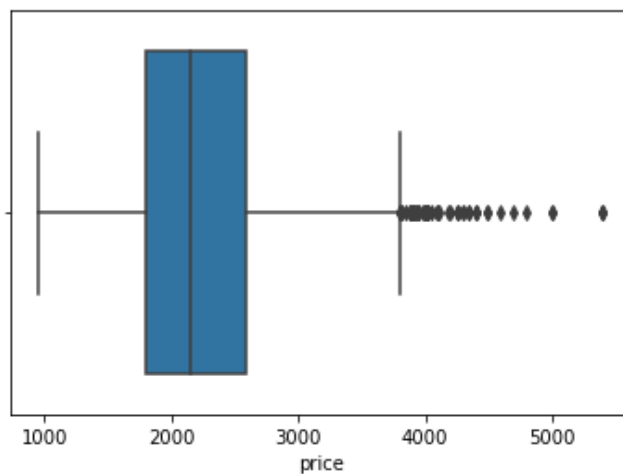
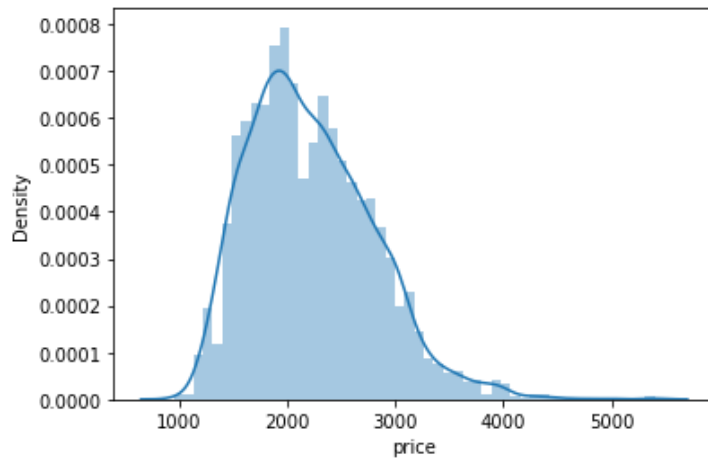


### 1. Variables:

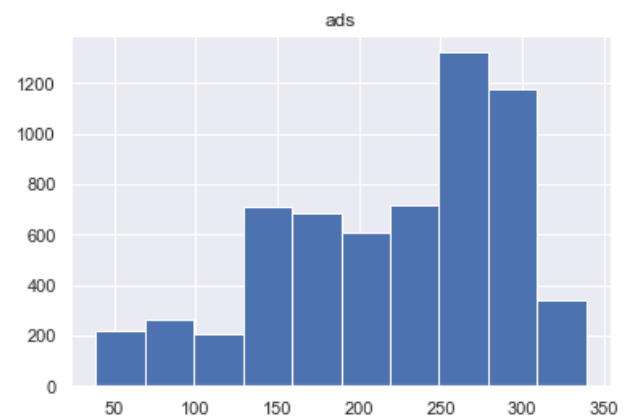
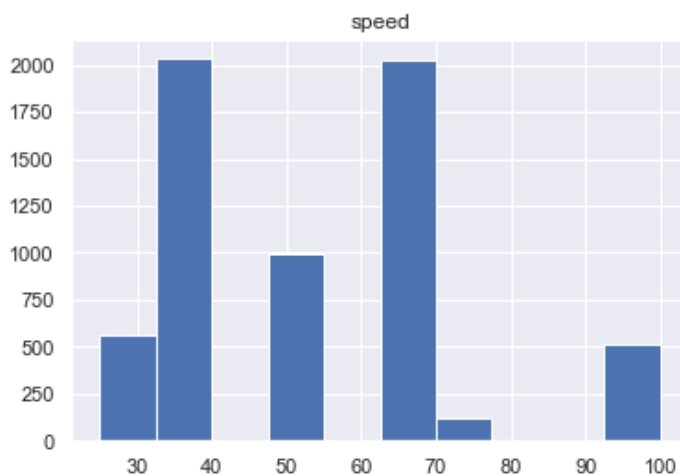
- Numerical variable: price, hd, screen, ads, trend
- Categorical variable: cd, multi, premium, screen, ram

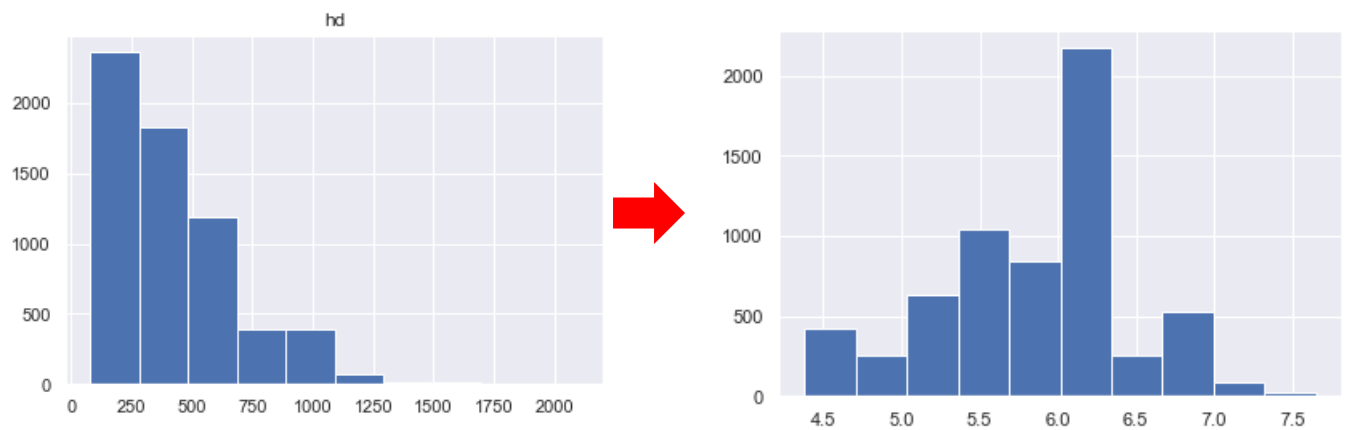
### 2. Distribution of Price



Distribution slightly skewed to the right, with outliers

### 3. Distribution of numerical variables





'HD' is normalized by applying log transformation.

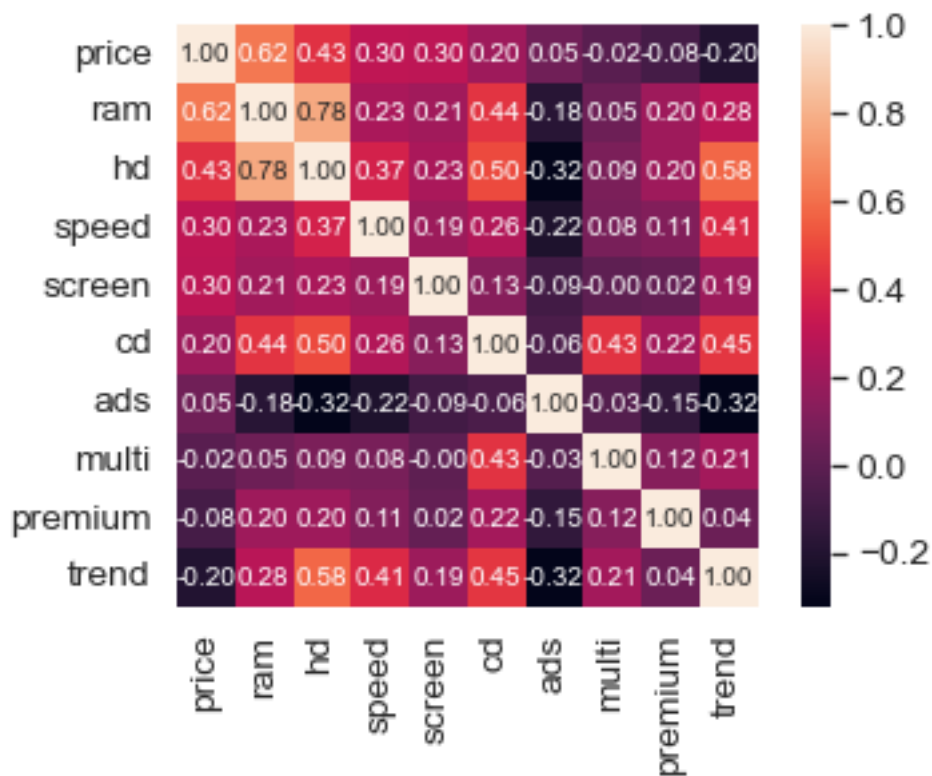
4. Check for multicollinearity between variables based on heatmap:

Price is highly correlated with RAM (0.62) and HD (0.43)

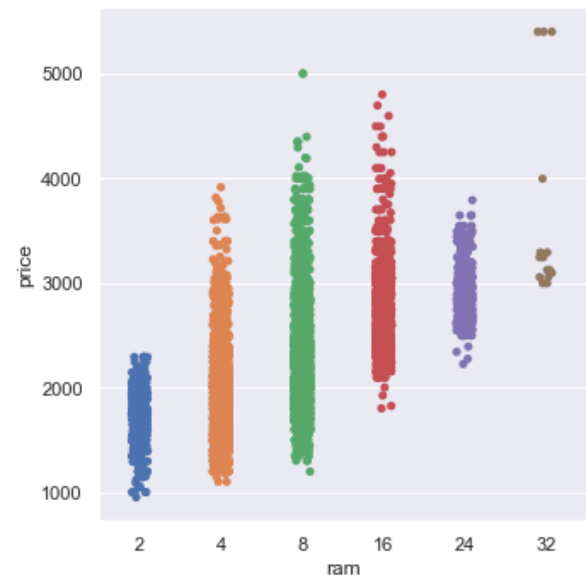
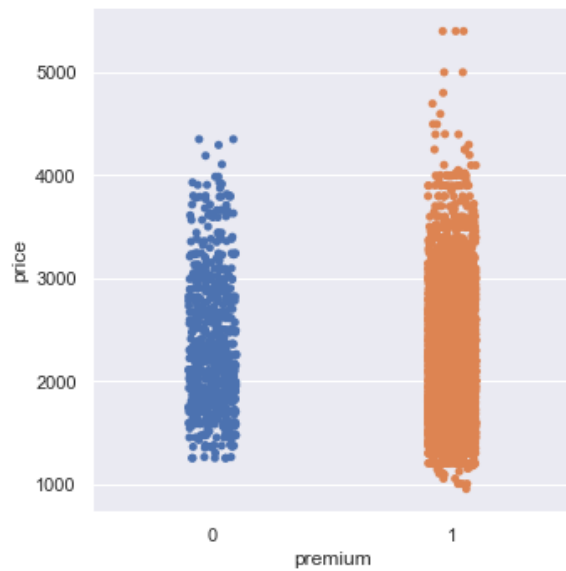
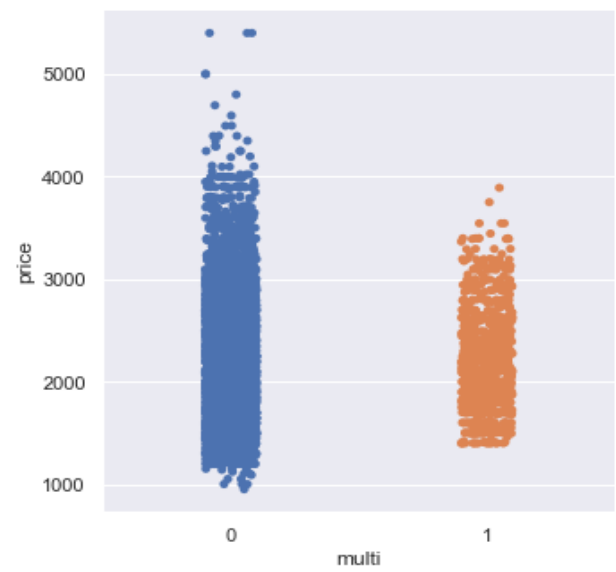
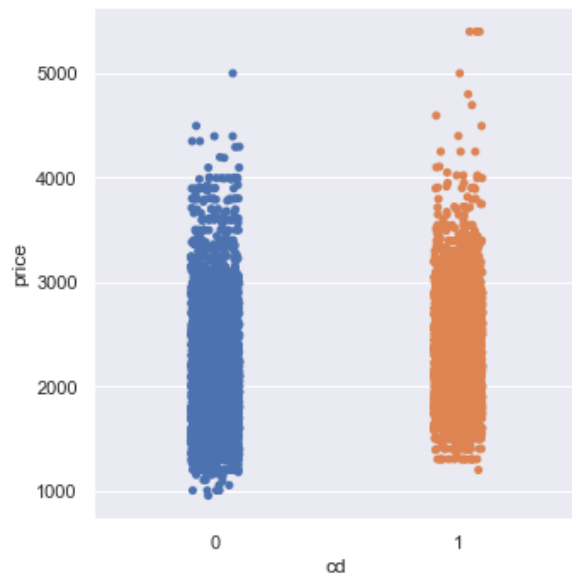
Correlation between HD and RAM is 0.78

Correlation between CD and RAM is 0.44

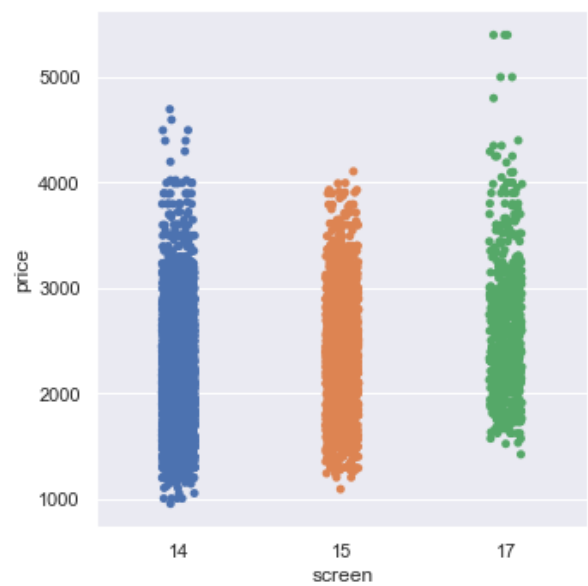
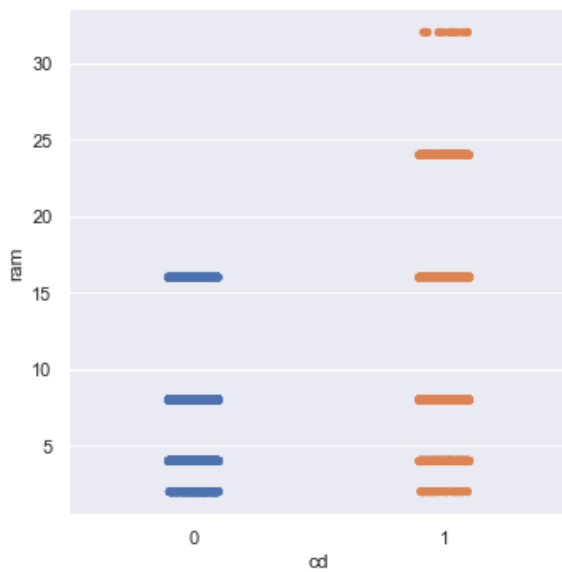
Correlation between HD and TREND is 0.58



## 5. Compare Price across categorical variables



- i) Multi and Premium show high correlation with Price.
- ii) Computer with no Multi have higher Price
- iii) Computer with Premium have higher Price.
- iv) Computer with higher RAM have higher Price.



Computer with CD have higher RAM, so higher RAM will cause higher Price. Larger Screen have higher Price.

6. VIF:

Variables	VIF
0 price	4.455684
1 speed	1.778995
2 hd	4.747040
3 ram	3.949940
4 screen	1.245590
5 cd	1.871565
6 multi	1.098532
7 premium	1.377403
8 ads	1.215409
9 trend	4.030482

Based on observation, correlation between independent variables are low. All features do have correlation with dependent variable (Price).

$R^2$  (before log transformation on HD) = 0.776

**$R^2$  (after log transformation on HD) = 0.795**

Predict sales of the computer

test\_rmse

266.75616660065594

train\_rmse

260.7478820331692

→ Prediction

Index Price

5318 2973.8653326619446

3517 2705.915641169562

1209 3257.357390327898

6048 1981.1814353151385

2526 2042.2098094337998

5987 1432.7915007331267

5771 1293.5515103618197

3235 1546.5005359715417

2882 2577.748427598229

5152 2747.590673814756

4479 2107.8849140700277

4561 3017.5176485308134

6167 2218.348148112743

5947 1755.63375323042

4557 2015.6495542602247

6123 2476.971389106335

6225 3018.575147465851

1429 2179.905046983868

2466 1954.168610382445

1854 2644.4162726568875

1898 1429.6947443286476

5226 1887.171581958679

2835 1992.1412644022496

5276 1780.5934461838367

6240	1532.356698352047
3747	1423.9242771862469
1862	2080.27259519
708	1944.13856458507
1050	2811.792654049745
4026	2401.2863808188013
342	2857.1021200748482
1759	2331.62153469029
3855	1949.319147031106
3925	2425.3902064714034
1717	2528.9178581528645
2540	2204.5667372282983
565	2014.6666271477939
3808	1957.459661047912
3	2805.804973496567
2989	1221.0816134989782
5426	1709.1410953758902
3612	2866.639297014309
3441	1799.698953469934
3574	2785.8845192792414
2909	2684.2862489548315
3900	3287.321382041424
4193	2231.0193392464357
2194	2184.7223850911723
4287	1449.0209416916696
373	2256.2771201870255
3227	1116.6699615992966
3168	3204.1134034787297
4398	2890.8191141591533
4012	1872.7451934073915
3438	2256.444512421362

2423	3079.0832346832995
5631	2734.03596458221
5765	2241.345653631647
64	2084.1252924529417
5248	2034.7749205713642
4709	3071.4801982600366
4860	2305.597577262948
1809	2316.270877652321
5104	1061.4840962797061
1745	2629.39100502825
4889	1887.8249118357767
4700	2942.3675645591898
4719	2735.2224859842026
692	2419.2326159701392
224	2470.436484447914
3177	3449.888956916921
1505	2304.50388305859
4388	1483.3126593420466
610	3152.569578837614
3721	2042.3060792603628
3535	1740.1407075519896
3994	2377.9542678867906
2638	2050.0844947593787
3037	2295.1598832010445
3457	1971.778016697639
1527	2689.728592983251
1499	1888.976788912632
4493	3067.865315612885
4300	1932.000787283208
1234	1898.718013723997
1703	2730.099339024608

4107	1672.3181889357659
1749	2168.829373078098
1748	2454.376016004378
6138	1624.4130022299107
63	2347.8992416218357
1118	3173.2489746837055
2017	2782.608054350306
3233	2144.3022200484174
4249	1455.5471839871125
1591	2144.579113433453
3527	2712.197284908747
439	3046.839387262581
3289	1777.8705481248337
3823	2417.7522251230816
4960	1990.4935426557636
1453	1947.608211922457
5863	2074.4122884350263
550	2717.3520243127805
5536	2564.7394586595965
4257	1886.3143611893843
1466	3410.592859567582
499	2607.280226731279
4771	2029.6657274420647
137	2361.478717744255
2901	2236.4758352777076
798	2843.6235177774506
436	2637.2593647709227
5265	1753.5706639261748
4088	3132.0013295909616
3320	1635.688122621603
5234	1943.2342544757073



6056	1264.6266325080994
1830	2413.81655415258
1501	2795.5825890963897
380	2448.1945252460346
1148	1805.086079115335
4667	2024.9059479052476
4807	2844.204736757818
1089	1496.2113561852173
3348	2201.7617426197426
4215	1846.009142467699
2442	1977.272482428383
414	3419.5576401522203
1192	2417.9452951586545
729	2024.3142618196357
1477	3311.567497506477
2930	2018.2610397602384
926	2356.640166729363
5751	1593.2957762533965
4995	1262.2718650868128
1061	1878.7750340916039
3875	2126.823967051845
5665	2146.028002350641
3804	2668.882525958027
6171	1397.6757401524048
4283	1821.6651079300689
4182	1611.8896116746712
2205	1803.2331846366974
4601	1345.5243358831558
3654	2027.3214959527472
625	2931.5410694609263
894	2992.823223060395

657	1655.3641153382728
1412	2091.58781361319
2646	2546.5561014936493
5854	2833.6826262430704
2587	2393.1923229596973
5066	3038.518931885992
937	2601.2304703358636
4030	1902.8178697459075
4501	1519.2120974731251
3531	3412.159116344077
2260	2503.5563835247203
2862	2662.176859715371
6228	2349.0247721585774
58	3052.113888755224
6090	1627.841542502687
4110	2592.6901730263203
5683	1878.2100120157152
191	2280.1042284943433
5417	1268.3407043588657
4176	2932.8759873723693
4946	1971.697797247854
1638	3051.1849136172114
3064	3082.087862919817
4294	1974.097984541162
2492	1977.272482428383
66	2340.4971308327717
378	1640.5834374953392
3640	1263.1059143402854
301	1826.4272133124457
6157	2518.09241400432
177	2775.449519522715

563	2197.7592016938784
6080	1606.893278131274
3992	2621.0692229571114
811	1637.3463123493461
3979	3587.065647933
4291	2637.883079565877
2277	2693.2903814656956
1995	2299.428767953896
3683	2459.6823340010587
711	2524.530102664078
6258	2476.7757677970785
5706	2013.8312783658348
1842	2494.2433969684603
201	2724.738581028755
455	2559.856036214493
1620	2025.9200091231514
1525	1494.348343552696
124	2447.6227436234603
3880	2326.767484221751
4293	1271.985652446348
3342	2307.3858742675334
5186	1201.1930712527228
1940	2080.27259519
5701	1886.8326609821443
3883	2708.146464140951
5303	1900.5193203066779
834	2103.04687350249
3460	2092.2035379540243
4353	2783.2749119390414
3783	3312.243656466163
229	2874.6107139745436

1055	2504.374137352905
2104	2194.4279407899253
1710	1662.402948561848
2028	2239.8502838345416
4828	2844.204736757818
2831	2173.9352199319837
3601	2592.277910418453
4272	1271.985652446348
1236	2077.127232483233
5405	1709.1410953758902
2022	1693.204608025545
5454	1409.3968294843135
4381	2115.1541096666097
3089	1580.3841253084993
4286	1670.0079996182885
5969	1671.0660959508361
5373	1667.7849202355728
4159	3137.48261444881
5107	2747.590673814756
248	1839.7241647216306
5041	2805.032551971517
5428	1409.3968294843135
3691	2277.669632798007
3148	2009.5078572704829
2657	1215.687931564788
5402	2817.699555765366
2318	1819.9955069113316
4926	1879.8113127324586
5371	996.8304970556583
4117	1974.0576604964242
5636	2392.7600394289025

4393	2590.6246159033067
2632	2534.2484480851454
5102	2248.155699106187
2333	2682.3374956473695
812	2199.2598488594253
392	2016.1156837453852
370	2326.8051827497497
2765	2414.4174433363423
5869	1995.068218051962
138	2595.598248537283
4240	2436.681666430512
2876	2648.0518467601523
1491	3086.5108471676263
4818	1307.9702921685566
3166	1861.6790536874225
1115	2230.208201556303
368	1931.5116955665758
671	3162.557683722635
2676	1577.1442521987483
1426	1679.5464100488994
2581	2143.7957241501917
5655	1669.2025822329817
5732	1655.0215529474267
2981	1805.4459241260079
2485	2498.171702333536
1046	2080.729998213391
12	2199.441005707324
1891	1718.469193575445
4219	1846.009142467699
4951	1699.5652845845273
2460	2542.06703217353

4514	1559.3963463785574
1843	2384.993328736157
87	2049.5688727615357
1239	2327.0836100327774
2624	2412.1487423655667
6115	2699.917147907964
1966	2370.1306155254497
1336	2603.339680305902
409	2896.9672543167926
4987	2305.597577262948
3101	2635.4502781475135
5693	1562.6175499333492
2756	1436.0881270733003
5166	1398.7945228028757
2870	2648.0518467601523
1024	2483.0823243510267
860	2360.9817727358313
5	3269.4686667625892
2425	1302.791452902981
3128	2274.582551739326
67	1948.3290851232389
4578	1523.161944183878
2918	1370.9537464447665
5147	1175.1218270308154
25	1769.9358682848401
222	2472.242095926802
1480	2072.0693634587165
3521	2663.032234194928
6096	1553.2976512103992
1263	2357.5426552845906
655	2300.692817738791

3400	2943.2883565669194
4421	3468.8164217880776
601	2791.1132582036535
4277	1630.2613157225496
814	1908.3315907881893
5961	1097.9381955065253
4589	1887.1478117802471
1083	2175.595823417895
1984	2625.0749937592027
5792	1333.536559610006
4963	2222.875309025829
4820	2029.6657274420647
4998	2335.0661840503935
3110	1542.8977702413843
3082	2436.253145926056
1674	1494.348343552696
5070	2475.431160608405
4352	2188.9624660332192
1369	2619.9822812457014
3719	1078.9401210264527
5910	1895.3668174247964
220	2724.738581028755
5009	1268.7981073822555
1179	2435.6581338342407
2108	2007.0847767904502
1218	2153.7876077385235
2509	2112.946992408875
3877	2295.4918454055432
1812	1726.5155336549392
6128	2699.917147907964
4519	2275.48519455036

861	2058.2037237339773
2160	2359.089435846014
646	3011.5134537121658
2869	1334.719344250087
3073	2150.033339786097
3884	2720.593688820828
350	2484.428927440714
1476	2909.220319847499
1692	1832.700792140718
5570	2833.560430445927
122	2584.4084602151765
4023	1725.5273424257805
6221	2755.20343001348
3152	1334.1466805425237
1444	2765.425272575023
3623	2785.8845192792414
2409	2392.9256720367416
3815	2402.209898775689
109	2390.7937401505596
4355	1559.02175676545
3480	2549.394503443819
3243	1475.9724734088177
828	1684.7705028661321
5907	2294.8124839435386
773	2957.26124852856
4741	1449.0264172940044
3766	1464.1087862955465
2560	2073.267661587468
4239	2920.200771038481
1438	3065.6041810271395
6142	1982.8200981796404



3702	2701.170051638721
1225	2567.817428104443
2352	1362.449724446126
4862	1118.9259744364672
5785	1480.2468506380617
5128	1818.2242631502224
1993	3185.7850767335467
4243	1305.675051041324
5289	2433.131988414503
3956	2720.593688820828
1334	2630.758074680241
2304	1988.2253682467092
4937	2301.755258421
187	2725.4645853406246
4838	2344.769762049249
1272	1885.3740231824745
2991	2977.171945903877
2920	1955.3180570717961
4784	2029.6657274420647
871	1834.6426358119204
2796	2431.8421987305164
1763	2543.403998748366
3920	2392.7788087232457
3060	2090.4953728938353
4386	2663.543652656935
3818	1416.6845957787605
1537	2056.261880062775
4583	2568.430340904316
1455	2036.081330700285
1291	1529.6742771031109
2990	1730.2562582542876

1704	2399.0249783128156
5984	2153.9394428297473
6020	1671.0660959508361
3236	1591.7640129843658
3484	2325.0938233147936
4319	1385.6233831974569
2490	1591.5659021497781
1859	2520.002748471238
4712	2572.0452235514676
4594	2237.590621095828
354	2290.814207376097
107	2076.7616100333853
648	2311.396932444987
1579	2558.8969961925086
4896	1699.5652845845273
3494	1149.4681835891765
4918	1990.4935426557636
4978	2805.032551971517
4545	2202.2512613077815
936	2651.910030807068
4498	1750.437405686096
4888	1907.2297071067974
3505	1149.4681835891765
5993	1573.8476258585745
4453	2302.6001967843285
2171	2448.821053923844
1113	2735.9912048615915
4139	2932.3824979790807
1414	2269.3017540462806
1720	2304.50388305859
1764	2294.7983273598365

3536	2562.3251519629584
786	2335.0012727468893
1183	2672.338408292573
1570	2568.4266132547623
1827	2479.589435551511
4163	2302.7373967943176
3113	1916.7728644258423
5789	2145.6135192926313
3768	1922.2014953994055
4464	2193.5032495753712
295	2755.398749242263
4322	1483.3126593420466
1831	2104.1757738540496
691	2524.530102664078
1312	2339.829816609005
1018	1777.5580196086607
4515	1900.3095386318844
5035	2305.597577262948
5493	2123.862643995827
4917	1258.6349494094839
4689	2917.9931826670963
1661	2168.829373078098
2138	1988.2253682467092
5175	2277.6243058936325
4373	1596.6033091125603
567	1698.4737835266578
176	2334.452082665632
1640	1607.9860743038048
1488	2489.701949554793
3607	1078.9401210264527
4261	1974.097984541162

5841	1735.1066390899205
4098	1846.009142467699
6133	1927.5858083942637
3471	2101.129852319357
5672	1220.5144542918204
4235	2415.3996457061935
2905	1938.672311212765
5646	2728.983423526148
1303	2185.7070942098253
723	2287.5770822301033
3713	2213.08095011262
3909	2220.969524744809
4086	1487.4408992275569
5885	1750.1431373094574
6183	2302.6151518112492
4905	2307.647789676055
1090	3143.719659576789
2574	1641.9157402068754
4507	1666.1607538536282
2515	2658.26836361403
584	2897.4175879988247
310	2273.101368700511
4559	2202.97863921506
633	1855.821331214392
3407	1548.9552045079972
6247	1532.356698352047
1141	2304.402693985451
3200	1478.126282233257
3970	2014.5968011490597
4341	1305.675051041324
949	1787.2184452951344

3361	1542.8977702413843
3588	2325.0938233147936
5387	2465.214992795879
1479	2945.454722042178
2618	3119.7103860751968
5375	1262.7853387270588
2950	2954.336867281316
5746	3329.040206989942
6070	2094.819166066248
5262	2779.467007492628
3416	2869.3248447857522
1601	1423.820280989972
5800	1494.5984808779008
2452	1662.0939647125022
3250	2127.1398461196018
4972	1832.3871222156727
4546	2086.4038780367
134	1895.6950210113355
4144	2016.154857754378
1146	3032.192849558258
4871	2006.7541729705144
3297	2500.5305266720857
464	1954.199912585585
2865	2580.9461867288323
5383	1287.7587551268946
3902	2163.6734514786276
3693	2779.562055830469
5866	1808.37287777572
5038	1553.2001231580489
4643	1406.581786527546
5421	2277.374698884624

5347	1982.0357960260642
2311	2058.753430809433
5561	2181.3748132850005
5811	1555.4970870837096
337	2975.7989447507753
3857	2176.5946085333244
468	2631.321229833302
5477	1356.6579377295436
294	2234.47254989117
1533	2233.9758204958657
482	2227.5301313047657
5752	2292.626214974278
2243	2034.5031711647885
4735	1522.4311077997327
938	1973.5449521129292
2704	2848.945095447082
207	2611.055790022141
80	2673.0482060450186
4183	2318.0965804302755
4132	2231.0193392464357
4365	3203.5821871288545
1847	2557.896193537478
6041	2630.091481890927
231	2544.887310043323
2016	2131.8321740073743
6129	2704.2468506085534
17	2347.2148289055276
4504	1231.8866051320465
1813	3290.7009937494868
5994	2738.341522265337
4899	2903.1953797728884

1385	2744.0950626887116
188	2925.9063445794495
2774	1362.636587945291
2448	2599.875073166122
1259	2945.454722042178
2114	2346.9962180943694
4950	1747.1646590308728
4462	2177.242619260621
3885	1714.852535257483
3851	2968.6267918496037
1418	2843.0067796131757
778	2843.6235177774506
963	1537.2616930900367
5001	1633.1310559592198
3285	2374.9140246151956
705	2014.6666271477939
5415	3145.1412602208593
3371	2548.930199028105
5723	1635.6546060033486
4212	2151.6524378068084
5372	996.8304970556583
1621	2322.2167217341757
296	2334.5567944949257
3628	2612.6728190450303
70	3091.4776816407143
5346	2100.7798316450207
2436	1775.7316954636115
5003	2532.8730387651663
2215	2434.1670925068943
4010	2621.0692229571114
4394	1305.675051041324

371	3026.304555359549
4275	1596.6033091125603
43	2420.2724384306603
2899	2893.006546406157
3936	2199.8604222849644
4679	2057.5740908110192
426	3010.604985067902
363	2825.342119694041
1816	2503.3601475314395
3130	2791.4587847433218
4262	1305.675051041324
2949	1825.034580461656
85	2742.6906375540275
3132	2552.2045519353233
792	2055.2802471686923
2644	1690.7819829498571
1471	2251.579497145299
4753	2844.204736757818
2361	2409.7677817351664
888	2044.0730146756532
2031	2683.1907824039754
5184	1061.4840962797061
1246	2731.604538599618
3794	3309.539984102931
2976	2347.014361737033
3685	2219.308366612618
6016	1745.609987243124
1153	2882.3207166124694
5640	2434.291698690633
5616	1710.4741999195585
1363	3208.7712268851647



6224	1346.2501632115795
3160	2250.810790685464
2902	1690.4190903294507
6185	3171.214458845957
3033	1944.7170738854636
6197	2102.3953517833897
3081	1509.8560627457753
1922	1579.5668772744361
912	2096.3291754297343
5099	2144.991311299461
1478	1596.4890944739661
5385	1577.4698072037186
4859	1951.6920011054071
5698	2163.8410130199
6101	2799.4416137716817
2078	1534.1445342298198
531	1690.690048888688
1001	1607.7897556527607
5596	1918.7525408484228
3922	2071.097391799021
5263	2183.502099882139
2193	1675.2006593552676
722	2573.6032728211003
5632	2009.6204567955187
5008	2954.9046849173055
4619	1812.5259152801066
369	2334.5567944949257
5364	1471.2888946826724
2806	1641.9157402068754
256	2874.6107139745436
3934	1537.5620079373562

2716	1436.0881270733003
1929	2322.532639999834
1004	1701.1374257908817
4588	1670.110600564381
5598	1937.7496614217766
4305	2188.9624660332192
4232	1344.1291585243828
2154	2739.74931199508
5277	2113.446240805868
1233	1808.2469715288798
1219	2374.5078005495634
3232	1505.6074931176497
2437	2859.6280229674962
3950	1714.852535257483
1911	2104.1757738540496
305	1929.3578867421368
3248	2674.813593030376
5564	2587.9207455319447
2955	1984.9501141308447
1290	2181.051434582575
1772	2737.152783500037
3090	2623.982714726813
3290	2435.230478119654
3954	2517.2766909867987
3189	1337.0701571078089
678	2636.4212549336285
1896	2845.475189267715
4245	1749.3540127190204
3077	2078.6613435216577
883	2812.9719520749627
375	1896.9552758751697

2380	2577.941558492315
3018	3078.450947242489
4825	1888.609602316617
1540	1830.546983316279
5812	1339.1907255126139
1945	2785.171655039697
3921	2996.3931239701874
6017	2144.8787189984178
3347	2870.8028551263865
4508	1556.4728698132722
3708	2297.9761716830926
2591	2207.147777976572
688	2374.6579697182897
3641	2392.2726235365176
6252	1547.615881749041
3928	2512.874019362219
6008	2822.0152953489905
4767	3135.1329948290545
3564	2099.4432193615107
5913	1641.9960224793108
3801	2226.1341402149505
2072	3117.5276550663693
5562	2828.5078893898644
3255	1837.428794042778
3587	2089.9040547859786
447	1804.3277796397967
5022	2455.4697102087366
4879	2701.3426848455774
1166	1898.718013723997
3093	2631.7273564230745
381	2564.029626771747

1952	2612.1615963209883
5773	2448.8941395371025
5247	1990.6584449924933
4528	1381.7587380778348
415	1828.0329288222672
5319	1577.4698072037186
4422	1480.3702324368237
2672	2749.4206295833656
1297	2286.303096327491
2092	1673.0468505308284
5502	2917.8657987186407
1107	2378.849406556032
3995	3027.5684322400493
5870	1907.8973436394372
136	2584.4084602151765
6241	2249.5003062948604
1040	3264.3556221939425
5498	3217.6100646102177
4574	1812.5259152801066
4284	2763.068118520652
2272	2152.8756454152985
6145	1782.6002981517806
1567	2258.2168441845624
5157	1958.372394669964
630	1805.2362482840613
3405	3166.383562905886
11	2711.2006965018963
203	1978.6264810226394
4135	2705.600525870151
2101	2800.0528462230986
5160	2058.8483985694356

3812	2848.344684459329
3549	2726.3105497961396
2736	2810.895340123261
4885	2455.7029999315946
5312	2474.4303579533757
5747	1696.5532122091574
352	2598.0666581918226
4773	2862.9734816227037
2740	2094.565922154518
2541	2646.080567357366
5801	2448.8941395371025
4611	3208.9214407383324
3626	1078.9401210264527
4389	2002.2671257569775
5929	1680.621882137219
903	2311.827341874748
309	2561.7871957416387
5063	2398.0278320519756
205	2206.4404031513354
485	2564.197642220962
4577	1897.3860620665992
780	2316.893482833624
760	2205.1523801144804
2080	2344.3000737357133
4400	2276.039707217059
283	2162.7922743364725
1920	2101.4903030677497
5816	2366.272629635185
4221	3510.8732950012936
0	1792.755475860237
5430	1384.509924790051

1904	2695.6030563219265
3694	2373.4185862370314
1078	3241.5205435713815
4443	1932.000787283208
3740	2777.8285742503413
3620	2377.3202420661573
2590	1795.3906388828213
4668	2917.9931826670963
4645	3129.793741219577
642	2259.317082300951
4680	1525.6914911462868
3208	2449.343743007046
6229	1949.7560404032836
990	1757.661888598549
451	2296.3461725175957
2079	1901.20785364012
5284	1146.7026300014468
3164	2158.4154849358097
425	1690.690048888688
5392	1844.5197863633741
1264	2032.3226795629776
1011	2149.160163782207
3938	2543.266023901137
2446	2715.648421276763
2144	2205.940092968922
395	3104.7618521245786
3042	2770.0979337770787
4639	2041.3656637573322
3341	1724.1381442722643
3669	2094.334342805182
2112	2169.2919572687592

1196	2291.5784944493416
5950	1500.9398973538628
5724	2666.016895526762
2456	2172.5254765282293
2549	2125.431869809409
2464	2125.1012860114433
5133	1211.3562292254944
1010	1898.433749253456
2267	2371.4177253674143
462	2853.229272260233
3973	1922.2014953994055
5264	1136.539472028675
3046	2179.3036744717724
3330	1450.7078878589177
4997	2014.023368567097
1496	2945.454722042178
4850	2444.2942279129666
5738	1800.5452626146225
2822	2143.7957241501917
364	2739.1227833172707
3590	3167.1109408131642
6042	1509.6748080390123
5293	1914.0844913687786
5112	1755.7611371788755
1226	2327.0836100327774
6174	2645.843409642821
1709	2807.680846062761
5916	2074.4122884350263
3632	2495.4266264606576
2177	2221.5455924216258
1075	2929.7449071292554

5461	1611.3517936061007
142	2584.4084602151765
4172	2436.681666430512
5731	2024.8018289489796
1258	2708.873553229891
255	2206.4404031513354
1472	2470.110148299913
5012	2188.1175276698905
5503	1751.4999251258423
2691	2179.053889798698
6169	2418.5679481406023
4471	1635.7162819679115
4423	2378.7089231166956
4211	1902.8178697459075
4582	1912.0503811438236
1465	2339.829816609005
5365	1822.5179827346315
3774	2378.929749726024
3917	3587.065647933
3266	2102.036485561747
4708	2494.6418949950375
5905	1808.37287777572
2457	2262.8191253546634
1036	2025.723690472107
4158	3152.782693487593
549	1918.8739790351701
785	2227.1655892217377
5141	2041.1987793291491
740	2993.495650723239
5980	2294.9955679551954
4358	2977.668363688982



506	2527.963240026282
6087	1564.3708983996762
4031	2131.4948733827187
2917	1730.2562582542876
4429	1896.347575004137
3109	1187.1980241620206
4113	3033.8385017895903
2335	3247.2380278303312
4649	2776.5891197954033
1982	1359.1666817659238
1783	1779.5200270693356
5353	2227.0839715569773
4891	1699.5652845845273
741	1928.2745704205822
1317	1552.4938846785078
434	2294.7537566112715
496	3160.4771180136904
5893	1566.5509860647371
5927	1667.3167526502723
2558	1436.0881270733003
4476	1746.822523038944
1285	1950.5316884877425
2173	1313.7443387213075
1073	2300.7362641190266
743	2243.0024359782537
824	2886.733185965836
3720	2223.546453291243
172	2213.503212830433
524	2118.9611868935035
1131	2114.196809249935
5337	2973.8653326619446

5540	1508.5192357977712
944	3284.145364020789
1760	2145.7255010321596
966	1808.2469715288798
1293	2086.2731123752064
1304	2339.829816609005
1422	2251.579497145299
759	2311.827341874748
4093	1846.009142467699
2305	3018.0031892026523
1747	2317.875115727707
427	2343.7974467124495
3756	2312.654219334359
3661	1440.396441660413
4980	1443.5122391176928
4362	2207.616514462764
1950	1788.9972561381687
5821	2034.0116738464874
1378	1820.6025351743472
140	2434.536327269388
1793	1902.634986889278
6182	2808.3182755298694
4067	2236.4618664026525
712	1750.984043100455
3426	2514.474711362479
3788	1979.4602267764524
3182	1696.37266891733
6165	2346.099143751244
358	2966.398244819489
3291	1337.0701571078089
4444	1593.0005433824028

3580	2042.3060792603628
5015	1734.440497188929
3993	2781.792878801858
179	1890.4351032155907
312	2975.7989447507753
3682	2490.9579728172666
1103	1898.718013723997
2310	1935.3989264720715
2459	2317.355171360703
4629	2341.3881691249558
5520	1784.9801369573124
346	2046.827408820958
3370	2529.526929973079
3744	2014.5968011490597
658	2508.6932559075617
1266	2366.9474682407053
525	3066.5512301472486
269	2719.6753740791087
4138	2301.761914955084
5586	1661.314845308845
5744	1696.5532122091574
1838	2079.9255142094053
4568	2917.9931826670963
3510	2612.6728190450303
2010	2978.711064606748
2877	2156.4995379435395
3414	1792.4592720624476
5045	2214.314273541984
662	2524.530102664078
4737	1838.2619352345455
1241	1967.0922674622818

1080	1878.7750340916039
2319	1584.7296171601504
2854	1944.7170738854636
1789	2978.711064606748
908	2843.6235177774506
970	2702.484625999225
1247	2116.96440040807
1305	2795.5825890963897
3707	1508.7706953986976
612	2783.5655645471033
4204	1861.937005777293
2056	1921.212521394275
4079	2022.9989270451879
5384	1526.2952024239567
467	2111.5474602733193
6007	2631.907130302011
1598	2689.9532363840517
2069	2632.3048552416644
227	3025.067539031278
4411	3468.8164217880776
3314	1883.8109624947112
2615	2863.058360334475
1909	2441.0030928319516
4296	1887.8786481643917
2855	2176.3801979064874
4526	1636.452593954392
1529	2304.50388305859
4312	1483.3126593420466
2126	2650.18071327731
143	2249.7376150251116
1510	2709.0698718809354

1521	3188.571585740925
4173	2705.1070364768625
1198	2681.4551588555523
1572	2418.1416138096993
3567	1192.5778517775616
713	2732.04118269581
355	2395.708256167895
209	3054.346219269174
2592	2965.3129439095655
1820	2726.778364591789
238	1978.6264810226394
3548	2312.691208950966
2106	3040.8382678252133
2295	2933.2887215621317
1188	2073.4903168059045
1541	1850.0480896320596
1751	3227.6035973350336
797	1996.6488241588672
1680	2669.9739832783125
5436	1534.3820577358392
3568	2392.2726235365176
2383	1809.0426210930052
796	2843.6235177774506
28	2978.5404086913527
52	3009.715716961214
6036	2594.739833846772
1425	2204.155306628513
6033	2381.214904331966
4579	2589.755206747657
1835	2978.9790871347896
4049	2631.9541112092443

574	2620.773402934911
1991	4436.6535075568145
1644	2109.9210376516285
4671	2418.5582079585274
4981	1118.9259744364672
116	2511.3508506900434
5149	1105.3055210663347
3781	2021.7259612631226
4532	2795.705802406534
5370	1287.7587551268946
3300	2194.649887130489
992	1775.8443606619128
821	2699.334221323854
1238	2253.1184580532786
1288	1800.659555541954
3577	1683.4658767941974
362	2484.428927440714
1459	2725.054526533666
838	1805.4009173584982
5633	885.7650316378231
2563	1721.939099754812
6038	2530.5670160272102
3754	2890.6673715392826
228	2130.2320955485548
3496	2462.800686099242
4155	2131.4948733827187
1614	1783.122792799493
2186	2650.18071327731
195	2383.825388775428
2038	2842.5517127024295
5267	2782.4615404544256

2621	2406.4038442330248
5486	2070.0478880360124
4989	2301.9576553199395
752	1926.1207615961432
2483	1591.5659021497781
3975	2996.3931239701874
4103	1712.0648728315045
4295	2307.1409803264805
5019	2455.4697102087366
1664	2760.256655545975
5839	2036.4229425502444
5599	2064.3165471561824
2458	2550.8239068606144
3828	2629.4853602779076
3893	2996.3931239701874
3326	2531.7058349419476
3097	2904.3691375871526
4572	2103.454173351343
5589	2969.564014515313
2622	1574.990443374309
4506	1224.64692372456
4171	1963.2464470070022
765	1787.2184452951344
5998	1964.828321104608
1122	3493.668419653149
2127	2448.821053923844
3785	2781.299389408569
5333	2973.8653326619446
2802	1759.1562366881421
2833	1512.0098715702143
4041	2892.4344389178973

4783	2155.0233049657727
1865	2677.7271982862812
5713	1340.9757008786057
1195	2882.3207166124694
1652	2047.5181981034636
2895	2315.7764838454423
4640	2129.287285011334
2694	2519.967082052025
2925	1904.970389989725
638	2128.304357898903
4845	1813.359365870969
5210	2643.9008066888164
3729	2701.170051638721
5730	3101.7647454877238
3709	2106.5723794755736
1685	1853.650855362217
4610	1596.2195537090108
4054	2415.3996457061935
4617	1231.8866051320465
4715	2002.2473330677262
5704	1908.492859009616
2035	2266.967935466242
5017	2904.557017835234
4115	1572.7937230720488
1716	1812.2750815076363
5060	1618.3671960223428
5931	1627.331703402086
2120	2034.5031711647885
5271	2213.8287572603554
3859	2207.687226314425
2844	2565.589424278905



2564	2204.6913712045675
4702	2635.6980201204856
1322	3363.168669050796
2294	1498.5114091716728
3642	2853.253410034195
3819	2004.563587334307
2148	3233.5813373962455
3127	1116.6699615992966
518	2340.9208187694453
1548	2233.9758204958657
2237	1893.4470460393409
3390	2650.402659617874
3456	1733.8324942162062
3952	2447.321417229141
450	1620.1619863259639
4285	2524.2453488147685
3553	2462.800686099242
1623	1694.805559428815
5976	3044.9610541506195
5304	1877.0207142413844
2372	2498.171702333536
654	1769.0018460893816
5201	1949.3122948137534
930	1525.7679128818027
954	2993.495650723239
1035	3010.6908568805957
3321	2543.6401948604707
3981	1563.6332521592635
3656	2304.0228342531386
3913	2417.7522251230816
1632	2050.947178824791

1999	2675.2845713420943
3075	2463.8860534463192
2381	2226.584723159984
1826	2494.2433969684603
5824	1526.1185022476664
1222	1748.5616163076677
1957	2776.2541880715553
3439	1686.4083036994202
2979	3198.41114144237
51	2049.5688727615357
2356	1593.7197109742174
4598	2228.811750875051
483	2196.26192791384
2693	2810.4994678027174
5251	1880.1179120475538
2096	4391.231164512198
2743	1583.0367834538033
842	2799.885535720891
5423	2157.8292233170514
5252	2283.0265657458567
4316	2336.566776105553
3673	2363.2879683033516
5965	1742.1814469703477
4746	2128.462815398503
1634	1808.4432901799244
4612	1456.948403949555
1392	2113.938550035975
5630	2587.9207455319447
3116	1557.4703526163214
3528	2164.862405367906
2597	1399.8537248786206

4560	2015.6495542602247
1837	2782.608054350306
4237	1866.2827248085898
2729	1788.8643965873785
3555	2729.8741048377506
4872	2805.032551971517
5826	1594.1229467416179
2198	2071.0846543400635
3022	1484.5914771958753
1628	2689.728592983251
5516	2822.9919394130416
3513	2277.669632798007
1890	2266.967935466242
3838	2668.882525958027
2830	2021.531597306119
2360	1977.272482428383
1189	2014.5164579790678
2291	1313.7443387213075
4791	1560.664778061016
1694	1785.276601623932
5308	2410.777561384358
5908	2170.6593147798903
5594	2705.04671945281
5167	1239.1217045804287
4324	2492.346653867805
668	2076.2215267229044
864	2847.309726237677
408	2527.963240026282
1998	2252.00457743711
3663	2597.7204375746696
3112	2823.6143598520857

4925	2529.030719923218
5427	2635.74699559899
758	1637.3463123493461
1255	2417.9452951586545
3467	2099.4432193615107
547	2750.0589856847373
1484	3036.867845487473
5928	3047.2075557578773
3318	2905.096515494431
2701	1286.2159941275117
3942	2021.7259612631226
4774	2267.599723215678
5240	989.5908156481719
899	2404.0914409242164
2263	2155.332052187303
5403	1812.3985313316512
1815	2809.240787073036
5443	2277.374698884624
733	2252.919006448278
5447	2244.8147972873667
5688	2190.113281226616
478	2559.856036214493
4066	2314.9708527497514
5245	1807.499459069146
905	2241.299279312024
835	2346.2085052399284
1172	2708.873553229891
3862	3287.321382041424
3220	1116.6699615992966
2932	3120.282007908375
1970	1472.8044125170327

4734	1271.7358899738774
3044	2369.5896015928943
1924	2352.586270971586
2259	1988.2253682467092
5420	2418.430824010072
261	2497.463119526537
1899	2245.4699047584827
844	2510.85390568162
4490	2817.030668249876
5282	2474.4303579533757
3133	2044.7777541847004
1679	2331.521496996125
3199	2435.230478119654
182	1895.6950210113355
5243	1471.2888946826724
5034	1990.4935426557636
2664	1574.990443374309
2279	2341.3765971704283
1497	2204.155306628513
2953	1694.0218560596086
1169	2192.15406627979
254	1689.852031775842
4762	1158.0981592227681
2396	1302.791452902981
2772	1792.467162317536
5052	1642.1234064277662
2555	1577.1442521987483
2790	2749.4206295833656
5040	2805.032551971517
995	2417.9452951586545
4803	1596.3221546551026

874	2602.755599945984
112	2811.6388614618895
6105	1556.8340055632939
3795	3095.9175898339045
568	1944.13856458507
1879	2392.4185611389858
6158	2418.5679481406023
1726	2281.4000110126517
2050	3054.746702099656
24	2864.2729255737927
1248	1808.2469715288798
1603	1994.9540237740948
4363	2272.913979536535
6139	1627.841542502687
2639	2184.873280863349
1509	2190.9612818853866
3637	2866.639297014309
4854	2344.769762049249
5831	1407.1892411129286
3526	1799.698953469934
3102	2484.601908655552
178	2099.8654820793236
3346	1625.07493861376
3453	3053.473210062055
1846	2033.6477112913258
4035	2805.1249917338682
4033	1945.533608331416
694	1584.836052775549
3809	3284.3732088491843
3048	1694.0218560596086
3253	1951.0665247938873

1936	1935.9459125186718
2233	1675.2006593552676
4214	3208.1808559174774
6209	3071.68999298224
4603	1812.5259152801066
299	1929.3578867421368
360	1999.8859493048608
4087	2568.8353336935934
2029	2986.531314393163
806	2146.5209571046553
480	2559.856036214493
2728	2919.9467820461327
5904	1238.994320631973
1161	2963.2666663638097
3308	2044.7777541847004
3633	2377.3202420661573
1518	2304.50388305859
2505	1452.6635858487693
374	1931.5116955665758
1494	1679.5464100488994
2731	1215.687931564788
3585	2214.016836228989
3746	1817.1408691507868
4074	2250.5751312900447
5888	1941.7402883708876
3834	2354.0994285540637
548	2076.2215267229044
5067	1352.4123543509422
3229	2056.611783556878
697	2259.317082300951
3159	2791.4587847433218

6173	1683.0758322880636
1641	2615.8508037715483
3951	2848.344684459329
110	2957.081652849311
1994	1762.4644033709033
4456	2422.2907947915337
4622	2048.209733048142
5074	2766.3594186796417
3624	3152.9976759257715
3511	2377.3202420661573
1119	1967.0922674622818
5687	2293.2355735651854
452	2457.4080937854906
4477	3193.99443032124
45	2479.4187796361157
1337	2133.627244065789
2345	2568.69976489626
5725	2660.964354470699
367	2598.0666581918226
599	2259.317082300951
2210	2443.8039034865346
3000	2008.133280958934
1357	1818.448726349908
5572	1459.8158980428489
859	2290.4537101731075
5925	1420.0354950056071
4867	1924.273606731068
474	1961.675327327531
2667	2642.658164825962
2999	2342.1712072185555
2102	2544.1955064877816



2052	2941.1089713485467
2951	1758.0217336092219
6205	2992.345922599175
5560	2734.03596458221
1633	1853.650855362217
249	2340.0828016565993
3214	2284.1217163148576
4330	2991.781628576374
4199	2136.9374005389354
2417	1977.272482428383
3139	1337.0701571078089
3848	1423.9242771862469
4072	3310.653494973434
1884	2959.1129200188243
6190	2004.2721484916744
361	1896.9552758751697
4489	2568.430340904316
4943	2036.1799687495873
1047	2440.6762805283815
497	1981.6183069599242
1947	1579.5668772744361
5966	2364.950841712853
2860	2192.299074272767
1091	1887.8327660671234
1934	2643.5145290428227
589	2330.9153825994613
500	2111.5474602733193
1872	2251.362436013538
782	3248.189506599796
1461	2216.9752976007517
1114	2573.199043249399

1016	2567.817428104443
4095	1601.0786299786662
698	2919.0536161681844
5011	2596.525835334184
2421	1989.603705959013
2441	2667.7979806762837
504	2555.2815967064557
442	1620.1619863259639
1335	3406.5173732804665
3149	2852.537622962674
3897	2079.3997765350596
3041	1669.5717119585606
2184	2058.753430809433
1561	2347.613551246975
988	1959.8525860547954
4466	2093.9787837116546
3556	1847.470224967315
3933	2213.129753470642
2703	2143.7957241501917
1301	2181.051434582575
1545	2622.5497927615265
3805	1730.063627966947
983	2327.0836100327774
3613	2377.3202420661573
2552	2057.2756450307834
1616	2803.5909671351606
6053	1423.3011268865537
4894	1699.5652845845273
2888	2227.5572399212733
1502	2885.1511878141596
3433	1971.778016697639

3984	1601.5618854869695
6093	2247.1823969724164
1467	2651.176737321963
1965	2104.1757738540496
4962	2455.4697102087366
4755	3283.2807568125168
2309	2040.395702419844
2378	1819.7269052590698
4178	2249.67338767598
4772	1307.9702921685566
1918	2104.413779633035
5900	2710.984171660632
3787	2781.792878801858
1795	1359.1666817659238
573	2337.8347623878362
578	2669.9278337959945
975	2567.817428104443
1791	2553.509527275505
1895	2386.7989402150447
701	2329.8451448636747
1005	2211.7427226154387
1543	2584.656347695286
2180	2689.978670513601
4717	2515.9667608383793
607	1655.3641153382728
2344	2221.1421960037674
762	2056.3070957020122
2741	1704.149928946858
5988	1187.7433252022138
3573	2597.7204375746696
3538	2223.546453291243

614	2329.8451448636747
6223	1847.3601476406177
2776	2143.7957241501917
4073	2881.0444727478907
5764	1966.4070878490488
2502	1811.9660976582904
298	1999.8859493048608
6118	2514.1386855615738
3622	2804.6893601918023
1560	2364.9324603196847
6022	1745.609987243124
958	2179.7413987049513
4626	1161.3585425693225
4410	2878.1438978252645
4657	2463.3268937847556
1441	1745.153072629049
3309	2738.899892211565
4602	1962.3980482258949
5169	2747.590673814756
5047	1061.4840962797061
1848	2695.6030563219265
5707	1934.4872079827703
719	3100.3727693234764
1516	3375.266926017167
3520	2333.234337331599
5614	1361.5705794172682
3039	1658.9585279507173
1871	1720.6230023998842
3508	3053.473210062055
2040	2230.1447281357887
5151	2747.590673814756

5172	2398.2611217748336
1794	2986.531314393163
2668	2244.4380551003064
3085	1580.3841253084993
2218	2485.3561988611614
3336	2648.454664891822
330	1999.8859493048608
5787	1887.0630174659843
613	2378.9995757247584
603	2904.7509889547628
4669	1231.8866051320465
3310	2597.843767086117
2801	3042.306326532411
5055	2099.428519795412
1377	1793.1841408000082
5620	1475.208310168377
3745	1668.5747323394037
3985	2035.8392261505148
2894	1580.3841253084993
4736	1335.7357675234907
5897	2465.3444867466496
3175	2752.061619063202
4481	1596.9503900931554
4068	2544.8768700254045
891	2891.0477082942366
3912	1577.7465170466558
5830	1996.2974781007342
6193	3298.965454484458
3611	1519.7405120434773
2474	1906.744419865659
3095	2745.3650871741834

5779	1962.4545333692838
2735	2179.053889798698
1229	2554.3590715349956
277	2320.5643515021256
3750	2621.0692229571114
4433	1305.675051041324
1586	2897.2494447805307
5951	2974.738751368519
4342	1743.8990464736585
952	2106.6837891798186
5270	1530.0456166869326
2698	2599.548496637577
3135	2590.0991253898555
5883	1946.6612927965255
251	1978.6264810226394
3727	2462.800686099242
1099	2258.020525533518
3873	3095.9175898339045
2071	2309.5158504374062
1	1793.1970343817056
3946	2121.31653030901
2604	2167.743529897845
3427	2722.7020879628762
676	2892.861689291744
2503	2195.3090843437762
4419	1445.3840260143406
2392	1827.63835526158
1354	2744.3958054313503
1876	1718.469193575445
2113	2082.3475828525748
1841	3063.4255322472686

5207	1649.580224657829
4126	2772.1523315276227
4913	2116.2902767261967
4227	2314.9708527497514
1121	2364.418574877141
5703	1771.3894014099099
2771	1960.9350294318992
2167	1739.972147363395
6253	1949.7560404032836
3024	2369.5896015928943
640	1680.2430541972358
4189	2131.4948733827187
2939	1723.730015958845
829	3191.9640712504943
4475	2878.1438978252645
3594	2795.1708923522347
2553	1704.149928946858
4729	2994.0768697036065
6134	2546.926662863993
5573	2196.9885472203214
2023	2530.778541905778
2220	2200.0475617138663
6245	2455.459164121904
4797	2635.6980201204856
794	1660.165919924743
3288	2335.706012255937
2146	2650.18071327731
394	2290.814207376097
5058	2747.590673814756
5760	1555.4970870837096
4478	2302.6001967843285

5836	1538.7385865235499
1874	2557.896193537478
779	2620.104970170755
1585	2351.9280735753755
4121	2837.738348557233
1358	2179.905046983868
1020	3173.2489746837055
5159	2248.155699106187
5556	1776.2921280372047
1810	2081.0719018081118
169	2690.056573442124
2724	2646.080567357366
3907	3287.321382041424
5743	1555.4970870837096
4058	2991.9589047816144
3559	3053.473210062055
6079	2230.822750135633
969	2615.241618621229
2296	2084.803989624579
1647	1694.805559428815
2228	2512.473850492862
5080	1352.4123543509422
2620	2922.6323298175766
1228	2548.2256268495626
271	2988.132679034851
5615	1930.9491365610152
4865	1699.5652845845273
2439	2103.241436710122
5449	2718.175089901649
1517	1494.348343552696
1666	2512.662709063924



1989	1543.9337522162891
4941	1895.1238436241395
5259	2106.332061048568
2015	2479.589435551511
2887	2857.497949189043
5374	1577.4698072037186
6063	1947.806470384601
879	2647.568424800599
4021	2920.200771038481
1573	2098.3013105153736
4985	2805.032551971517
2952	2404.8477672414006
3409	1823.9492131145785
54	2961.047503699812
5471	2244.8147972873667
746	2290.4537101731075
3822	1563.6332521592635
4911	2805.032551971517
4192	3324.7667598608264
3891	1714.852535257483
4260	2977.668363688982
4682	1750.437405686096
291	2536.7643812933425
4996	2002.2133894283625
419	2252.6035853987673
5078	2539.083957177423
3286	1771.5623347890503
2312	2237.5376089783103
2963	1895.5626430243801
3516	2809.980890575431
5388	1920.5456461617978

738	2773.095455214727
5309	1893.7187954459164
2791	2143.7957241501917
4264	1819.880132564077
391	2617.733440820986
1693	2003.5229883080053
3791	2429.628293150028
5769	2095.8219439644513
5056	1642.1234064277662
3271	2335.706012255937
3843	1942.4750777402965
5675	2661.5671601928516
5330	2682.937074590708
239	2940.7084885180648
5645	2554.765493837484
278	2674.753646846664
2945	2143.0692722770928
649	2039.9871245282252
2470	1714.0006245104712
4516	2418.5582079585274
1108	2531.583025909764
1576	2435.8544524852846
1688	2679.6468187624687
2721	1811.0628964861107
3240	1724.1381442722643
5679	1449.8878127879461
5307	2579.2472074647685
2189	1531.2210576645343
376	2825.9268118049868
5846	2938.25963316285
5623	1749.9079621873811

4334	1298.4353696338376
2786	1795.3906388828213
3259	2009.5078572704829
5216	2398.0278320519756
5386	996.8304970556583
823	2624.4916364327287
2326	2403.8752504801114
4161	1810.7392455534814
6031	2394.5200338189125
2000	2412.453402150057
5198	1944.7715112716014
2099	2512.473850492862
6249	1949.7560404032836
2640	2495.494995299535
1546	2144.579113433453
1967	2239.8502838345416
4124	2136.9374005389354
2674	2071.2355501122397
2994	2534.414116009043
2548	3004.1144854599224
5007	1232.5637051875765
6025	1604.553862117676
895	2193.9451476214417
125	2426.784715524212
2884	1370.9537464447665
3104	2823.6143598520857
2402	2682.3374956473695
6251	2939.231077082786
3903	2996.3931239701874
4130	2432.461689088663
6018	1328.7994503276616

4326	2221.522644821137
4921	1699.5652845845273
2145	2277.1102969552176
4580	2667.954806768033
2900	1368.0302698794812
2303	2285.4126816912562
1868	2772.0236501397058
5335	2782.4615404544256
1409	1459.146214540387
4856	2805.032551971517
566	1655.3641153382728
4831	2155.0233049657727
279	1980.7802898470784
5571	1764.5722812646059
6019	1328.7994503276616
1719	1765.333621991539
2872	1871.3123833797354
6067	2980.7882363310573
665	3488.858507285958
4843	1297.8071341957848
985	2528.7215395018206
120	2099.8654820793236
4309	3169.072155896501
2846	2454.8327014234915
4230	2625.762966093798
357	2739.1227833172707
1753	2616.8956268589186
3554	2691.80237628217
1729	2331.62153469029
2110	3054.746702099656
3047	1656.8047191262783

3443	2337.1841840423517
5583	2065.7011972289256
2524	2981.8884026850346
4223	1611.8896116746712
3222	2080.035919833207
5064	2178.0998400299154
351	2484.428927440714
4004	3587.065647933
4673	1198.1972065370705
3225	2540.3284839083767
4455	2518.155811513948
2685	3062.5077759078304
4213	1846.009142467699
1413	1418.0958776355674
144	2952.6949865873376
1343	2175.002979503629
5115	1352.4123543509422
4983	3095.960810042753
3429	1519.7405120434773
1522	2304.50388305859
3617	1658.6428283444861
552	3011.5134537121658
432	2826.439191754069
2315	2058.753430809433
91	2340.4971308327717
939	1993.0460584287098
2678	2529.020434074853
1728	2322.2167217341757
6	2129.395674145289
3839	1748.5105418674725
5871	1667.3167526502723

2688	1960.6970236529137
887	3134.5517758486867
4984	2160.6991332955517
5618	1986.3571268458613
2346	2024.696672945169
852	2761.1610952962033
5590	3169.7838145431724
2889	2745.7609594947276
3362	2650.402659617874
4585	1934.5720022970331
3802	2996.3931239701874
5896	1379.8556457884952
6254	1645.9944291031563
555	1655.3641153382728
973	1967.0922674622818
444	2414.3255092751733
5834	1687.6824485731345
3665	2592.277910418453
673	3204.3804356163732
3368	1974.2496916219766
5105	2032.5761303627196
3322	2528.6878133901105
1097	1898.718013723997
4819	2780.414862838805
4766	1852.3752001219377
1064	2531.583025909764
4928	1409.8542325077033
5990	1704.0783279813932
5215	2943.645072580393
1524	3043.6326863588374
5660	1661.314845308845

4524	1381.7587380778348
3533	2696.343159824322
2616	1549.725857824409
5879	1238.994320631973
4001	2645.0276866253
4146	2088.6114664080847
4769	3234.6574606927716
570	1973.7735842939019
4065	3033.8385017895903
1384	1820.6025351743472
60	2998.261381849468
2651	2922.6323298175766
1230	1607.7897556527607
3678	2380.338263617994
5004	1162.7473992230957
2783	2360.294263829578
2689	1958.0115528666138
5205	1791.9955393735545
2476	2658.26836361403
2330	2715.2221711930697
1873	1938.8693890839572
1723	1494.348343552696
5088	2897.4628067605445
3186	1337.0701571078089
5348	1666.4433339436982
2070	2371.4177253674143
5977	2824.560858642107
620	2751.8055641662963
3861	2207.687226314425
459	2940.076922505178
1645	1812.2750815076363

2727	2407.3055878470896
3032	1805.4459241260079
5930	2041.2647542346047
2669	2107.8836858124023
6178	2641.5137069422317
5576	2961.311426084428
3757	2968.6267918496037
446	2343.7703630343817
6140	1510.7752714788014
1487	3036.867845487473
245	2497.463119526537
5096	1830.3830336790156
4815	1307.9702921685566
5142	2248.155699106187
2123	1890.5235694740554
4492	1231.8866051320465
4554	1523.161944183878
235	2237.152128226908
4785	3362.4084563312726
225	2526.778141932841
2254	2339.5709856915405
3697	2219.308366612618
44	3128.412541637141
3228	1478.126282233257
4887	2823.801296836403
3514	2007.0479136118565
104	1670.0349077070782
448	1828.0329288222672
3772	1751.4340184327577
5469	2917.8657987186407
4181	1959.6468732188082



3423	3053.473210062055
21	2340.4971308327717
472	2446.2183054633842
1986	2033.6477112913258
2969	1576.7813595783418
600	2519.9556631560404
1829	2389.72241678033
1734	2469.165378114679
2680	2434.723982221428
3345	2137.1730599343546
3944	2377.9542678867906
3751	3057.0977473469657
2276	2094.1614427079335
1792	2104.1757738540496
3889	1748.5105418674725
1280	2002.6145196637412
2468	3493.0135812685226
541	2665.5862277895258
2535	2298.56296461908
5231	1673.2438588044597
2247	1795.4815728915214
387	2157.171808870833
3450	2034.165565243557
1883	1834.260733150993
1662	2957.5529790085493