
K is the Estimation for A094348(1000)

K = 74 224 306 218 661 920 611 968 383 996 168 554 711 900 917 077 570 550 213 879 203 517 460 111 716 080 ;

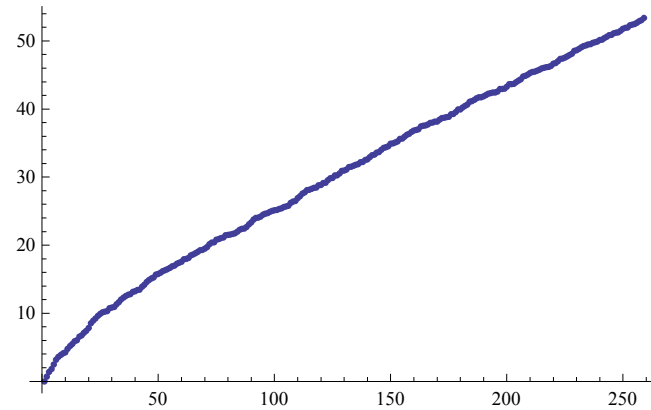
■ Importing data from bFile

```
data = Import[NotebookDirectory[] <> "b094348.txt", "Data"]
```

```
{ {1, 1}, {2, 2}, {3, 4}, {4, 6}, {5, 12}, {6, 24}, {7, 36}, {8, 48}, {9, 60}, {10, 72}, {11, 120}, {12, 180}, {13, 240},  
{14, 360}, {15, 420}, {16, 720}, {17, 840}, {18, 1260}, {19, 1680}, {20, 2520}, {21, 5040}, {22, 7560}, {23, 10080},  
{24, 15120}, {25, 20160}, {26, 25200}, {27, 27720}, {28, 30240}, {29, 45360}, {30, 50400}, {31, 55440}, {32, 83160},  
{33, 110880}, {34, 166320}, {35, 221760}, {36, 277200}, {37, 332640}, {38, 360360}, {39, 498960}, {40, 554400},  
{41, 665280}, {42, 720720}, {43, 1081080}, {44, 1441440}, {45, 2162160}, {46, 2882880}, {47, 3603600}, {48, 4324320},  
{49, 6486480}, {50, 7207200}, {51, 8648640}, {52, 10810800}, {53, 12252240}, {54, 14414400}, {55, 17297280},  
{56, 21621600}, {57, 24504480}, {58, 32432400}, {59, 36756720}, {60, 43243200}, {61, 61261200}, {62, 64864800},  
{63, 73513440}, {64, 110270160}, {65, 122522400}, {66, 147026880}, {67, 183783600}, {68, 232792560}, {69, 245044800},  
{70, 294053760}, {71, 367567200}, {72, 551350800}, {73, 698377680}, {74, 735134400}, {75, 1102701600},  
{76, 1163962800}, {77, 1396755360}, {78, 1470268800}, {79, 2095133040}, {80, 2205403200}, {81, 2327925600},  
{82, 2572970400}, {83, 2793510720}, {84, 3491888400}, {85, 4655851200}, {86, 5354228880}, {87, 5587021440},  
{88, 6983776800}, {89, 10475665200}, {90, 13967553600}, {91, 20951330400}, {92, 26771144400}, {93, 27935107200},  
{94, 32125373280}, {95, 41902660800}, {96, 48886437600}, {97, 53542288800}, {98, 64250746560}, {99, 73329656400},  
{100, 80313433200}, {101, 83805321600}, {102, 97772875200}, {103, 107084577600}, {104, 128501493120},  
{105, 146659312800}, {106, 160626866400}, {107, 240940299600}, {108, 293318625600}, {109, 321253732800},  
{110, 481880599200}, {111, 642507465600}, {112, 963761198400}, {113, 1124388064800}, {114, 1606268664000},  
{115, 1686582097200}, {116, 1927522396800}, {117, 2248776129600}, {118, 2329089562800}, {119, 3212537328000},  
{120, 3373164194400}, {121, 4497552259200}, {122, 4658179125600}, {123, 6746328388800}, {124, 8995104518400},  
{125, 9316358251200}, {126, 1349265677600}, {127, 13974537376800}, {128, 18632716502400}, {129, 26985313555200},  
{130, 27949074753600}, {131, 32607253879200}, {132, 46581791256000}, {133, 48910880818800}, {134, 55898149507200},  
{135, 65214507758400}, {136, 72201776446800}, {137, 93163582512000}, {138, 97821761637600}, {139, 130429015516800},  
{140, 144403552893600}, {141, 195643523275200}, {142, 260858031033600}, {143, 288807105787200}, {144, 391287046550400},  
{145, 433210658680800}, {146, 577614211574400}, {147, 782574093100800}, {148, 866421317361600}, {149, 1010824870255200},
```

```
{150, 1 444 035 528 936 000}, {151, 1 516 237 305 382 800}, {152, 1 732 842 634 723 200}, {153, 2 021 649 740 510 400},  
{154, 2 888 071 057 872 000}, {155, 3 032 474 610 765 600}, {156, 4 043 299 481 020 800}, {157, 5 342 931 457 063 200},  
{158, 6 064 949 221 531 200}, {159, 8 086 598 962 041 600}, {160, 10 108 248 702 552 000}, {161, 10 685 862 914 126 400},  
{162, 12 129 898 443 062 400}, {163, 18 194 847 664 593 600}, {164, 20 216 497 405 104 000}, {165, 21 371 725 828 252 800},  
{166, 24 259 796 886 124 800}, {167, 30 324 746 107 656 000}, {168, 32 057 588 742 379 200}, {169, 36 389 695 329 187 200},  
{170, 37 400 520 199 442 400}, {171, 48 519 593 772 249 600}, {172, 60 649 492 215 312 000}, {173, 64 115 177 484 758 400},  
{174, 72 779 390 658 374 400}, {175, 74 801 040 398 884 800}, {176, 106 858 629 141 264 000}, {177, 112 201 560 598 327 200},  
{178, 149 602 080 797 769 600}, {179, 219 060 189 739 591 200}, {180, 224 403 121 196 654 400}, {181, 299 204 161 595 539 200},  
{182, 374 005 201 994 424 000}, {183, 448 806 242 393 308 800}, {184, 673 209 363 589 963 200}, {185, 748 010 403 988 848 000},  
{186, 897 612 484 786 617 600}, {187, 1 122 015 605 983 272 000}, {188, 1 314 361 138 437 547 200}, {189, 1 346 418 727 179 926 400},  
{190, 1 533 421 328 177 138 400}, {191, 1 795 224 969 573 235 200}, {192, 2 244 031 211 966 544 000}, {193, 2 468 434 333 163 198 400},  
{194, 2 628 722 276 875 094 400}, {195, 2 692 837 454 359 852 800}, {196, 3 066 842 656 354 276 800}, {197, 4 381 203 794 791 824 000},  
{198, 4 488 062 423 933 088 000}, {199, 4 600 263 984 531 415 200}, {200, 6 133 685 312 708 553 600}, {201, 8 976 124 847 866 176 000},  
{202, 9 200 527 969 062 830 400}, {203, 9 419 588 158 802 421 600}, {204, 12 267 370 625 417 107 200}, {205, 15 334 213 281 771 384 000},  
{206, 18 401 055 938 125 660 800}, {207, 27 601 583 907 188 491 200}, {208, 30 668 426 563 542 768 000}, {209, 36 802 111 876 251 321 600},  
{210, 46 002 639 845 314 152 000}, {211, 55 203 167 814 376 982 400}, {212, 56 517 528 952 814 529 600}, {213, 65 937 117 111 616 951 200},  
{214, 73 604 223 752 502 643 200}, {215, 92 005 279 690 628 304 000}, {216, 101 205 807 659 691 134 400}, {217, 110 406 335 628 753 964 800},  
{218, 113 035 057 905 629 059 200}, {219, 131 874 234 223 233 902 400}, {220, 184 010 559 381 256 608 000}, {221, 197 811 351 334 850 853 600},  
{222, 263 748 468 446 467 804 800}, {223, 368 021 118 762 513 216 000}, {224, 395 622 702 669 701 707 200}, {225, 442 720 643 463 713 815 200},  
{226, 527 496 936 892 935 609 600}, {227, 659 371 171 116 169 512 000}, {228, 791 245 405 339 403 414 400}, {229, 1 186 868 108 009 105 121 600},  
{230, 1 318 742 342 232 339 024 000}, {231, 1 582 490 810 678 806 828 800}, {232, 1 978 113 513 348 508 536 000},  
{233, 2 373 736 216 018 210 243 200}, {234, 2 656 323 860 782 282 891 200}, {235, 3 099 044 504 245 996 706 400},  
{236, 3 164 981 621 357 613 657 600}, {237, 3 956 227 026 697 017 072 000}, {238, 4 351 849 729 366 718 779 200},  
{239, 4 747 472 432 036 420 486 400}, {240, 5 934 340 540 045 525 608 000}, {241, 6 198 089 008 491 993 412 800},  
{242, 7 912 454 053 394 034 144 000}, {243, 9 297 133 512 737 990 119 200}, {244, 11 868 681 080 091 051 216 000},  
{245, 12 396 178 016 983 986 825 600}, {246, 15 824 908 106 788 068 288 000}, {247, 17 407 398 917 466 875 116 800},  
{248, 18 594 267 025 475 980 238 400}, {249, 23 737 362 160 182 102 432 000}, {250, 30 990 445 042 459 967 064 000},  
{251, 34 814 797 834 933 750 233 600}, {252, 37 188 534 050 951 960 476 800}, {253, 52 222 196 752 400 625 350 400},  
{254, 55 782 801 076 427 940 715 200}, {255, 61 980 890 084 919 934 128 000}, {256, 74 377 068 101 903 920 953 600},  
{257, 92 971 335 127 379 901 192 000}, {258, 111 565 602 152 855 881 430 400}, {259, 148 754 136 203 807 841 907 200}}
```

```
ListPlot[Log[data[[All, 2]]]]
```



Estimation for PrimeOmega of A094348

```
dataprimeomega = PrimeOmega[data[[All, 2]]]
```

```
{0, 1, 2, 2, 3, 4, 4, 5, 4, 5, 5, 5, 6, 6, 5, 7, 6, 6, 7, 7, 8, 8, 9, 9, 10, 9, 8, 10, 10, 10, 9, 9, 10, 10, 11, 10, 11, 9, 11, 11, 12,
 10, 10, 11, 11, 12, 11, 12, 12, 12, 13, 12, 11, 13, 14, 13, 12, 13, 12, 14, 12, 14, 13, 13, 13, 14, 13, 12, 14, 15, 14, 14, 13,
 15, 15, 13, 14, 16, 14, 16, 14, 15, 15, 14, 15, 13, 16, 15, 15, 16, 16, 14, 17, 15, 17, 16, 15, 16, 16, 15, 18, 17, 16, 17,
 17, 16, 16, 18, 17, 17, 18, 18, 17, 18, 17, 19, 18, 16, 19, 18, 19, 17, 19, 20, 18, 20, 18, 19, 21, 19, 18, 19, 18, 20, 19,
 17, 20, 19, 20, 18, 20, 21, 19, 21, 19, 20, 22, 20, 19, 20, 19, 21, 20, 21, 20, 21, 19, 21, 22, 21, 20, 22, 22, 22, 21, 23,
 22, 21, 23, 20, 24, 23, 22, 24, 21, 22, 21, 22, 20, 22, 23, 22, 23, 23, 23, 24, 23, 22, 24, 21, 25, 24, 23, 23, 25, 22, 23,
 25, 22, 23, 26, 23, 21, 24, 23, 24, 24, 24, 25, 24, 25, 23, 22, 26, 25, 24, 26, 24, 23, 26, 23, 24, 27, 24, 22, 25, 24, 25,
 25, 25, 26, 25, 26, 24, 23, 27, 26, 25, 27, 26, 24, 27, 24, 27, 25, 28, 27, 25, 28, 25, 28, 26, 28, 26, 26, 27, 26, 27, 28}
```

```
PrimeOmega [K]
```

```
48
```

```
Normal [NonlinearModelFit [dataprimeomega, a * x^(1 / 2), {a}, x]]
```

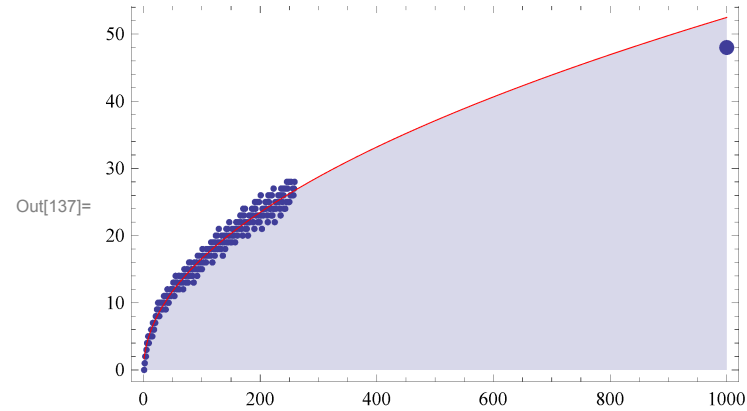
```
1.6594  $\sqrt{x}$ 
```

■ This is an estimation for PrimeOmega of A094348 (1000)

```
1.6594014658271592  $\sqrt{1000}$ 
```

```
52.4749
```

```
In[137]:= Show[ListPlot[dataprimeomega], Plot[1.6594014658271592` $\sqrt{x}$ , {x, 1, 1000}, Filling -> Bottom, PlotStyle -> Red],
ListPlot[{{1000, PrimeOmega[K]}}, PlotStyle -> PointSize[Large]], Frame -> True]
```



Estimation for PrimeNu of A094348

```
dataprimeomega = PrimeNu[data[[All, 2]]]
```

```
{0, 1, 1, 2, 2, 2, 2, 2, 3, 2, 3, 3, 3, 3, 4, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 5, 4, 4, 4, 5, 5, 5, 5, 5, 5, 5, 6, 5, 5, 5, 6, 6, 6, 6, 6,
6, 6, 6, 6, 6, 6, 7, 6, 6, 6, 7, 6, 7, 6, 7, 6, 7, 7, 7, 7, 7, 7, 8, 7, 7, 7, 7, 8, 7, 7, 8, 8, 7, 8, 7, 8, 7, 8, 8, 8, 9, 8, 8, 8, 8,
8, 9, 8, 9, 8, 8, 9, 9, 8, 9, 8, 8, 9, 9, 8, 9, 9, 8, 9, 9, 9, 9, 9, 9, 9, 9, 9, 10, 9, 9, 9, 10, 9, 9, 10, 9, 10, 10, 9, 10, 10,
10, 10, 10, 10, 11, 10, 10, 10, 11, 10, 10, 11, 10, 11, 11, 10, 11, 11, 11, 11, 11, 11, 11, 11, 11, 11, 12, 11, 11, 11, 12, 11, 11,
11, 12, 11, 11, 12, 11, 12, 11, 11, 12, 11, 12, 12, 12, 12, 12, 13, 12, 12, 12, 12, 12, 12, 12, 12, 12, 13, 12, 13, 12, 12, 12, 13, 12,
13, 13, 12, 13, 13, 12, 13, 14, 13, 13, 13, 13, 13, 13, 13, 13, 14, 14, 13, 13, 13, 13, 14, 14, 13, 14, 14, 13, 14, 15, 14, 14,
14, 14, 14, 14, 14, 14, 15, 15, 14, 14, 14, 14, 14, 14, 15, 14, 15, 14, 15, 14, 14, 15, 14, 15, 14, 15, 14, 15, 15, 15, 15, 15, 15}
```

```
PrimeNu[K]
```

43

```
Normal[NonlinearModelFit[dataprimeomega, a * x^(1/2), {a}, x]]
```

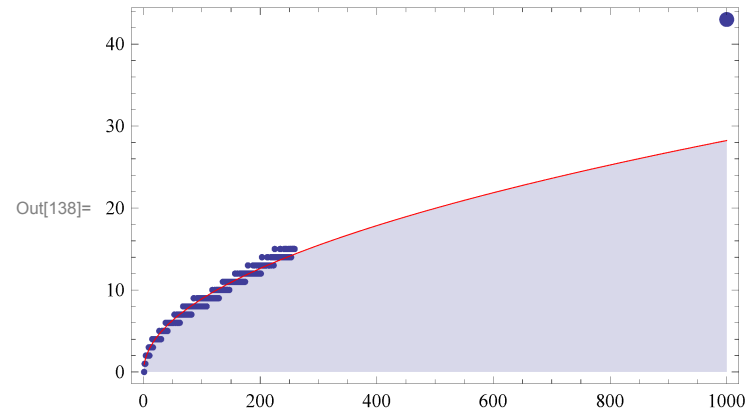
0.892917 \sqrt{x}

■ This is an estimation for PrimeNu of A094348 (1000)

0.8929170450817195` $\sqrt{1000}$

28.2365

```
In[138]= Show[ListPlot[dataprimeNu], Plot[0.8929170450817195` $\sqrt{x}$ , {x, 1, 1000}, Filling -> Bottom, PlotStyle -> Red],
ListPlot[{{1000, PrimeNu[K]}}, PlotStyle -> PointSize[Large]], Frame -> True]
```



Estimation for exponent of 2 at the prime fact of A094348

```
dataexp2 = FactorInteger[data[[All, 2]]][[All, 1]][[All, 2]]
```

```
{1, 1, 2, 1, 2, 3, 2, 4, 2, 3, 3, 2, 4, 3, 2, 4, 3, 2, 4, 3, 4, 3, 5, 4, 6, 4, 3, 5, 4, 5, 4, 3, 5, 4, 6, 4, 5, 3, 4, 5, 6, 4, 3, 5,
4, 6, 4, 5, 4, 5, 6, 4, 4, 6, 7, 5, 5, 4, 4, 6, 4, 5, 5, 4, 5, 6, 4, 4, 6, 7, 5, 4, 4, 6, 5, 4, 5, 7, 4, 6, 5, 5, 6, 4, 6, 4, 7,
5, 4, 6, 5, 4, 7, 5, 6, 5, 5, 6, 4, 4, 7, 6, 6, 7, 5, 5, 4, 6, 6, 5, 7, 6, 5, 6, 4, 7, 6, 4, 7, 5, 7, 5, 6, 8, 6, 7, 5, 7, 8, 6,
5, 6, 4, 7, 6, 4, 7, 5, 7, 5, 6, 8, 6, 7, 5, 7, 8, 6, 5, 6, 4, 7, 6, 7, 5, 7, 5, 6, 8, 6, 6, 7, 6, 7, 7, 8, 6, 6, 7, 5, 9, 7, 7,
8, 6, 7, 5, 7, 5, 6, 8, 6, 7, 6, 7, 8, 6, 6, 7, 5, 9, 7, 6, 7, 8, 6, 7, 8, 5, 7, 9, 6, 5, 8, 6, 7, 6, 7, 8, 6, 7, 6, 5, 9, 7, 6,
8, 7, 6, 8, 5, 7, 9, 6, 5, 8, 6, 7, 6, 7, 8, 6, 7, 6, 5, 9, 7, 6, 8, 6, 6, 8, 5, 7, 7, 9, 8, 6, 8, 6, 9, 7, 8, 6, 7, 8, 6, 7, 9}
```

```
FactorInteger[K][[1]][[2]]
```

4

```
Normal[NonlinearModelFit[dataexp2, a * x^(1/b), {a, b}, x]]
```

```
1.58258 x0.273423
```

```
1.582576901356324` 10000.2734227081554464`
```

```
10.4624
```

```
In[139]:= Show[ListPlot[dataexp2, Joined -> True], Plot[1.582576901356324` x0.2734227081554464`, {x, 1, 1000}, Filling -> Bottom, PlotStyle -> Red],  
ListPlot[{{1000, FactorInteger[K][[1]][[2]]}}, PlotStyle -> PointSize[Large]], Frame -> True]
```

