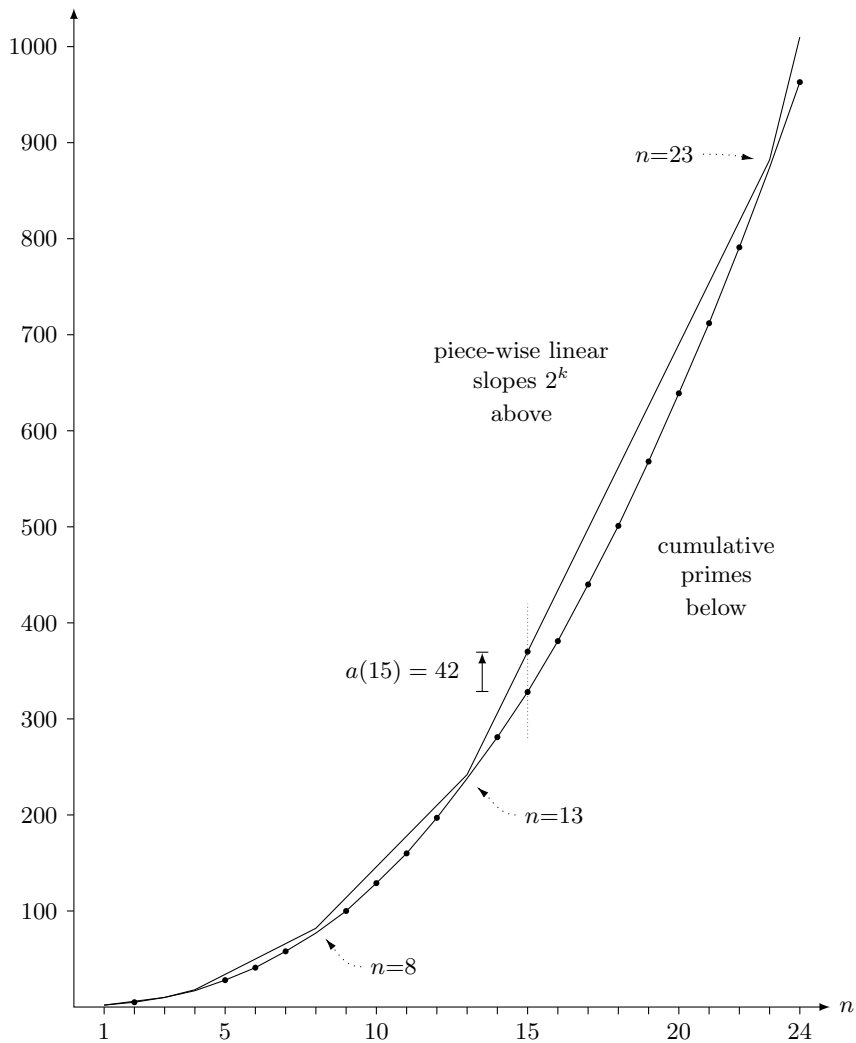


A338699 by Piecewise-Linear Above Cumulative Primes

Kevin Ryde, May 2021

Sequence A338699 can be thought of as fitting a piece-wise linear curve above the cumulative primes (A007504). The slope of each piece is a power 2^k and the next steeper piece begins where necessary to stay at or above the cumulative primes. Sequence values are the distance up from the cumulative primes to this curve.



Dots are shown at each n in the cumulative primes, except the closest approaches. The primes grow fairly steadily which makes it otherwise hard to see the cumulative primes are in segments rather than something smooth.

At the example $a(15) = 42$, the cumulative primes are $A007504(15) = 328$ and the piece-wise curve is at $y = 370$, for sequence $a(15) = 370 - 328 = 42$.

Points $n = 8, 13, 23$ are some of the places the piece-wise curve becomes steeper so as not to be overtaken by the cumulative primes. The primes are increasing so they eventually exceed any straight line.