723	14670	411.530
## 2098	15186	411.410
## 188	12579	410.720
## 2029	15099	410.480
## 2482	15695	409.980
## 458	12930	409.900
## 46	12403	409.700
## 1482	14348	409.570
## 500	12990	409.500
## 2128	15225	409.400
## 2886	16243	409.100
## 2714	16018	408.900
## 2164	15269	408.800
## 2997	16399	408.570
## 4113	17931	408.360
## 2706	16010	407.500
## 2096	15184	406.760
## 2054	15127	406.530
## 3401	16947	406.480
## 1679	14616	406.080
## 2855	16204	405.710
## 4187	18036	405.620
## 452	12922	405.380
## 3704	17379	404.660
## 2657	15938	404.580
## 2935	16319	404.400
## 122	12498	403.700
## 3745	17431	403.300
## 34	12386	401.900
## 2079	15158	401.400
## 3075	16500	400.860
## 2850	16198	400.681
## 361	12792	400.540

## 1347	14157	400.430
## 953	13615	399.990
## 2568	15809	399.210
## 4272	18154	399.190
## 2349	15522	398.840
## 4035	17830	398.700
## 131	12508	398.270
## 1541	14431	397.760
## 4109	17926	397.290
## 381	12824	397.120
## 940	13594	396.970
## 993	13673	396.920
## 3782	17486	396.870
## 2623	15883	396.480
## 4207	18067	396.330
## 2963	16354	395.800
## 4279	18164	394.700
## 2858	16207	394.380
## 2249	15386	394.140
## 2160	15264	393.740
## 3595	17226	393.490
## 1672	14600	393.330
## 1682	14620	393.280
## 2590	15837	391.980
## 2215	15342	391.760
## 3380	16917	391.520
## 692	13255	390.660
## 3878	17614	390.070
## 1895	14910	389.860
## 4117	17936	389.840
## 1780	14752	389.640
## 2892	16250	389.440
## 767	13352	389.280
## 2598	15847	389.270
## 285	12690	389.010
## 3865	17595	388.790
## 2402	15592	388.580
## 1161	13899	388.520
## 3463	17035	388.330
## 3277	16776	388.280
## 1626	14538	388.250
## 3686	17357	388.140
## 4028	17817	387.680
## 3799	17508	387.310
## 1316	14114	386.530
## 1802	14779	386.150
## 1533	14420	385.870
## 1100	13821	385.640
## 3955	17711	385.100
## 1110	13833	384.800

## 3615	17250	384.520
## 3572	17189	384.400
## 3582	17205	384.080
## 3426	16982	384.060
## 321	12733	383.950
## 137	12515	383.700
## 2289	15440	383.680
## 1563	14460	383.340
## 2277	15424	383.340
## 388	12832	383.030
## 1098	13817	382.980
## 4294	18181	382.800
## 982	13657	382.140
## 4163	17999	382.060
## 1138	13873	381.700
## 2021	15090	381.320
## 3030	16441	381.200
## 417	12871	380.640
## 1989	15048	380.570
## 3390	16930	380.550
## 3537	17138	380.500
## 432	12890	380.470
## 3271	16769	380.390
## 3460	17031	380.350
## 1767	14731	380.020
## 3608	17239	379.950
## 1668	14594	379.830
## 3108	16552	379.730
## 935	13589	379.650
## 981	13656	379.650
## 1681	14619	379.510
## 4071	17878	379.450
## 3064	16484	379.400
## 2624	15885	379.350
## 782	13372	378.640
## 1198	13954	378.590
## 3750	17438	378.300
## 3496	17078	378.200
## 761	13345	377.600
## 494	12982	377.200
## 1969	15025	377.010
## 3783	17489	376.640
## 1554	14448	375.350
## 1266	14048	375.130
## 1289	14079	375.100
## 2812	16147	375.000
## 1281	14067	374.700
## 3786	17492	374.570
## 419	12873	374.000
## 766	13351	373.940

## 921	13569	373.750
## 3368	16903	373.240
## 2882	16239	372.900
## 3701	17375	372.500
## 493	12981	372.220
## 2749	16065	372.090
## 3994	17765	371.880
## 2314	15472	371.560
## 2681	15975	371.010
## 2002	15063	370.800
## 2953	16343	370.480
## 3261	16758	369.340
## 1878	14888	369.200
## 2979	16372	367.930
## 2218	15345	367.690
## 4098	17911	366.230
## 3687	17358	365.850
## 3746	17432	365.760
## 726	13300	365.290
## 2853	16202	365.270
## 2281	15429	364.900
## 1876	14886	364.800
## 2665	15949	364.720
## 24	12373	364.600
## 2216	15343	364.500
## 1617	14528	364.220
## 3373	16909	364.140
## 156	12538	363.950
## 3665	17330	363.900
## 2635	15901	363.880
## 1356	14171	363.790
## 3080	16509	363.700
## 446	12915	363.650
## 3065	16485	363.650
## 4199	18056	363.650
## 2649	15922	363.600
## 1909	14932	363.530
## 1125	13856	363.400
## 1539	14427	363.340
## 2983	16378	362.950
## 3849	17573	362.900
## 2739	16052	362.060
## 1116	13844	361.620
## 1184	13936	361.280
## 1918	14950	361.250
## 2925	16305	361.220
## 718	13291	361.110
## 2617	15872	360.930
## 3139	16595	360.160
## 1070	13780	360.010

## 724	13298	360.000
## 2459	15664	358.630
## 1736	14690	358.610
## 4125	17948	358.560
## 3312	16823	358.380
## 673	13228	358.000
## 1213	13976	357.980
## 2908	16274	357.950
## 3455	17025	357.770
## 4189	18040	357.200
## 834	13453	356.980
## 1595	14500	356.850
## 2146	15247	356.000
## 160	12544	355.700
## 1625	14537	355.560
## 223	12617	355.530
## 3979	17742	355.110
## 970	13642	354.800
## 3593	17222	354.150
## 2616	15870	354.090
## 400	12845	354.090
## 304	12715	353.860
## 3617	17252	353.860
## 635	13173	353.650
## 659	13210	353.480
## 1820	14804	353.270
## 4148	17976	353.190
## 2471	15678	352.700
## 4241	18112	352.690
## 2211	15334	351.670
## 1470	14333	351.450
## 2551	15789	351.300
## 1172	13923	351.130
## 2634	15900	351.110
## 752	13332	350.900
## 1041	13740	350.750
## 4038	17835	350.640
## 4015	17795	350.390
## 1170	13919	350.160
## 585	13108	350.060
## 152	12532	349.830
## 991	13670	349.700
## 1151	13887	349.550
## 2262	15405	349.100
## 1176	13927	348.990
## 1076	13790	348.800
## 4254	18127	348.730
## 148	12527	348.710
## 2394	15579	348.600
## 2820	16159	348.200

## 545	13052	348.150
## 1502	14379	348.100
## 4273	18155	347.820
## 3919	17668	347.750
## 435	12895	347.300
## 933	13587	347.000
## 551	13062	346.980
## 2495	15713	346.750
## 178	12566	346.700
## 975	13649	346.600
## 3016	16423	346.120
## 3339	16858	345.890
## 2593	15840	345.660
## 3528	17123	345.300
## 1067	13774	345.000
## 1694	14633	344.900
## 3423	16978	344.330
## 3846	17569	344.140
## 556	13068	344.000
## 2048	15120	343.820
## 1988	15047	343.620
## 2347	15520	343.500
## 4219	18081	343.450
## 420	12875	343.230
## 1462	14320	343.110
## 4347	18250	342.920
## 3579	17201	342.630
## 3335	16851	342.450
## 3315	16826	341.700
## 762	13347	341.360
## 4102	17917	341.280
## 1587	14491	340.930
## 141	12519	340.840
## 2043	15115	340.110
## 1039	13737	339.600
## 3471	17045	339.440
## 3103	16545	339.300
## 3943	17697	338.950
## 4042	17839	338.800
## 2840	16183	338.710
## 2448	15652	337.740
## 3975	17736	337.490
## 2660	15942	337.440
## 1179	13930	337.340
## 4145	17973	337.040
## 2776	16105	336.960
## 4101	17914	336.430
## 2423	15619	336.400
## 3708	17384	336.400
## 1922	14954	336.170

## 4216	18078	336.130
## 2648	15921	336.030
## 1373	14196	335.520
## 2748	16063	335.320
## 3592	17221	335.130
## 115	12489	334.930
## 1947	14988	334.540
## 2309	15466	334.530
## 5	12350	334.400
## 2645	15918	334.230
## 663	13216	333.740
## 2545	15781	333.560
## 1032	13727	333.480
## 3162	16625	333.080
## 1164	13904	332.640
## 3334	16850	332.410
## 3296	16803	332.300
## 2834	16177	331.950
## 2724	16030	331.240
## 2114	15210	331.180
## 433	12891	331.000
## 3059	16478	331.000
## 4059	17862	330.900
## 2496	15714	330.880
## 1014	13706	330.790
## 1609	14517	330.450
## 2057	15130	330.110
## 3137	16593	330.030
## 477	12953	329.850
## 1758	14716	329.680
## 3879	17615	329.600
## 681	13239	329.560
## 3547	17154	329.340
## 2075	15153	329.250
## 1238	14012	328.800
## 3337	16855	328.400
## 2934	16318	328.150
## 2196	15314	327.970
## 1248	14024	327.700
## 2974	16366	327.300
## 1866	14870	327.250
## 2938	16322	326.750
## 1946	14987	326.400
## 3958	17715	326.400
## 2752	16071	326.240
## 399	12844	325.960
## 3318	16830	325.910
## 4063	17866	325.700
## 2661	15944	325.100
## 2117	15213	325.050

## 359	12790	324.920
## 1082	13801	324.800
## 3204	16685	324.240
## 4355	18261	324.240
## 1642	14555	324.140
## 2468	15675	323.690
## 4365	18276	323.360
## 4014	17793	323.040
## 1199	13955	322.960
## 3164	16627	322.800
## 2952	16342	322.410
## 1537	14424	322.080
## 1582	14484	321.920
## 1833	14823	321.430
## 868	13497	321.050
## 2136	15236	321.050
## 4245	18117	320.720
## 19	12365	320.690
## 2768	16096	320.620
## 1684	14622	320.580
## 1221	13986	320.460
## 571	13091	319.820
## 3226	16716	319.800
## 3196	16674	319.610
## 1425	14264	319.470
## 3074	16499	319.100
## 3418	16967	319.020
## 3598	17229	318.760
## 3614	17248	318.650
## 1747	14703	318.170
## 250	12648	318.050
## 2231	15363	318.050
## 4206	18066	318.000
## 3627	17267	317.620
## 2989	16386	317.200
## 2248	15385	316.880
## 2142	15243	316.680
## 3263	16761	316.620
## 2110	15204	316.580
## 3766	17458	316.500
## 865	13494	316.260
## 1577	14479	316.250
## 2406	15597	315.720
## 220	12614	315.600
## 2536	15766	315.060
## 2764	16091	315.060
## 3055	16473	314.860
## 3606	17237	314.690
## 2849	16193	314.450
## 252	12650	314.440

## 1889	14902	314.110
## 2677	15970	314.100
## 856	13484	313.800
## 431	12888	313.770
## 3129	16582	313.620
## 1765	14729	313.490
## 2620	15880	313.280
## 3560	17172	313.260
## 1117	13845	312.980
## 2199	15318	312.620
## 3245	16739	312.550
## 390	12834	312.380
## 3691	17362	312.230
## 3491	17070	312.140
## 3038	16450	311.920
## 1335	14142	311.810
## 2205	15326	311.710
## 1919	14951	311.690
## 1466	14327	311.650
## 1224	13990	311.300
## 4051	17854	311.260
## 1159	13897	311.160
## 3626	17266	310.640
## 2097	15185	310.620
## 2127	15224	310.480
## 1905	14924	310.050
## 2031	15101	310.030
## 2457	15661	309.800
## 2484	15699	309.650
## 1846	14847	309.400
## 3872	17604	309.360
## 428	12884	309.050
## 1075	13787	309.040
## 1958	15010	308.940
## 1009	13699	308.580
## 3801	17510	308.480
## 2875	16227	308.320
## 1379	14206	308.260
## 2792	16123	307.780
## 896	13529	307.760
## 796	13395	307.720
## 549	13060	307.530
## 3526	17120	307.460
## 1181	13932	307.400
## 611	13142	307.090
## 2018	15087	306.940
## 3833	17551	306.840
## 3191	16668	306.720
## 3668	17334	306.600
## 1024	13718	306.550

## 3549	17157	306.550
## 2455	15659	306.450
## 3564	17176	306.130
## 2122	15219	305.750
## 356	12785	305.710
## 3293	16796	305.620
## 2838	16181	305.540
## 539	13045	305.280
## 229	12623	305.100
## 988	13667	305.020
## 4121	17941	304.560
## 2082	15163	304.470
## 4297	18185	304.250
## 3971	17732	303.970
## 759	13343	303.930
## 2998	16400	303.930
## 567	13083	303.750
## 3207	16689	303.260
## 3747	17433	303.160
## 1999	15060	303.090
## 3018	16425	302.700
## 1416	14248	302.580
## 4280	18165	302.460
## 2775	16104	302.360
## 2192	15308	302.270
## 1995	15054	302.100
## 3225	16715	301.720
## 2461	15667	301.320
## 2071	15148	301.290
## 2427	15623	301.030
## 4150	17978	300.920
## 3023	16430	300.850
## 3060	16479	300.830
## 1790	14762	300.520
## 729	13304	300.420
## 2151	15254	300.360
## 404	12852	299.750
## 3000	16402	299.600
## 1130	13863	299.560
## 4317	18215	299.340
## 3529	17124	298.890
## 3620	17255	298.410
## 4031	17824	298.400
## 3929	17678	298.110
## 425	12881	298.000
## 842	13466	297.950
## 4322	18220	297.780
## 4197	18053	297.070
## 2605	15857	297.000
## 1016	13708	296.880

## 1945	14985	296.750
## 4201	18059	296.710
## 827	13441	296.640
## 1050	13751	296.250
## 874	13504	295.930
## 4099	17912	295.610
## 3282	16781	294.650
## 925	13573	294.400
## 1778	14747	294.300
## 3797	17506	294.290
## 2510	15732	294.120
## 3820	17531	293.450
## 3554	17163	293.100
## 2368	15545	292.720
## 3231	16721	292.470
## 3410	16956	292.340
## 695	13259	292.320
## 872	13502	292.000
## 830	13449	291.880
## 1046	13745	291.540
## 904	13544	291.410
## 1711	14656	291.050
## 852	13479	291.000
## 1916	14947	290.820
## 3937	17691	290.400
## 3092	16526	290.360
## 3499	17081	290.160
## 1805	14784	289.990
## 3772	17464	289.960
## 1475	14339	289.910
## 1921	14953	289.820
## 1351	14162	289.360
## 2794	16125	289.350
## 1636	14549	289.240
## 3792	17501	288.600
## 3301	16808	288.420
## 2256	15396	288.180
## 4149	17977	288.140
## 3990	17760	287.590
## 3025	16432	287.400
## 3439	16998	287.020
## 1058	13760	286.790
## 3111	16555	285.890
## 1715	14660	285.740
## 3498	17080	285.500
## 3022	16429	284.550
## 826	13439	283.710
## 4006	17783	283.470
## 3616	17251	283.280
## 3940	17694	283.120

## 1053	13754	282.600
## 638	13177	282.450
## 3613	17247	282.190
## 3113	16557	281.850
## 3722	17403	281.620
## 3332	16848	281.420
## 2918	16292	280.900
## 1411	14242	280.550
## 948	13606	280.540
## 2814	16149	280.520
## 1940	14975	279.940
## 2377	15556	279.770
## 1578	14480	279.050
## 4008	17786	278.740
## 1848	14850	278.150
## 1894	14908	277.800
## 2172	15279	277.410
## 4141	17968	277.350
## 1084	13803	277.070
## 2226	15355	277.050
## 3354	16883	276.730
## 707	13272	276.560
## 1603	14508	276.420
## 333	12750	275.880
## 3303	16810	275.640
## 2921	16297	275.400
## 1605	14512	275.280
## 294	12703	274.700
## 4300	18190	274.510
## 2930	16313	274.150
## 3236	16727	272.820
## 3619	17254	272.440
## 568	13085	272.380
## 3789	17498	272.220
## 1830	14819	272.070
## 1168	13917	272.040
## 1827	14816	271.850
## 547	13058	271.400
## 1112	13837	271.240
## 3995	17767	271.200
## 3788	17496	271.050
## 3447	17011	270.900
## 3177	16648	270.860
## 2540	15774	270.800
## 899	13533	270.790
## 1611	14520	270.600
## 683	13242	270.400
## 3509	17094	270.200
## 2417	15609	270.030
## 1764	14727	268.580

## 2265	15408	267.180
## 3832	17550	267.160
## 2201	15320	267.130
## 3953	17708	267.080
## 2345	15517	267.030
## 3039	16451	266.970
## 1860	14863	266.760
## 2047	15119	266.400
## 481	12962	266.390
## 1964	15019	266.000
## 3894	17636	265.930
## 1282	14068	265.850
## 3744	17430	265.760
## 1536	14423	265.200
## 1210	13973	264.700
## 4238	18108	264.650
## 2642	15912	264.620
## 1558	14452	264.440
## 780	13369	263.750
## 2629	15894	263.550
## 118	12492	263.210
## 3395	16936	262.680
## 3576	17194	262.620
## 3009	16413	262.200
## 3709	17385	261.110
## 647	13189	260.680
## 1271	14053	260.250
## 1960	15014	260.170
## 2066	15143	259.450
## 1341	14149	259.430
## 2868	16217	259.390
## 3530	17125	259.350
## 598	13127	259.170
## 3035	16447	259.010
## 2392	15577	258.880
## 1899	14915	258.830
## 1484	14350	258.700
## 710	13277	258.400
## 672	13227	257.700
## 1500	14375	257.680
## 958	13626	257.230
## 69	12430	256.400
## 1087	13806	256.380
## 4088	17896	256.320
## 1789	14761	255.900
## 2171	15277	255.900
## 1872	14881	255.400
## 2874	16226	255.120
## 2157	15261	254.820
## 594	13121	254.730

## 212	12604	254.180
## 1792	14765	254.110
## 2477	15689	254.100
## 385	12829	253.050
## 2532	15759	253.040
## 4057	17860	252.800
## 1978	15035	252.730
## 802	13404	252.490
## 2219	15346	252.420
## 4169	18009	252.240
## 973	13645	252.100
## 1019	13711	252.060
## 3323	16836	251.870
## 3548	17155	251.700
## 3422	16976	251.520
## 2719	16024	251.240
## 881	13512	251.210
## 1791	14764	250.550
## 656	13207	250.260
## 3140	16596	250.150
## 3649	17303	250.040
## 2339	15510	250.000
## 3764	17456	249.860
## 3573	17190	249.740
## 4166	18005	249.720
## 550	13061	248.610
## 3520	17111	248.610
## 4315	18212	248.420
## 3081	16510	248.100
## 2027	15097	248.080
## 938	13592	247.960
## 2036	15107	247.660
## 764	13349	247.320
## 1713	14658	247.150
## 3477	17051	247.140
## 2547	15783	246.300
## 3632	17278	246.040
## 441	12908	246.000
## 3279	16778	245.940
## 3999	17771	245.810
## 261	12660	245.100
## 2046	15118	244.800
## 3144	16601	244.800
## 3094	16528	244.410
## 4084	17892	244.100
## 4108	17925	244.080
## 581	13103	243.940
## 3290	16793	243.840
## 2736	16048	243.690
## 1150	13886	243.560

## 2434	15634	243.550
## 3671	17339	243.360
## 4097	17908	243.280
## 1705	14647	243.220
## 2866	16215	242.350
## 2944	16330	242.210
## 2542	15776	241.620
## 1613	14523	241.090
## 3020	16427	241.060
## 2175	15286	240.550
## 2076	15154	240.270
## 918	13565	240.220
## 3621	17256	240.000
## 3567	17181	239.920
## 2478	15690	239.760
## 922	13570	239.490
## 3933	17684	239.410
## 3259	16756	239.400
## 4361	18270	238.950
## 174	12561	238.850
## 2599	15850	238.850
## 307	12718	238.250
## 4070	17877	237.610
## 2302	15457	237.070
## 4180	18024	236.780
## 320	12732	236.260
## 2721	16026	236.090
## 645	13187	236.020
## 2407	15598	235.680
## 2305	15462	234.600
## 1572	14473	234.340
## 3483	17060	234.240
## 3414	16961	234.170
## 324	12736	234.000
## 2320	15483	233.810
## 763	13348	233.760
## 3130	16583	233.450
## 1948	14995	233.230
## 995	13678	232.600
## 4316	18213	232.480
## 2787	16117	232.210
## 3421	16971	232.210
## 2154	15257	232.150
## 2253	15393	231.860
## 3172	16641	231.100
## 2937	16321	230.700
## 2613	15866	230.530
## 3033	16445	230.510
## 1074	13786	230.400
## 3386	16926	230.250

## 1203	13960	230.220
## 1457	14311	229.710
## 371	12812	229.640
## 848	13474	229.590
## 2355	15528	229.330
## 3678	17347	228.960
## 614	13146	228.910
## 1020	13712	228.840
## 558	13070	228.800
## 4142	17969	228.200
## 3093	16527	228.060
## 1650	14569	227.390
## 3585	17212	226.850
## 3848	17572	226.750
## 2931	16315	226.370
## 3278	16777	226.350
## 270	12672	225.900
## 4011	17789	225.900
## 1686	14624	225.850
## 1491	14357	225.770
## 45	12402	225.600
## 1270	14052	225.360
## 3133	16587	225.150
## 3559	17171	224.910
## 2090	15175	224.140
## 3054	16471	223.950
## 3256	16753	223.920
## 1906	14929	223.880
## 1175	13926	223.850
## 4233	18101	223.650
## 2436	15637	223.360
## 3821	17534	223.360
## 788	13382	222.990
## 2631	15897	222.050
## 1671	14598	221.970
## 1926	14960	221.270
## 2992	16392	221.190
## 811	13419	221.060
## 2552	15790	220.850
## 4182	18030	220.700
## 3062	16482	220.620
## 563	13079	220.100
## 4243	18114	220.100
## 944	13600	219.520
## 2026	15096	219.390
## 3362	16895	219.140
## 293	12702	219.000
## 1378	14205	218.780
## 990	13669	218.550
## 3882	17619	218.520

## 818	13428	218.470
## 184	12574	218.450
## 1651	14570	218.060
## 3168	16634	217.900
## 2375	15554	217.200
## 1040	13739	216.900
## 873	13503	216.850
## 2304	15460	216.760
## 436	12897	216.500
## 2412	15604	216.390
## 3749	17436	216.300
## 1307	14104	216.210
## 1126	13858	216.170
## 2836	16179	215.830
## 1993	15052	215.780
## 3854	17580	215.720
## 1575	14476	215.700
## 2846	16189	215.480
## 2847	16190	215.080
## 3088	16519	215.080
## 387	12831	215.050
## 197	12588	214.900
## 2948	16338	214.800
## 3007	16411	214.650
## 3330	16846	214.320
## 1811	14793	214.140
## 3176	16647	214.060
## 1673	14601	213.960
## 956	13621	213.850
## 3546	17153	213.780
## 1410	14241	213.700
## 806	13411	213.550
## 3135	16591	213.500
## 2364	15540	213.300
## 1944	14984	213.270
## 3363	16897	213.030
## 4303	18193	212.960
## 2923	16302	212.820
## 4110	17928	212.540
## 2504	15724	212.300
## 2713	16017	211.880
## 2487	15703	211.500
## 3011	16415	210.350
## 2964	16356	210.320
## 898	13532	210.310
## 1106	13828	209.490
## 4052	17855	208.970
## 2206	15327	208.750
## 3805	17514	208.650
## 3208	16690	208.630

## 3377	16914	208.460
## 3043	16457	208.360
## 163	12547	207.800
## 4301	18191	207.800
## 3343	16866	207.740
## 2939	16323	207.500
## 4106	17923	207.500
## 3255	16752	207.500
## 578	13099	207.360
## 2651	15925	207.150
## 2576	15820	206.980
## 4253	18126	206.830
## 1930	14964	206.210
## 4240	18110	206.050
## 553	13065	205.860
## 3921	17670	205.700
## 4044	17843	205.480
## 2191	15307	205.300
## 2531	15758	205.250
## 882	13513	205.100
## 2200	15319	204.500
## 3157	16619	204.410
## 3583	17206	204.240
## 521	13017	204.000
## 4363	18273	204.000
## 3570	17187	203.950
## 4081	17889	203.870
## 3716	17394	203.870
## 4083	17891	203.860
## 3702	17376	203.200
## 2503	15723	203.100
## 1503	14381	202.680
## 4283	18169	202.650
## 1506	14385	202.110
## 2220	15347	201.600
## 3416	16965	201.190
## 1127	13859	201.160
## 504	12995	200.720
## 698	13262	200.290
## 2287	15437	200.160
## 1216	13980	200.140
## 1804	14782	200.100
## 1029	13723	199.850
## 2403	15593	199.800
## 744	13322	199.480
## 3707	17383	199.290
## 3319	16832	199.150
## 4156	17987	198.570
## 721	13295	197.950
## 2835	16178	197.900

## 86	12450	197.880
## 190	12581	197.710
## 1366	14185	197.650
## 1808	14789	197.640
## 3647	17301	197.630
## 3317	16829	197.220
## 1838	14830	197.130
## 1452	14304	197.100
## 2134	15234	197.000
## 824	13436	196.890
## 1214	13978	196.790
## 716	13284	196.150
## 3914	17660	196.000
## 2782	16112	195.740
## 1078	13792	195.550
## 1720	14666	195.250
## 2420	15612	195.150
## 1304	14100	194.900
## 3357	16887	194.880
## 3778	17475	194.370
## 365	12797	194.180
## 2475	15683	193.750
## 2106	15198	193.640
## 3674	17343	193.640
## 3331	16847	193.440
## 3873	17608	193.420
## 1822	14806	193.390
## 1818	14801	193.140
## 920	13568	192.850
## 144	12522	192.720
## 360	12791	192.600
## 2640	15909	191.940
## 1932	14966	191.320
## 4157	17988	191.170
## 2480	15692	191.040
## 3602	17233	190.880
## 531	13033	190.550
## 2268	15412	190.530
## 1596	14501	190.310
## 1209	13972	190.250
## 4077	17885	190.190
## 15	12361	189.900
## 3557	17166	189.490
## 986	13663	189.470
## 4194	18045	189.400
## 3036	16448	188.890
## 1741	14697	188.610
## 434	12893	188.140
## 4005	17781	188.020
## 1761	14722	187.920

## 3633	17279	187.830
## 3366	16900	187.690
## 4172	18013	187.290
## 2793	16124	187.150
## 3939	17693	187.020
## 1638	14551	186.230
## 2383	15567	186.010
## 243	12641	185.900
## 3850	17574	185.650
## 3446	17010	185.460
## 1375	14199	185.400
## 2769	16097	185.050
## 854	13482	184.640
## 3931	17680	184.400
## 3026	16433	184.260
## 2052	15124	184.190
## 3200	16680	183.700
## 1276	14059	183.600
## 838	13460	183.440
## 548	13059	183.400
## 2520	15746	182.960
## 4000	17772	182.770
## 1292	14082	182.250
## 1295	14087	181.670
## 4247	18119	181.120
## 2625	15886	181.090
## 3138	16594	181.090
## 2662	15945	181.000
## 2181	15292	180.940
## 3322	16835	180.850
## 4368	18280	180.600
## 1018	13710	180.480
## 1982	15041	180.350
## 228	12622	180.100
## 195	12586	179.940
## 4268	18147	179.340
## 2630	15895	179.170
## 2300	15454	179.100
## 1749	14705	179.000
## 3434	16990	179.000
## 2063	15139	178.960
## 3158	16620	178.960
## 2158	15262	178.950
## 4094	17904	178.920
## 1069	13778	178.700
## 4072	17879	178.520
## 514	13008	178.470
## 706	13271	178.260
## 3618	17253	178.260
## 3685	17356	178.220

## 955	13618	177.340
## 224	12618	177.310
## 559	13072	177.150
## 3751	17440	177.100
## 453	12923	176.970
## 4124	17947	176.680
## 2758	16080	176.600
## 4370	18282	176.600
## 132	12509	176.500
## 3856	17582	175.270
## 2809	16144	175.200
## 3666	17331	175.200
## 4170	18010	174.800
## 1104	13826	174.650
## 1489	14355	174.400
## 913	13560	174.370
## 1610	14518	174.370
## 2212	15335	173.970
## 4367	18278	173.900
## 1815	14798	173.740
## 3118	16565	173.700
## 78	12441	173.550
## 2382	15565	173.160
## 2464	15670	173.050
## 1739	14693	172.900
## 4195	18048	172.290
## 1003	13690	172.250
## 1171	13922	172.250
## 79	12442	172.060
## 1624	14536	171.800
## 3274	16773	171.590
## 3612	17245	171.450
## 2282	15432	171.190
## 3827	17542	170.750
## 4200	18058	170.160
## 1961	15016	170.040
## 3383	16921	169.790
## 1204	13962	169.550
## 1390	14218	169.480
## 4165	18004	169.470
## 20	12367	168.900
## 1656	14578	168.630
## 1857	14860	168.620
## 3694	17367	168.400
## 4232	18099	168.310
## 2914	16282	168.300
## 3976	17737	168.240
## 2690	15986	168.120
## 166	12551	168.000
## 2241	15374	168.000

## 4225	18088	167.670
## 3841	17561	167.620
## 3406	16952	167.610
## 2647	15920	167.500
## 942	13598	167.420
## 3003	16405	167.250
## 1465	14326	166.850
## 4173	18014	166.420
## 3905	17650	166.080
## 375	12817	166.040
## 1583	14485	165.750
## 1639	14552	165.070
## 4191	18042	165.050
## 845	13470	165.000
## 2198	15316	165.000
## 2637	15904	164.680
## 3822	17535	164.400
## 947	13603	164.340
## 450	12920	164.230
## 4307	18200	163.800
## 1488	14354	163.620
## 3519	17110	163.300
## 668	13223	163.200
## 3004	16406	163.070
## 2085	15167	163.000
## 3086	16517	162.700
## 2511	15733	162.300
## 2204	15325	162.290
## 3392	16932	161.940
## 3868	17600	161.670
## 2303	15458	161.640
## 2783	16113	161.380
## 1494	14362	161.200
## 3001	16403	161.050
## 1377	14204	161.030
## 1297	14089	161.000
## 1406	14237	161.000
## 674	13229	160.950
## 2600	15852	160.710
## 3675	17344	160.570
## 183	12573	160.540
## 4309	18203	160.420
## 4267	18146	160.350
## 1756	14714	160.190
## 484	12966	160.180
## 2864	16213	159.000
## 4326	18224	158.950
## 1185	13937	158.850
## 3556	17165	158.680
## 2081	15160	158.160

## 2221	15348	158.040
## 2692	15988	158.030
## 3838	17556	157.900
## 1816	14799	157.700
## 1340	14148	157.200
## 3532	17128	157.090
## 1661	14585	157.050
## 3524	17118	157.020
## 1956	15007	156.910
## 1520	14406	156.750
## 2288	15438	156.580
## 2159	15263	156.510
## 1160	13898	155.930
## 4067	17871	155.900
## 4091	17899	155.800
## 1825	14813	155.430
## 4037	17832	155.370
## 325	12738	155.350
## 3230	16720	155.240
## 2294	15447	155.170
## 1090	13809	155.050
## 1497	14368	155.000
## 1264	14046	154.990
## 3944	17698	154.950
## 2516	15740	154.880
## 3456	17026	154.830
## 1446	14295	154.700
## 2129	15226	154.410
## 3808	17517	153.940
## 3636	17286	153.920
## 2960	16351	153.900
## 210	12602	153.120
## 3957	17714	153.000
## 2890	16248	152.940
## 4153	17984	152.680
## 4260	18138	152.650
## 1280	14066	152.550
## 3952	17707	152.400
## 883	13514	152.200
## 1259	14039	152.200
## 4090	17898	152.060
## 3155	16617	151.850
## 3008	16412	151.830
## 1380	14208	151.740
## 3341	16861	151.650
## 3046	16461	151.420
## 1008	13697	151.300
## 1439	14287	151.230
## 2947	16337	151.050
## 2498	15717	150.300

## 3603	17234	149.890
## 2615	15869	149.640
## 4123	17946	149.580
## 4356	18262	149.480
## 2522	15748	149.310
## 2285	15435	149.290
## 510	13003	149.050
## 3831	17549	148.860
## 2353	15526	148.440
## 4056	17859	148.210
## 1934	14968	147.590
## 1302	14098	147.350
## 1257	14037	147.200
## 411	12864	147.120
## 2333	15503	147.090
## 3459	17030	146.870
## 1407	14238	146.850
## 3361	16893	145.930
## 4116	17935	145.790
## 1132	13866	145.670
## 2656	15937	145.350
## 3814	17524	145.000
## 3336	16852	144.910
## 489	12974	144.800
## 196	12587	144.000
## 3569	17186	144.000
## 840	13462	143.250
## 2489	15705	143.100
## 725	13299	142.500
## 2917	16287	142.500
## 932	13584	142.400
## 1507	14386	142.400
## 914	13561	141.860
## 1261	14041	141.410
## 2626	15888	141.270
## 3142	16598	140.700
## 2250	15388	140.540
## 812	13420	140.350
## 855	13483	140.340
## 1589	14494	139.560
## 1284	14073	139.540
## 1794	14768	139.500
## 3063	16483	139.350
## 3960	17718	139.350
## 1797	14772	139.260
## 4312	18209	139.100
## 708	13273	138.980
## 4360	18269	138.900
## 438	12902	138.680
## 1657	14581	138.600

## 3527	17122	138.320
## 1022	13716	138.280
## 2458	15663	138.140
## 134	12512	138.030
## 2738	16050	137.900
## 3954	17709	137.450
## 3774	17468	137.000
## 2479	15691	136.800
## 1415	14247	136.770
## 4144	17972	136.040
## 486	12968	135.950
## 1983	15042	135.930
## 1879	14889	135.900
## 2273	15419	135.860
## 2784	16114	135.750
## 2089	15174	135.750
## 3188	16665	135.400
## 2170	15276	135.310
## 403	12851	135.180
## 2742	16055	134.800
## 1476	14340	134.700
## 2380	15562	134.550
## 1358	14174	134.460
## 1662	14586	134.160
## 392	12837	134.100
## 1434	14280	134.040
## 664	13217	133.620
## 1483	14349	133.500
## 81	12445	133.400
## 4074	17881	133.350
## 2493	15709	133.250
## 3902	17647	133.060
## 4007	17785	131.940
## 1546	14438	131.900
## 3644	17297	131.780
## 3763	17455	131.700
## 1813	14795	131.450
## 177	12565	131.170
## 2596	15844	130.740
## 3199	16679	129.750
## 3160	16623	129.450
## 1581	14483	129.200
## 3316	16828	128.500
## 2366	15543	127.860
## 3688	17359	127.860
## 1071	13781	127.840
## 2061	15135	127.150
## 2393	15578	127.100
## 2650	15923	127.080
## 1928	14962	126.700

## 712	13279	126.300
## 3010	16414	126.250
## 2306	15463	126.140
## 3432	16988	126.120
## 372	12814	125.920
## 891	13522	125.800
## 1858	14861	125.790
## 1880	14890	125.650
## 1962	15017	125.580
## 151	12531	125.220
## 3544	17148	124.880
## 3852	17578	124.740
## 3333	16849	124.570
## 3121	16569	124.200
## 1590	14495	123.800
## 3185	16658	123.240
## 2644	15917	123.100
## 4140	17967	123.070
## 1141	13876	122.700
## 1527	14413	122.700
## 968	13638	122.640
## 1354	14165	122.540
## 1286	14076	122.470
## 4177	18018	122.140
## 685	13244	121.740
## 640	13182	121.180
## 1990	15049	121.170
## 2341	15512	121.000
## 3150	16611	120.990
## 509	13002	120.950
## 3755	17446	120.900
## 4174	18015	120.030
## 1422	14259	120.000
## 1459	14314	120.000
## 1559	14453	119.930
## 3102	16542	119.620
## 2162	15266	119.300
## 3189	16666	118.980
## 2595	15843	118.950
## 3497	17079	118.800
## 1345	14155	118.750
## 930	13581	118.000
## 649	13193	117.880
## 3909	17654	117.550
## 2589	15836	117.470
## 3412	16959	117.350
## 1142	13877	117.240
## 3523	17117	116.200
## 633	13170	116.010
## 3869	17601	116.010

## 1336	14143	115.800
## 2223	15350	115.650
## 555	13067	115.460
## 4181	18027	115.310
## 1937	14972	114.770
## 646	13188	114.600
## 1693	14632	114.560
## 2889	16247	114.560
## 1939	14974	114.390
## 4050	17852	114.340
## 3590	17219	114.230
## 1708	14652	114.180
## 464	12938	114.140
## 1658	14582	114.110
## 2124	15221	114.100
## 127	12504	114.000
## 253	12651	114.000
## 1561	14457	113.640
## 2293	15445	113.500
## 3588	17217	113.500
## 4236	18105	113.480
## 3376	16913	113.440
## 2173	15280	113.120
## 1735	14689	112.800
## 626	13161	112.750
## 3212	16697	112.750
## 1088	13807	112.600
## 4255	18129	112.550
## 2418	15610	112.460
## 3465	17038	112.400
## 1429	14271	112.320
## 4085	17893	112.250
## 338	12756	112.080
## 3630	17274	111.980
## 4132	17957	111.680
## 4079	17887	111.350
## 4248	18120	111.150
## 878	13508	110.970
## 612	13144	110.950
## 2362	15537	110.920
## 888	13519	110.800
## 2601	15853	110.800
## 3680	17349	110.750
## 3415	16963	110.550
## 1699	14641	110.460
## 322	12734	110.400
## 3289	16792	110.380
## 4093	17901	110.380
## 4039	17836	110.210
## 2949	16339	109.950

## 602	13133	109.800
## 2971	16363	109.360
## 1743	14699	109.130
## 1480	14345	108.980
## 3896	17639	108.500
## 2777	16106	108.380
## 671	13226	108.210
## 479	12956	108.070
## 1716	14661	107.950
## 3284	16784	107.600
## 2255	15395	107.450
## 3260	16757	106.830
## 2086	15168	106.560
## 2008	15070	106.200
## 4013	17791	106.100
## 457	12929	105.100
## 2541	15775	104.900
## 1249	14027	104.820
## 2415	15607	104.760
## 2672	15958	104.350
## 4288	18174	104.000
## 4350	18255	103.300
## 1630	14542	103.250
## 4136	17962	102.830
## 4171	18011	102.790
## 1840	14836	102.450
## 1943	14981	102.120
## 1192	13948	102.000
## 3047	16462	102.000
## 3085	16516	101.700
## 4208	18068	101.700
## 3899	17643	101.550
## 2702	16006	101.400
## 4223	18086	101.340
## 579	13101	101.190
## 678	13235	101.170
## 2954	16344	101.100
## 1915	14946	100.900
## 3741	17427	100.800
## 1498	14371	100.500
## 2679	15973	99.770
## 1011	13703	99.500
## 4119	17939	99.140
## 3981	17746	98.800
## 2153	15256	98.450
## 3825	17538	98.420
## 4087	17895	98.000
## 4184	18033	97.970
## 2275	15422	97.700
## 4366	18277	97.630

## 495	12984	97.500
## 3663	17325	96.800
## 2120	15216	96.600
## 1700	14642	96.120
## 3454	17024	95.850
## 4346	18249	95.340
## 164	12548	95.200
## 2990	16387	94.360
## 2754	16073	94.350
## 977	13651	94.200
## 2257	15397	94.000
## 2280	15428	93.780
## 4329	18227	93.750
## 715	13283	93.660
## 4159	17991	93.350
## 378	12821	92.720
## 1272	14054	92.460
## 358	12789	91.850
## 908	13551	91.800
## 625	13160	91.800
## 260	12659	91.680
## 2323	15488	91.320
## 1191	13947	90.600
## 1487	14353	90.600
## 3079	16506	90.300
## 2373	15552	90.120
## 3141	16597	90.040
## 1318	14117	90.000
## 1391	14219	89.940
## 282	12686	89.140
## 1544	14436	89.060
## 7	12353	89.000
## 2116	15212	88.950
## 2017	15083	88.200
## 4221	18084	87.530
## 2093	15180	87.500
## 722	13296	87.400
## 3073	16498	86.120
## 2365	15541	85.130
## 1114	13841	85.000
## 987	13666	84.650
## 44	12401	84.300
## 3652	17309	82.750
## 3017	16424	82.560
## 513	13006	81.570
## 3883	17620	81.440
## 4369	18281	80.820
## 3286	16789	80.800
## 1206	13967	80.700
## 3985	17752	80.640

## 1311	14109	80.200
## 1047	13747	79.600
## 2526	15753	79.200
## 2756	16078	79.200
## 4122	17942	77.500
## 1806	14785	77.400
## 601	13132	77.300
## 1226	13992	76.800
## 1499	14373	76.550
## 3823	17536	76.500
## 1298	14090	76.320
## 2462	15668	76.320
## 2813	16148	76.320
## 4242	18113	76.320
## 4161	17995	76.100
## 3888	17628	75.750
## 3149	16610	75.660
## 801	13403	75.000
## 3051	16468	74.900
## 4196	18050	74.400
## 575	13095	74.400
## 4134	17960	73.780
## 129	12506	73.500
## 4183	18032	73.500
## 2829	16171	73.200
## 4096	17906	72.900
## 1001	13686	72.000
## 1186	13938	71.660
## 643	13185	71.400
## 3453	17022	71.000
## 3128	16581	70.440
## 4188	18037	70.020
## 2610	15863	68.840
## 1512	14393	67.950
## 3706	17382	65.400
## 3982	17747	64.650
## 999	13684	64.230
## 599	13130	64.000
## 728	13302	63.750
## 3624	17263	63.440
## 1842	14840	62.850
## 665	13218	62.640
## 2344	15516	62.430
## 2508	15729	62.000
## 264	12665	61.750
## 650	13194	60.700
## 3562	17174	59.900
## 794	13391	59.800
## 583	13106	59.500
## 998	13682	59.500

## 1923	14957	58.490
## 564	13080	58.080
## 4002	17775	56.400
## 2633	15899	56.250
## 778	13366	56.160
## 1788	14760	53.800
## 2958	16349	53.500
## 2334	15504	52.830
## 1861	14865	52.200
## 1731	14682	52.000
## 2195	15313	52.000
## 4045	17844	51.560
## 1485	14351	51.000
## 515	13011	50.550
## 4296	18184	49.800
## 1832	14821	48.800
## 2411	15603	48.480
## 2897	16257	46.950
## 1290	14080	45.600
## 2276	15423	43.500
## 1450	14300	43.200
## 2694	15992	41.990
## 1109	13832	40.950
## 2091	15178	40.500
## 1664	14589	39.750
## 491	12977	39.240
## 3186	16659	39.120
## 4178	18019	38.450
## 407	12855	38.100
## 2823	16162	37.400
## 4027	17816	36.560
## 1654	14576	35.400
## 3338	16856	35.400
## 4036	17831	35.400
## 2518	15744	34.800
## 3267	16765	34.000
## 3726	17408	32.650
## 2659	15940	31.800
## 593	13120	30.600
## 2453	15657	30.000
## 3515	17102	25.500
## 3407	16953	20.800
## 4155	17986	20.800
## 2766	16093	17.000
## 731	13307	15.000
## 3992	17763	15.000
## 4092	17900	15.000
## 4131	17956	12.750
## 3244	16738	3.750
## 3034	16446	2.900

## 1	12346	0.000
## 90	12454	0.000
## 171	12558	0.000
## 214	12607	0.000
## 693	13256	0.000
## 776	13364	0.000
## 1060	13762	0.000
## 1643	14557	0.000
## 1810	14792	0.000
## 3246	16742	0.000
## 3350	16878	0.000
## 4211	18072	0.000
## 4359	18268	0.000
## 4364	18274	0.000
## 3436	16995	-1.250
## 1728	14679	-2.550
## 3021	16428	-2.950
## 468	12943	-3.750
## 128	12505	-4.500
## 213	12605	-7.500
## 2803	16138	-7.950
## 3040	16454	-8.150
## 3829	17547	-11.800
## 416	12870	-14.900
## 1800	14777	-17.450
## 1319	14119	-19.900
## 1689	14627	-21.850
## 4030	17820	-24.050
## 2746	16061	-29.950
## 2401	15590	-30.190
## 3127	16579	-30.600
## 2901	16262	-31.650
## 1005	13693	-32.000
## 4262	18141	-35.400
## 1545	14437	-43.400
## 4351	18256	-50.100
## 992	13672	-71.460
## 2437	15638	-94.000
## 3104	16546	-95.930
## 1107	13829	-102.000
## 1201	13958	-102.450
## 3488	17065	-112.350
## 2507	15728	-134.800
## 3830	17548	-141.480
## 3651	17307	-152.640
## 265	12666	-227.440
## 2893	16252	-295.090
## 2561	15802	-451.420
## 620	13154	-611.860
## 2579	15823	-840.760

```
## 126      12503   -1126.000
## 3871     17603   -1165.300
## 1385     14213   -1192.200
## 2237     15369   -1592.490
## 3757     17448   -4287.630
```

#Answer: According to the table, the customer ID 14646 is the most valuable customer. The total transaction value of the customer is 279489.020

07. Calculate the percentage of missing values for each variable in the dataset

```
missing_percent <- colSums(is.na(Online_Retail2))/nrow(Online_Retail2)*100
print(missing_percent)
```

```
##      InvoiceNo      StockCode      Description      Quantity
##      0.0000000      0.0000000      0.2683107      0.0000000
##      InvoiceDate      UnitPrice      CustomerID      Country
##      0.0000000      0.0000000      24.9266943      0.0000000
## Transaction_Value
##      0.0000000
```

08. What are the number of transactions with missing CustomerID records by countries?

```
missing_cust <- subset(Online_Retail2, is.na(CustomerID))
missing_by_country <- aggregate(Transaction_Value~Country, data =
missing_cust, FUN = length)
print(missing_by_country)
```

```
##      Country Transaction_Value
## 1      Bahrain                2
## 2          EIRE              711
## 3        France              66
## 4    Hong Kong             288
## 5        Israel              47
## 6      Portugal              39
## 7  Switzerland             125
## 8 United Kingdom          133600
## 9   Unspecified             202
```

09. On average, how often the costumers comeback to the website for their next shopping?

```
customer_transactions <- Online_Retail%>%
  group_by(CustomerID)%>%
  arrange(New_Invoice_Date)
```

```
time_diff <- customer_transactions%>%
  mutate(last_purchase= c(NA,diff(New_Invoice_Date)))%>%
  ungroup()
```

```
mean_time_diff <- mean(time_diff$last_purchase,na.rm = TRUE)
mean_time_diff
```

```
## [1] 1.088318
```

#Answer: According to the calculation customers comeback to the website after one day for their next shopping.

10 what is the return rate for the French customers?

```
French_Retail<-Online_Retail2[Online_Retail2$Country=="France",]
Cancelled_trans <-French_Retail[French_Retail$Quantity <0,]
total_transactions<-nrow(French_Retail)
Return_Rate<-nrow(Cancelled_trans)/total_transactions
Return_Rate
```

```
## [1] 0.01741264
```

#Answer:According to the above calculation the return rate for the french customers is 0.017.

11 What is the product that has generated the highest revenue for the retailer?

```
Prod_rev <- aggregate(Transaction_Value~Description,data =
Online_Retail2,sum)
Prod_max_rev<- Prod_rev[which.max(Prod_rev$Transaction_Value),"Description"]
Prod_max_rev
```

```
## [1] "DOTCOM POSTAGE"
```

#Answer: According to the calculation "DOTCOM POSTAGE" is the highest revenue generating product.

12. How many unique customers are represented in the data set?

```
unique_customers<-unique(Online_Retail2$CustomerID)
num_customers <-length(unique_customers)
print(num_customers)
```

```
## [1] 4373
```

#Answer: according to the calculation, there are 4373 unique customers in the dataset.