MR Bugiardi

Lorenzo Livio Vaccarecci (matr. 5462843)

A.A. 2023/2024

1 Codice

```python
import random

dict = {
    "P": "Probabilmente primo",
    "C": "Probabilmente composto"
}

def MCPrimalityTest(n, a=None):
  s = 0
  q = n - 1
  while q % 2 == 0:
    s += 1
    q //= 2
  if a is None:
      a = random.randint(2,n-2)
  x = pow(a, q, n)
  if x == 1 or x == n-1:
    return dict["P"], s, q
  i = s
  while i-1 >= 0:
    x = pow(x, 2, n)
    if x == n-1:
      return dict["P"], s, q
    i -= 1
  return dict["C"], s, q

def MCD(a, b):
    while b:
        a, b = b, a % b
    return a

def Z(n):
  return [a for a in range(1,n) if MCD(a,n) == 1]

def H(n):
  return [a for a in Z(n) if pow(a,n-1,n) == 1]



def MRLiars(witnesses, n):
  L = []
  for a in witnesses:
    if MCPrimalityTest(n,a)[0] == dict["P"]:
      L.append(a)
  return L

carmichael = [561,1105,1729,2465,2821,6601,8911]
for n in carmichael:
  primality = MCPrimalityTest(n)
  if primality[0] == dict["C"]:
```

```
52      Hn = H(n)
53      liars = MRLiars(Hn, n)
54      print(f"I bugiardi per {n}({len(liars)}) sono: {liars}")
```

Numero	Bugiardi
561	1, 50, 101, 103, 256, 305, 458, 460, 511, 560
1105	1, 47, 72, 98, 123, 132, 242, 256, 268, 293, 327, 341, 353, 463, 548, 557, 642, 752, 764, 778, 812, 837, 849, 863, 973, 982, 1007, 1033, 1058, 1104
1729	1, 9, 10, 12, 16, 69, 74, 75, 81, 90, 92, 100, 103, 108, 120, 129, 144, 160, 166, 172, 173, 181, 191, 192, 235, 256, 257, 263, 282, 289, 302, 335, 347, 355, 363, 365, 374, 376, 386, 402, 426, 433, 438, 439, 443, 484, 493, 529, 536, 545, 555, 562, 563, 568, 575, 584, 621, 625, 638, 649, 653, 654, 666, 675, 690, 699, 706, 729, 740, 750, 757, 797, 802, 807, 809, 810, 828, 829, 831, 841, 857, 872, 888, 898, 900, 901, 919, 920, 922, 927, 932, 972, 979, 989, 1000, 1023, 1030, 1039, 1054, 1063, 1075, 1076, 1080, 1091, 1104, 1108, 1145, 1154, 1161, 1166, 1167, 1174, 1184, 1193, 1200, 1236, 1245, 1286, 1290, 1291, 1296, 1303, 1327, 1343, 1353, 1355, 1364, 1366, 1374, 1382, 1394, 1427, 1440, 1447, 1466, 1472, 1473, 1494, 1537, 1538, 1548, 1556, 1557, 1563, 1569, 1585, 1600, 1609, 1621, 1626, 1629, 1637, 1639, 1648, 1654, 1655, 1660, 1713, 1717, 1719, 1720, 1728
2465	1, 47, 72, 98, 157, 217, 242, 254, 256, 293, 302, 327, 387, 426, 438, 472, 548, 582, 596, 693, 727, 752, 888, 897, 934, 1007, 1019, 1033, 1058, 1092, 1143, 1152, 1177, 1203, 1228, 1237, 1262, 1288, 1313, 1322, 1373, 1407, 1432, 1446, 1458, 1531, 1568, 1577, 1713, 1738, 1772, 1869, 1883, 1917, 1993, 2027, 2039, 2078, 2138, 2163, 2172, 2209, 2211, 2223, 2248, 2308, 2367, 2393, 2418, 2464
2821	1, 9, 12, 16, 17, 75, 81, 100, 107, 108, 113, 144, 153, 165, 166, 181, 183, 191, 192, 199, 204, 211, 220, 235, 244, 251, 256, 272, 285, 289, 290, 295, 326, 363, 373, 380, 386, 402, 417, 426, 433, 438, 443, 446, 484, 517, 529, 530, 534, 536, 547, 555, 556, 562, 568, 584, 599, 615, 625, 627, 638, 647, 649, 653, 654, 659, 675, 690, 699, 706, 712, 718, 719, 729, 740, 766, 790, 797, 807, 818, 820, 829, 836, 841, 872, 881, 893, 894, 900, 919, 920, 922, 932, 939, 963, 972, 985, 989, 1002, 1010, 1013, 1017, 1018, 1030, 1076, 1082, 1083, 1091, 1093, 1101, 1102, 1109, 1121, 1166, 1174, 1192, 1193, 1195, 1200, 1221, 1252, 1275, 1284, 1286, 1290, 1296, 1303, 1327, 1336, 1353, 1356, 1366, 1374, 1375, 1377, 1444, 1446, 1447, 1455, 1465, 1468, 1485, 1494, 1518, 1525, 1531, 1535, 1537, 1546, 1569, 1600, 1621, 1626, 1628, 1629, 1647, 1655, 1700, 1712, 1719, 1720, 1728, 1730, 1738, 1739, 1745, 1791, 1803, 1804, 1808, 1811, 1819, 1832, 1836, 1849, 1858, 1882, 1889, 1899, 1901, 1902, 1921, 1927, 1928, 1940, 1949, 1980, 1985, 1992, 2001, 2003, 2014, 2024, 2031, 2055, 2081, 2092, 2102, 2103, 2109, 2115, 2122, 2131, 2146, 2162, 2167, 2168, 2172, 2174, 2183, 2194, 2196, 2206, 2222, 2237, 2253, 2259, 2265, 2266, 2274, 2285, 2287, 2291, 2292, 2304, 2337, 2375, 2378, 2383, 2388, 2395, 2404, 2419, 2435, 2441, 2448, 2458, 2495, 2526, 2531, 2532, 2536, 2549, 2565, 2570, 2577, 2586, 2601, 2610, 2617, 2622, 2629, 2630, 2638, 2640, 2655, 2656, 2668, 2677, 2708, 2713, 2714, 2721, 2740, 2746, 2804, 2805, 2809, 2812, 2820
6601	1, 16, 18, 40, 45, 66, 78, 100, 122, 141, 165, 195, 242, 250, 256, 286, 288, 303, 305, 318, 324, 327, 332, 338, 433, 474, 482, 508, 517, 523, 573, 605, 611, 619, 625, 640, 652, 715, 720, 739, 769, 795, 804, 810, 821, 824, 830, 843, 845, 877, 898, 927, 961, 983, 1002, 1056, 1082, 1091, 1108, 1111, 1117, 1132, 1147, 1166, 1185, 1188, 1193, 1199, 1205, 1248, 1270, 1289, 1313, 1369, 1378, 1404, 1417, 1451, 1453, 1466, 1513, 1527, 1576, 1581, 1600, 1630, 1644, 1671, 1682, 1691, 1721, 1738, 1753, 1762, 1767, 1773, 1779, 1788, 1800, 1868, 1887, 1931, 1952, 1964, 1972, 1993, 2008, 2010, 2025, 2027, 2054, 2060, 2075, 2101, 2109, 2131, 2174, 2196, 2204, 2218, 2245, 2256, 2259, 2312, 2347, 2396, 2483, 2491, 2505, 2526, 2538, 2543, 2567, 2584, 2601, 2614, 2634, 2640, 2661, 2705, 2729, 2770, 2813, 2830, 2869, 2888, 2907, 2915, 2927, 2936, 2948, 2962, 2970, 3057, 3079, 3091, 3117, 3120, 3139, 3156, 3175, 3188, 3202, 3249, 3298, 3303, 3352, 3399, 3413, 3426, 3445, 3462, 3481, 3484, 3510, 3522, 3544, 3631, 3639, 3653, 3665, 3674, 3686, 3694, 3713, 3732, 3771, 3788, 3831, 3872, 3896, 3940, 3961, 3967, 3987, 4000, 4017, 4034, 4058, 4063, 4075, 4096, 4110, 4118, 4205, 4254, 4289, 4342, 4345, 4356, 4383, 4397, 4405, 4427, 4470, 4492, 4500, 4526, 4541, 4547, 4574, 4576, 4591, 4593, 4608, 4629, 4637, 4649, 4670, 4714, 4733, 4801, 4813, 4822, 4828, 4834, 4839, 4848, 4863, 4880, 4910, 4919, 4930, 4957, 4971, 5001, 5020, 5025, 5074, 5088, 5135, 5148, 5150, 5184, 5197, 5223, 5232, 5288, 5312, 5331, 5353, 5396, 5402, 5408, 5413, 5416, 5435, 5454, 5469, 5484, 5490, 5493, 5510, 5519, 5545, 5599, 5618, 5640, 5674, 5703, 5724, 5756, 5758, 5771, 5777, 5780, 5791, 5797, 5806, 5832, 5862, 5881, 5886, 5949, 5961, 5976, 5982, 5990, 5996, 6028, 6078, 6084, 6093, 6119, 6127, 6168, 6263, 6269, 6274, 6277, 6283, 6296, 6298, 6313, 6315, 6345, 6351, 6359, 6406, 6436, 6460, 6479, 6501, 6523, 6535, 6556, 6561, 6583, 6585, 6600

| 8911 | 1, 3, 4, 9, 12, 13, 16, 23, 25, 27, 31, 34, 36, 39, 41, 48, 52, 64, 69, 75, 81, 92, 93, 94, 97, 100, 102, 106, 108, 110, 117, 121, 123, 124, 136, 144, 145, 146, 149, 156, 158, 163, 164, 166, 169, 185, 192, 207, 208, 218, 225, 226, 243, 256, 262, 263, 276, 277, 279, 282, 289, 291, 299, 300, 305, 306, 314, 318, 324, 325, 330, 351, 355, 358, 359, 363, 368, 369, 372, 376, 383, 388, 389, 398, 400, 403, 408, 409, 424, 430, 432, 433, 435, 438, 440, 442, 447, 457, 468, 473, 474, 484, 489, 491, 492, 496, 498, 505, 507, 521, 529, 533, 535, 544, 555, 557, 562, 563, 566, 571, 575, 576, 580, 584, 590, 596, 613, 617, 621, 624, 625, 632, 635, 638, 649, 652, 654, 656, 661, 662, 664, 674, 675, 676, 677, 678, 695, 698, 709, 713, 729, 740, 746, 755, 758, 768, 775, 782, 786, 787, 789, 794, 799, 802, 811, 814, 821, 823, 828, 831, 832, 837, 838, 841, 846, 850, 857, 867, 872, 873, 890, 897, 900, 901, 903, 904, 915, 918, 922, 934, 935, 941, 942, 943, 947, 954, 958, 961, 965, 967, 972, 974, 975, 979, 983, 990, 1024, 1025, 1030, 1031, 1039, 1048, 1052, 1053, 1054, 1055, 1061, 1063, 1065, 1073, 1074, 1077, 1087, 1089, 1094, 1104, 1107, 1108, 1116, 1123, 1128, 1133, 1145, 1149, 1156, 1163, 1164, 1167, 1181, 1194, 1196, 1198, 1200, 1201, 1209, 1220, 1222, 1224, 1227, 1237, 1238, 1241, 1249, 1256, 1261, 1271, 1272, 1282, 1286, 1289, 1290, 1291, 1296, 1297, 1299, 1300, 1305, 1307, 1314, 1319, 1320, 1321, 1326, 1327, 1341, 1342, 1343, 1346, 1355, 1366, 1369, 1370, 1371, 1373, 1378, 1382, 1394, 1404, 1411, 1419, 1420, 1422, 1423, 1427, 1429, 1430, 1432, 1436, 1438, 1452, 1459, 1467, 1472, 1473, 1476, 1488, 1493, 1494, 1499, 1504, 1507, 1515, 1521, 1522, 1532, 1552, 1553, 1556, 1562, 1563, 1565, 1571, 1573, 1585, 1587, 1592, 1597, 1599, 1600, 1605, 1612, 1632, 1636, 1665, 1670, 1671, 1681, 1686, 1689, 1693, 1696, 1698, 1706, 1713, 1718, 1720, 1725, 1728, 1730, 1732, 1740, 1741, 1752, 1759, 1760, 1762, 1765, 1768, 1769, 1770, 1788, 1810, 1828, 1831, 1835, 1837, 1839, 1849, 1851, 1853, 1861, 1863, 1871, 1872, 1873, 1875, 1885, 1889, 1892, 1896, 1898, 1901, 1903, 1905, 1914, 1921, 1936, 1937, 1947, 1951, 1956, 1962, 1964, 1968, 1970, 1982, 1983, 1984, 1986, 1991, 1992, 1994, 1999, 2011, 2020, 2022, 2025, 2028, 2031, 2034, 2039, 2054, 2059, 2069, 2084, 2085, 2087, 2089, 2094, 2101, 2105, 2116, 2119, 2127, 2132, 2137, 2138, 2139, 2140, 2153, 2155, 2158, 2162, 2167, 2176, 2187, 2197, 2209, 2218, 2220, 2221, 2222, 2227, 2228, 2230, 2231, 2234, 2238, 2245, 2248, 2251, 2252, 2257, 2258, 2264, 2265, 2270, 2274, 2284, 2297, 2300, 2304, 2309, 2320, 2325, 2330, 2336, 2342, 2346, 2350, 2354, 2358, 2360, 2361, 2367, 2381, 2382, 2383, 2384, 2390, 2393, 2397, 2405, 2406, 2410, 2425, 2433, 2437, 2438, 2442, 2446, 2452, 2453, 2463, 2468, 2469, 2484, 2491, 2493, 2494, 2496, 2497, 2500, 2511, 2514, 2515, 2523, 2528, 2530, 2537, 2538, 2540, 2543, 2550, 2552, 2554, 2558, 2563, 2570, 2571, 2585, 2596, 2601, 2608, 2616, 2619, 2621, 2624, 2627, 2629, 2644, 2648, 2650, 2651, 2656, 2659, 2663, 2669, 2670, 2687, 2690, 2691, 2693, 2696, 2699, 2700, 2703, 2704, 2708, 2712, 2734, 2745, 2749, 2750, 2753, 2754, 2762, 2766, 2777, 2780, 2783, 2789, 2792, 2794, 2802, 2805, 2809, 2818, 2823, 2826, 2827, 2829, 2834, 2836, 2837, 2841, 2845, 2851, 2852, 2862, 2874, 2878, 2883, 2885, 2895, 2901, 2914, 2915, 2916, 2922, 2925, 2929, 2930, 2935, 2937, 2938, 2939, 2949, 2953, 2959, 2960, 2962, 2965, 2966, 2969, 2970, 2978, 2984, 3001, 3007, 3019, 3020, 3023, 3025, 3032, 3043, 3058, 3070, 3072, 3075, 3090, 3093, 3098, 3100, 3103, 3117, 3128, 3134, 3144, 3148, 3156, 3158, 3159, 3162, 3165, 3167, 3169, 3176, 3181, 3182, 3183, 3189, 3191, 3195, 3196, 3202, 3203, 3208, 3217, 3219, 3222, 3223, 3231, 3235, 3244, 3256, 3261, 3267, 3282, 3284, 3286, 3292, 3295, 3298, 3312, 3314, 3321, 3322, 3324, 3328, 3335, 3348, 3352, 3358, 3364, 3369, 3377, 3383, 3384, 3389, 3394, 3399, 3400, 3406, 3410, 3418, 3419, 3422, 3427, 3428, 3431, 3435, 3446, 3447, 3449, 3461, 3468, 3470, 3481, 3488, 3489, 3491, 3492, 3494, 3501, 3527, 3539, 3543, 3547, 3557, 3560, 3582, 3588, 3594, 3600, 3601, 3603, 3604, 3607, 3616, 3625, 3627, 3631, 3634, 3635, 3650, 3655, 3660, 3665, 3666, 3672, 3681, 3683, 3688, 3691, 3711, 3713, 3714, 3715, 3721, 3723, 3725, 3727, 3736, 3737, 3740, 3747, 3749, 3751, 3755, 3757, 3764, 3765, 3767, 3768, 3772, 3783, 3788, 3793, 3813, 3816, 3817, 3818, 3821, 3823, 3827, 3832, 3844, 3845, 3846, 3853, 3854, 3858, 3860, 3866, 3867, 3868, 3870, 3873, 3887, 3888, 3891, 3896, 3897, 3898, 3900, 3901, 3915, 3916, 3921, 3932, 3942, 3947, 3950, 3957, 3959, 3960, 3963, 3965, 3977, 3978, 3981, 4003, 4013, 4015, 4023, 4026, 4029, 4031, 4034, 4038, 4065, 4075, 4082, 4096, 4098, 4100, 4107, 4110, 4111, 4113, 4114, 4119, 4120, 4124, 4127, 4133, 4134, 4135, 4146, 4150, 4156, 4157, 4182, 4187, 4192, 4198, 4208, 4212, 4216, 4217, 4220, 4222, 4225, 4226, 4233, 4243, 4244, 4246, 4252, 4255, 4257, 4259, 4260, 4266, 4269, 4281, 4286, 4287, 4290, 4292, 4296, 4308, 4314, 4315, 4331, 4337, 4345, 4346, 4348, 4356, 4366, 4373, 4376, 4377, 4379, 4385, 4390, 4399, 4401, 4414, 4416, 4419, 4428, 4429, 4430, 4432, 4447, 4464, 4479, 4481, 4482, 4483, 4492, 4495, 4497, 4510, 4512, 4521, 4526, 4532, 4534, 4535, 4538, 4545, 4555, 4563, 4565, 4566, 4574, 4580, 4596, 4597, 4603, 4615, 4619, 4621, 4624, 4625, 4630, 4642, 4645, 4651, 4652, 4654, 4656, 4659, 4665, 4667, 4668, 4678, 4685, 4686, 4689, 4691, 4694, 4695, 4699, 4703, 4713, 4719, 4724, 4729, 4754, 4755, 4761, 4765, 4776, 4777, 4778, 4784, 4787, 4791, 4792, 4797, 4798, 4800, 4801, 4804, 4811, 4813, 4815, 4829, 4836, 4846, 4873, 4877, 4880, 4882, 4885, 4888, 4896, 4908, 4930, 4933, 4934, 4946, 4948, 4951, 4952, 4954, 4961, 4964, 4969, 4979, 4990, 4995, 4996, 5010, 5011, 5013, 5014, 5015, 5020, 5023, 5024, 5038, 5041, 5042, 5043, 5044, 5045, 5051, 5053, 5057, 5058, 5065, 5066, 5067, 5079, 5084, 5088, 5090, 5093, 5094, 5095, 5098, 5118, 5123, 5128, 5139, 5143, 5144, 5146, 5147, 5154, 5156, 5160, 5162, 5164, 5171, 5174, 5175, 5184, 5186, 5188, 5190, 5196, 5197, 5198, 5200, 5220, 5223, 5228, 5230, 5239, 5245, 5246, 5251, 5256, 5261, 5276, 5277, 5280, 5284, 5286, 5295, 5304, 5307, 5308, 5310, 5311, 5317, 5323, 5329, 5351, 5354, 5364, 5368, 5372, 5384, 5410, 5417, 5419, 5420, 5422, 5423, 5430, 5441, 5443, 5450, 5462, 5464, 5465, 5476, 5480, 5483, 5484, 5489, 5492, 5493, 5501, 5505, 5511, 5512, 5517, 5522, 5527, 5528, 5534, 5542, 5547, 5553, 5559, 5563, 5576, 5583, 5587, 5589, 5590, 5597, 5599, 5613, 5616, 5619, 5625, 5627, 5629, 5644, 5650, 5655, 5667, 5676, 5680, 5688, 5689, 5692, 5694, 5703, 5708, 5709, 5715, 5716, 5720, 5722, 5728, 5729, 5730, 5735, 5742, 5744, 5746, 5749, 5752, 5753, 5755, 5763, 5767, 5777, 5783, 5794, 5808, 5811, 5813, 5818, 5821, 5836, 5839, 5841, 5853, 5868, 5879, 5886, 5888, 5891, 5892, 5904, 5910, 5927, 5933, 5941, 5942, 5945, 5946, 5949, 5951, 5952, 5958, 5962, 5972, 5973, 5974, 5976, 5981, 5982, 5986, 5989, 5995, 5996, 5997, 6010, 6016, 6026, 6028, 6033, 6037, 6049, 6059, 6060, 6066, 6070, 6074, 6075, 6077, 6082, 6084, 6085, 6088, 6093, 6102, 6106, 6109, 6117, 6119, 6122, 6128, 6131, 6134, 6145, 6149, 6157, 6158, 6161, 6162, 6166, 6177, 6199, 6203, 6207, 6208, 6211, 6212, 6215, 6218, 6220, 6221, 6224, 6241, 6242, 6248, 6252, 6255, 6260, 6261, 6263, 6267, 6282, 6284, 6287, 6290, 6292, 6295, 6303, 6310, 6315, 6326, 6340, 6341, 6348, 6353, 6357, 6359, 6361, 6368, 6371, 6373, 6374, 6381, 6383, 6388, 6396, 6397, 6400, 6411, 6414, 6415, 6417, 6418, 6420, 6427, 6442, 6448, 6458, 6459, 6465, 6469, 6473, 6474, 6478, 6486, 6501, 6505, 6506, 6514, 6518, 6521, 6527, 6528, 6529, 6530, 6544, 6550, 6551, 6553, 6557, 6561, 6565, 6569, 6575, 6581, 6586, 6591, 6602, 6607, 6611, 6614, 6627, 6637, 6641, 6646, 6647, 6653, 6654, 6659, 6660, 6663, 6666, 6673, 6677, 6680, 6681, 6683, 6684, 6689, 6690, 6691, 6693, 6702, 6714, 6724, 6735, 6744, 6749, 6753, 6756, 6758, 6771, 6772, 6773, 6774, 6779, 6784, 6792, 6795, 6806, 6810, 6817, 6822, 6824, 6826, 6827, 6842, 6852, 6857, 6872, 6877, 6880, 6883, 6886, 6889, 6891, 6900, 6912, 6917, 6919, 6920, 6925, 6927, 6928, 6929, 6941, 6943, 6947, 6949, 6955, 6960, 6964, 6974, 6975, 6990, 6997, 7001, 7006, 7008, 7010, 7013, 7015, 7019, 7022, 7026, 7036, 7038, 7039, 7040, 7048, 7050, 7058, 7060, 7062, 7072, 7074, 7076, 7080, 7083, 7101, 7123, 7141, 7142, 7143, 7146, 7149, 7151, 7152, 7159, 7170, 7171, 7179, 7181, 7183, 7186, 7191, 7193, 7198, 7205, 7213, 7215, 7218, 7222, 7225, 7230, 7240, 7241, 7246, 7275, 7279, 7299, 7306, 7311, 7312, 7314, 7319, 7324, 7326, 7338, 7340, 7346, 7348, 7349, 7355, 7356, 7358, 7359, 7379, 7389, 7390, 7396, 7404, 7407, 7412, 7417, 7418, 7423, 7435, 7438, 7439, 7444, 7452, 7459, 7473, 7475, 7479, 7481, 7482, 7484, 7488, 7489, 7491, 7492, 7500, 7507, 7517, 7529, 7533, 7538, 7540, 7541, 7542, 7545, 7556, 7565, 7568, 7569, 7570, 7584, 7585, 7590, 7591, 7592, 7597, 7604, 7606, 7611, 7612, 7614, 7615, 7620, 7621, 7622, 7625, 7629, 7639, 7640, 7650, 7655, 7656, 7662, 7670, 7673, 7674, 7684, 7687, 7689, 7691, 7702, 7710, 7711, 7713, 7715, 7717, 7730, 7744, 7747, 7748, 7755, 7762, 7766, 7778, 7783, 7788, 7795, 7803, 7804, 7807, 7817, 7822, 7824, 7834, 7837, 7838, 7846, 7848, 7850, 7856, 7857, 7858, 7859, 7863, 7872, 7880, 7881, 7886, 7887, 7921, 7928, 7932, 7936, 7937, 7939, 7944, 7946, 7950, 7953, 7957, 7964, 7968, 7969, 7970, 7976, 7977, 7989, 7993, 7996, 8007, 8010, 8011, 8014, 8021, 8038, 8039, 8044, 8054, 8061, 8065, 8070, 8073, 8074, 8079, 8080, 8083, 8088, 8090, 8097, 8100, 8109, 8112, 8117, 8122, 8124, 8125, 8129, 8136, 8143, 8153, 8156, 8165, 8171, 8182, 8198, 8202, 8213, 8216, 8233, 8234, 8235, 8236, 8237, 8247, 8249, 8250, 8255, 8257, 8259, 8262, 8273, 8276, 8279, 8286, 8287, 8290, 8294, 8298, 8315, 8321, 8327, 8331, 8335, 8336, 8340, 8345, 8348, 8349, 8354, 8356, 8367, 8376, 8378, 8382, 8390, 8404, 8406, 8413, 8415, 8419, 8420, 8422, 8427, 8438, 8443, 8454, 8464, 8469, 8471, 8473, 8476, 8478, 8479, 8481, 8487, 8502, 8503, 8508, 8511, 8513, 8522, 8523, 8528, 8535, 8539, 8542, 8543, 8548, 8552, 8553, 8556, 8560, 8581, 8586, 8587, 8593, 8597, 8605, 8606, 8611, 8612, 8620, 8622, 8629, 8632, 8634, 8635, 8648, 8649, 8655, 8668, 8685, 8686, 8693, 8703, 8704, 8719, 8726, 8742, 8745, 8747, 8748, 8753, 8755, 8762, 8765, 8766, 8767, 8775, 8787, 8788, 8790, 8794, 8801, 8803, 8805, 8809, 8811, 8814, 8817, 8818, 8819, 8830, 8836, 8842, 8847, 8859, 8863, 8870, 8872, 8875, 8877, 8880, 8884, 8886, 8888, 8895, 8898, 8899, 8902, 8907, 8908, 8910 |