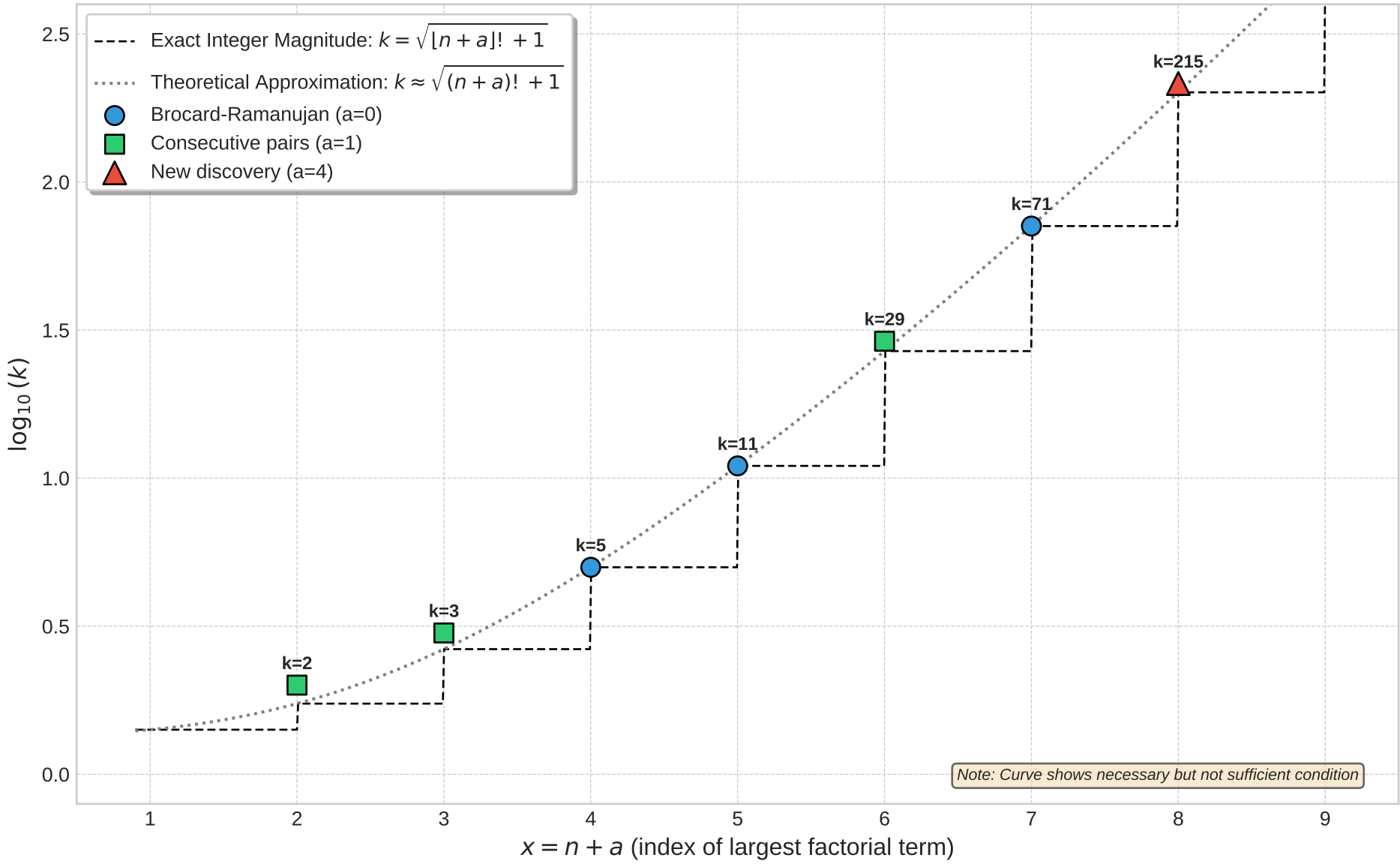
All Known Solutions Lie on the Theoretical Magnitude Curve
Exact Integer Magnitude: $k = \sqrt{\lfloor n + a \rfloor! + 1}$
Theoretical Approximation: $k \approx \sqrt{(n + a)! + 1}$
Brocard-Ramanujan (a=0)
Consecutive pairs (a=1)
New discovery (a=4)
k=2
k=3
k=5
k=11
k=29
k=71
k=215
Note: Curve shows necessary but not sufficient condition
$\log_{10}(k)$
$x = n + a$ (index of largest factorial term)
0.0
0.5
1.0
1.5
2.0
2.5
1
2
3
4
5
6
7
8
9